Phase Two Environmental Site Assessment

41 and 43 Essa Road

Barrie, Ontario

Prepared for:
Barrie Drive-A-Car (1979) Ltd.

Prepared by:
Azimuth Environmental
Consulting, Inc.

August 2020

AEC 18-175

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Environmental Assessments & Approvals

August 31, 2020 AEC 18-175

Barrie Drive-A-Car (1979) Limited
11 Shoreview Drive
Barrie, ON
L4M 1G2

Attention: Mr. George Dangerfield
Property Owner

Re: **Phase Two Environmental Site Assessment for Record of Site Condition**
41 and 43 Essa Road, Barrie, ON

Dear Mr. Dangerfield:

Azimuth Environmental Consulting, Inc. (Azimuth) is pleased to provide you with the following report documenting the Phase Two Environmental Site Assessment (ESA) conducted at 41 and 43 Essa Road within the City of Barrie, Ontario (the "RSC Property" or the "Site").

This assessment was initially conducted to evaluate the areas of potential environmental concern (APECs) on the RSC Property associated with past and present Site activities, as well as adjacent land use(s) in accordance with Ontario Regulation 153/04 (as amended). Once contaminants or concern (COCs) were identified, then these impact(s) were delineated laterally and vertically under the RSC Property. This work was conducted for the purpose of obtaining a Record of Site Condition (RSC) for the Site redevelopment.

The Phase Two ESA program completed to date consisted of:

- review of historical environmental reports for the RSC Property and any within the Study Area;
- advancing seven (7) test pits;
- drilling twenty five (25) boreholes;
- installation of twenty four (24) ground water monitoring wells;
- the collection of soil samples from the test pits and boreholes addressing contaminants of concern detections throughout the RSC Property;

- the collection of ground water samples from ground water monitors addressing contaminants of concern detections throughout the RSC Property; and
- the completion of an elevation survey, tying all test pits, boreholes and ground water monitor locations into the local geodetic datum.

The results of the Phase Two ESA indicated that environmental impacts (*i.e.*, parameter concentrations above the applicable O.Reg. 153/04 generic Table 2 site condition standards) are present at the RSC Property. This represents two locations associated with petroleum hydrocarbons (PHCs) with benzene, toluene, ethylbenzene, total xylenes (BTEX), chlorinated solvents (VOCs), dissolved metals, and polycyclic aromatic hydrocarbons (PAH) compounds in shallow soils and ground water samples. The two locations are defined to be beneath and to the west of the on-Site structure, with the second being defined to a north-south rectangular area south of the structure.

We trust this report is sufficient for your current requirements and would like to thank you for the opportunity to work with you on this project. Please do not hesitate to contact us if you have any questions.

Yours truly,
AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Ian Acheson, B.Sc.
Environmental Scientist

David Ketcheson, M.A.Sc., P.Eng, QP_{ESA}
Senior Environmental Engineer

DRK:IA

Attach:

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1.0 EXECUTIVE SUMMARY

A Phase Two Environmental Site Investigation (ESA) was undertaken by Azimuth Environmental Consulting, Inc. (Azimuth) for properties located at 41 and 43 Essa Road in the City of Barrie, Ontario (the “RSC Property” or the "Site"). The RSC Property is mostly paved with a single structure situated along the northern boundary, and over grown graveled ground surface to the West. Mr. George Dangerfield of Barrie Drive-A-Car (1979) Ltd. is the designated contact for this corporation. The RSC Property is to be re-developed for residential land use.

Azimuth has been provided or obtained, and relied upon several reports associated with the RSC Property and an adjacent property to the south-west. Two of these reports were Phase One ESA documents, completed by G2S Consultants for the RSC Property and 259 – 273 Innisfil Street, respectively. The Phase One ESA was updated by Azimuth in 2020 (O.Reg. 153/04 s.30.(2)). A summary of the “*areas of potential environmental concern* (APECs)” associated with the RSC Property is summarized below (Table A – overleaf). These APECs were determined through the historical evaluations completed by G2S, then revised through Azimuth’s investigation. The scope of work for the current investigation involved conducting soil and ground water sampling programs associated with an initial test pit program and two subsequent drilling programs used to delineate the contaminants of concern (CoC) on the RSC Property. In addition, this study included a ground water monitor elevation survey and producing a report suitable to support an RSC submission.

Based on the results of the Phase One ESA (Azimuth, 2020), including the Site inspection, information provided by Site representatives and regulatory agencies, documents reviewed, the review of the Site history, and receipt and review of information from the Ministry of Environment, Conservation and Parks (MECP), Azimuth identified the following *areas of potential environmental concern* (APECs) to be associated with the RSC Property:

1. Former Autobody Shop – 41 Essa Road:
   Historical records indicate that the RSC Property formerly operated as Reynold’s Collision Repair, an autobody shop, in 1963. A ground water monitoring network was installed to delineate the perimeter of the contaminated area in order to define the extent of the impact;

Table A: Areas of Potential Environmental Concern[1]

41 and 43 Essa Road, Barrie, ON						
Area of Potential Environmental Concern[2]		Location of Area of Potential Environmental Concern on RSC Property	Potentially Contaminating Activity[3]	Location of PCA (on-Site or off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, soil and/or sediment)
1	Historical use of RSC Property as a autobody shop	41 Essa Road on east side of RSC Property	10 – Commercial autobody shop	On-Site	PHCs, VOCs, Metals	Soil & Shallow Ground Water
2	Furnace oil UST	41 Essa Road west of existing building on RSC Property	28 – Gasoline and Associated Products Storage in Fixed Tanks	On-Site	PHCs, BTEX	Soil & Shallow Ground Water
3	Former retail fuel service station with AST	43 Essa Road at central position of RSC Property	28 – Gasoline and Associated Products Storage in Fixed Tanks	On-Site	PHCs, BTEX	Soil & Shallow Ground Water
4	A significant fire involving the former fuel AST	43 Essa Road involving the former service station AST on RSC Property	NA – Historic Fire Event	On-Site	PAHs	Soil & Shallow Ground Water
5	Historical use of property as autobody shop	35 Essa Road/ North RSC Property Boundary	10 – commercial autobody shop	Off-Site	PHCs, VOCs, Metals	Shallow Ground Water
6	Potential presence of a furnace oil UST	35 Essa Road/ RSC Property Boundary	28 – Gasoline and Associated Products Storage in Fixed Tanks	Off-Site	PHCs	Shallow Ground Water

Table A: Areas of Potential Environmental Concern[1]

41 and 43 Essa Road, Barrie, ON						
Area of Potential Environmental Concern[2]		Location of Area of Potential Environmental Concern on RSC Property	Potentially Contaminating Activity[3]	Location of PCA (on-Site or off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, soil and/or sediment)
7	Former Co-Op business with rail tracks to its north	259 – 273 Innisfil Street along north property boundary Southwest RSC Property Boundary	46 – Rail Yards, Tracks and Spurs	Off-Site	PHCs, PAHs, Metals	Shallow Ground Water
8	Former Co-Op business with historical bulk fertilizer storage	259 – 273 Innisfil Street presumably in structures or chemical silo/ Southwest RSC Property Boundary	22 – Fertilizer Bulk Storage	Off-Site	Ammonia	Shallow Ground Water
9	Former Co-Op business with historical bulk pesticide storage	259 – 273 Innisfil Street presumably in structures/ Southwest RSC Property Boundary	40 – Pesticides Bulk Storage	Off-Site	Organo-chlorines	Shallow Ground Water
10	Former Co-Op business with historic release to ground surface of furnace oil	259 – 273 Innisfil Street/ Southwest RSC Property Boundary	NA – Release to ground surface of furnace oil	Off-Site	PHCs, BTEX	Shallow Ground Water
11	Former Co-Op business historic release of urea	259 – 273 Innisfil Street presumably in proximity to chemical silo/ Southwest RSC Property Boundary	NA – Release to ground surface of urea	Off-Site	Inorganics	Shallow Ground Water
12	Historical use of the property as oil storage	34 Essa Road/ East RSC Property Boundary	28 – Gasoline and Associated Products Storage in Fixed Tanks	Off-Site	PHCs, BTEX	Shallow Ground Water

Table A: Areas of Potential Environmental Concern[1]

41 and 43 Essa Road, Barrie, ON						
Area of Potential Environmental Concern[2]		Location of Area of Potential Environmental Concern on RSC Property	Potentially Contaminating Activity[3]	Location of PCA (on-Site or off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, soil and/or sediment)
13	Historical use of the property as oil storage	40 Essa Road (formerly 37 Essa Road)/ East RSC Property Boundary	28 – Gasoline and Associated Products Storage in Fixed Tanks	Off-Site	PHCs, BTEX	Shallow Ground Water
14	Historic use of the property as an autobody shop	48 Essa Road presumably in structure (formerly 46 Essa Road)/ East RSC Property Boundary	10 – commercial autobody shop	Off-Site	PHCs, VOCs, Metals	Shallow Ground Water
15	Historic presence of USTs	48 Essa Road (formerly 46 Essa Road)/ East RSC Property Boundary	28 – Gasoline and Associated Products Storage in Fixed Tanks	Off-Site	PHCs, BTEX	Shallow Ground Water
16	Historic use of the property as a fuel service and storage yard	49 Essa Road/ South RSC Property Boundary	28 – Gasoline and Associated Products Storage in Fixed Tanks	Off-Site	PHCs, BTEX	Shallow Ground Water
17	Historic use of the property as a lumber storage yard	49 Essa Road/ South RSC Property Boundary	59 – Wood Treating and Preservative Facility and Bulk Storage of Treated Wood Products	Off-Site	Metals /ABN	Shallow Ground Water
18	CNR Rail Line	Adjacent Lands/ North – Northwest RSC Property Boundary	46 – Rail Yards, Tracks and Spurs	Off-Site	PHCs, PAHs, Metals	Shallow Ground Water
19	Historical dry cleaner	5 Gowan Road presumably in structure (formeraly 45 Gowan Road)/ East RSC Property Boundary	37 – Operation of Dry Cleaning Equipment	Off-Site	PHCs, VOCs	Shallow & Deep Ground Water

Table A: Areas of Potential Environmental Concern[1]

41 and 43 Essa Road, Barrie, ON						
Area of Potential Environmental Concern[2]		Location of Area of Potential Environmental Concern on RSC Property	Potentially Contaminating Activity[3]	Location of PCA (on-Site or off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, soil and/or sediment)
20	Current and historical fuel service station with USTs	62 & 64 Essa Road/ South RSC Property Boundary	28 – Gasoline and Associated Products Storage in Fixed Tanks	Off-Site	PHCs, BTEX, Metals	Shallow Ground Water
21	Historic release to ground surface of gasoline	62 & 64 Essa Road/ South RSC Property Boundary	NA – Releases to Ground Surface of Gasoline	Off-Site	PHCs, BTEX	Shallow Ground Water
22.	Historic automotive repair shop	62 & 64 Essa Road presumably in the structure South RSC Property Boundary	10 – Commercial autobody shop	Off-Site	PHCs, VOC, Metals	Shallow Ground Water
23	Historic use as an automotive repair shop	81 Essa Road presumably in structure South RSC Property Boundary	10 – Commercial autobody shop	Off-Site	PHCs, VOC, Metals	Shallow Ground Water
24	Historic fuel storage	81 Essa Road/ South RSC Property Boundary	28 – Gasoline and Associated Products Storage in Fixed Tanks	Off-Site	PHCs, BTEX	Shallow Ground Water
25	Historic use as an automotive repair shop	91 Essa Road presumably in structure (also 305 Innisfil Street)/ South RSC Property Boundary	10 – Commercial autobody shop	Off-Site	PHCs, VOC, Metals	Shallow Ground Water
26	Historic fuel and waste oil storage, and service station	91 Essa Road (also 305 Innisfil Street)/ South RSC Property Boundary	28 – Gasoline and Associated Products Storage in Fixed Tanks	Off-Site	PHCs, BTEX	Shallow Ground Water

Table A: Areas of Potential Environmental Concern[1]

41 and 43 Essa Road, Barrie, ON						
Area of Potential Environmental Concern[2]		Location of Area of Potential Environmental Concern on RSC Property	Potentially Contaminating Activity[3]	Location of PCA (on-Site or off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, soil and/or sediment)
27	Historic dry cleaning business	44 Gowan Street/ South RSC Property Boundary	37 – Operation of Dry Cleaning Equipment (where chemicals are used)	Off-Site	VOC	Deep Ground Water

Notes: 1 Refer to clause 16(2)(a), Schedule D, O.Reg. 153/04

2 Area of Potential Environmental Concern means the area on, in or under a RSC Property when one or more contaminants are potentially present, as determined through the phase one environmental site assessment, including through,
(a) identification of past or present uses on, in or under the RSC Property, and
(b) identification of potentially contaminating activity.

3 Potentially Contaminating Activity means a use or activity set out in Column A of Table 2 of Schedule D that is occurring or has occurred in a phase one study area

2. Former UST Furnace Oil Tank – 41 Essa Road:
   Inspection of the RSC Property identified fill and vent pipes at the rear of the on-Site structure, the placement of a former heating fuel oil underground storage tank (UST). Soil boreholes and ground water well network was installed to delineate the perimeter of the contaminated area in order to define the extent of the impact;

3. Former Retail Fuel Service Station with AST – 43 Essa Road:
   Historical records indicate that the RSC Property formerly operated as Reynold's Super Service Station with an AST, in 1963. A soil borehole and ground water monitoring network was installed throughout the perimeter of the contaminated area to define the extent of the impacts;

4. Historic Fire – 43 Essa Road
   The former retail service station AST reportedly caught on fire and suffered significant damage. A soil borehole and ground water well network was installed to delineate the perimeter of the contaminated area in order to define the extent of the impact;

5. Former Autobody Shop – 35 Essa Road:
   Historical records identify Londry Motors and Used Cars once occupied 35 Essa Road property in 1952. A soil borehole and ground water well network was installed around the Site perimeter to identify if associated petroleum hydrocarbons (PHC) impacts are present;

6. UST Tank – 35 Essa Road:
   Inspection of the RSC Property and the surrounding properties identified fill and vent pipes at the rear of the 35 Essa Road on-Site structure, the placement of a former heating fuel oil UST. A soil borehole and ground water well network was installed around the Site perimeter to identify if associated PHC and BTEX impacts are present;

7. Rail Tracks along North Boundary – 259 – 273 Innisfil Street:
   Rail tracks can be observed travelling along the north 259 – 273 Innisfil Street property boundary. Shallow ground water wells were installed along with existing RSC Property wells to form a network to identify if PHC, polycyclic aromatic hydrocarbon (PAH), and metals impacts are present;

8. Former Co-Op Business with Bulk Fertilizer Storage – 259 -273 Innisfil Street:
   A historical business identified as Simcoe District Co-Op Service once held bulk quantities of farming support fertilizers. This property is situated adjacent to the southwest of the RSC Property. A shallow ground water well network was installed to identify inorganic parameters associated with this APEC.

9. Former Co-Op Business with Bulk Pesticide Storage – 259 – 273 Innisfil Street:
   A historical business identified as Simcoe District Co-Op Service once held bulk quantities of farming support pesticides. This property is situated adjacent to the southwest of the RSC Property. Ground water wells were installed and added to the existing well network to identify if associated pesticide impacts are present;

10. Historic release of furnace oil – 259 – 273 Innisfil Street:
    The Ontario Spills records report a 500 L release of furnace oil at the Simcoe Co-op in 1991. This property is situated adjacent to the southwest of the RSC Property. Ground water wells were installed and added to the existing well network to identify if associated PHC impacts are present;

11. Historic release of liquid urea fertilizer – 259 – 273 Innisfil Street:
    The Ontario Spills records report that 75,000 L of liquid urea fertilizer was lost from an on-site tank at the United Co-op in 1988. This property is situated adjacent to the southwest of the RSC Property. Ground water wells were installed and added to the existing well network to identify if associated ammonia impacts are present;

12. Former Oil Storage – 34 Essa Road:
    Historical records indicate 34 Essa Road once was used for bulk oil storage between 1931 and 1946. A soil borehole and ground water well network was installed around the Site perimeter to identify if associated PHC and BTEX[1] impacts are present from this APEC within the shallow ground water;

13. Former Oil Storage – 37 Essa Road (currently 40 Essa Road):
    Historical records indicate 34 Essa Road once was used for bulk oil storage in 1907. A soil borehole and ground water well network was installed around the Site perimeter to identify if associated PHC and BTEX impacts associated with the APEC are present within the shallow ground water;

14. Former Autobody Shop – 46 Essa Road (currently 48 Essa Road):

[1] BTEX - benzene, toluene, ethylbenzene and xylenes

Historical property use identified as Garage & Auto Repairs between 1931 and 1963. A soil borehole and ground water well network was installed around the Site perimeter to identify if associated PHC, volatile organic compound (VOC) and metal impacts associated with this APEC are present within the shallow ground water;

15. Former UST Fuel Storage – 46 Essa Road (currently 48 Essa Road):
Historical records identify fuel storage USTs associated with the former autobody shop, between 1931 and 1963. A soil borehole and ground water well network was installed around the Site perimeter to identify if associated PHC and BTEX impacts are present within the shallow ground water;

16. Former Bulk Treated Lumber Storage – 49 Essa Road:
Historical records identify Allandale Lumber, Fuel & Construction Co. Ltd., where bulk quantities of preserved wood were once stored between 1942 and 1976. A ground water well network was installed along the South Site boundary to identify if dissolved metals associated wood preserve impacts are present within the shallow ground water table at the RSC Property;

17. Former AST Fuel Storage – 49 Essa Road:
Historical records identify Allandale Lumber, Fuel & Construction Co. Ltd. with fuel and oil storage ASTs were once present, between 1942 and 1976. Soil boreholes and ground water wells were installed and added to the well network at the RSC Property. PHC, BTEX and dissolved metals parameters were analyzed within the shallow ground water table to determine if associated impacts with this APEC are present at the RSC Property;

18. Rail Tracks – No Address (directly north-west adjacent):
Inspection of the RSC Property and review of historical surrounding property records identified a CNR Rail Line traversing the northern RSC Property boundary, dating back to 1907. A soil borehole and ground water well network was installed along the north and northeast Site boundary to identify if PHCs, PAH and metal impacts are present within the soils and shallow ground water at the RSC Property;

19. Former Dry Cleaning Operations – 5 Gowan Road (formerly 45 Gowan Road):
Historical records identified a dry cleaning business, Chinese Laundry in 1907. In 1907, dry cleaning would have used PHCs. A shallow soil borehole and ground water well network was completed to determine if these impacts could have migrated within the shallow ground water table. A deep ground water well was installed along the northeast Site boundary to identify if chlorinated solvents have transported to

depth, should the operations had formerly used them, and migrated West towards the RSC Property;

20. Current Gasoline Service Station with UST – 62 Essa Road (formerly 64 Essa Road):
    Historical records identified a gasoline service station with one gasoline UST between 1946 and 1982, in addition to the currently observed Esso operations. A ground water well network was installed along the South Site boundary to identify if associated PHC and BTEX impacts are present at the RSC Property;

21. Former Gasoline Release to Ground Surface – 62 Essa Road (formerly 64 Essa Road):
    Historical records identified in 2010 a release of 50 L to ground surface of gasoline. A ground water well network was installed along the South Site boundary to identify if associated PHC and BTEX impacts with this APEC are present at the RSC Property;

22. Former Automotive Repair Shop – 62 Essa Road (formerly 64 Essa Road):
    Historical records have identified an automotive repair shop on these lands from 1971 to 1982. A ground water well network was installed along the South Site boundary to identify if associated PHC, VOC and dissolved metal impacts are present at the RSC Property;

23. Current & Former Autobody Shops – 81 Essa Road:
    Historical records identified the on-site building as Car Sales & Repairs, B&K Auto, Auto Service, Huronia Ford, Pierre Motors from 1963 onward, and currently Peacock Auto Service Ltd. A ground water well network was installed along the South Site boundary to identify if associated PHC, VOC and dissolved metal impacts are present within the shallow ground water at the RSC Property;

24. Current & Former Fuel Storage Tank – 81 Essa Road:
    Historical records identified a fuel storage tank is present at the property. A ground water well network was installed along the South Site boundary to identify if associated PHC and BTEX impacts from this APEC, are present at the RSC Property;

25. Former Autobody Shop – 91 Essa Road (also 305 Innisfil Street):
    Historical records identified Mike's Service Centre, Cunnington's Texco Service from 1963 to 1990 as autobody shops. A ground water well network was installed along the South boundary to identify if associated PHC, VOC and metal impacts are present at the RSC Property, within the shallow ground water;

26. Former Fuel Storage Tanks – 91 Essa Road (also 305 Innisfil Street):
    Historical records identified Mike's Service Centre, Cunnington's Texco Service and Texco from 1963 to 1990 with fuel and waste oil storage tanks. A ground water well network was installed along the South Site boundary to identify if associated PHC and BTEX impacts are present within the shallow ground water at the RSC Property;

27. Historical Dry Cleaning Business – 44 Gowan Street:
    Historical records identify the property as a former dry cleaner. A deep ground water well network was installed along the South Site boundary to identify if associated VOC impacts are present at the RSC Property, within the deep ground water;

Figure 6a presents the locations of all APECs associated with the RSC Property and the Phase One Study Area. Figure 6b describes each APEC associated with the RSC Property and the Phase One Study Area. Figure 6c depicts the on-Site impacted boundaries associated with on- and off-Site APECs. Table A (above) summarizes each APEC described above and the associated potential contaminants of concern at the RSC Property.

Several PCAs were identified either by G2S Environmental Consulting Inc. (G2S) and Azimuth within in the Phase One Study Area; however, some of the PCAs were not assessed and not considered to be sources of APECs to the RSC Property. These considerations were given based upon a Phase One RSC Report completed by Azimuth in 2020, which reviewed six (6) key historic environmental reports for the RSC Property, an adjacent property, and for the City of Barrie. The reports relied upon in Azimuth's 2020 Phase One RSC Report were:

1. Phase One Environmental Site Assessment for 41 & 43 Essa Road (G2S, 2018);
2. Phase Two Environmental Site Assessment for 41 & 43 Essa Road (G2S, 2018);
3. Phase II Environmental Site Assessment for 259 – 273 Innisfil Street (G2S, 2012);
4. Phase One Environmental Site Assessment for 259 – 273 Innisfil Street (G2S, 2018);

5. Phase Two Environmental Site Assessment for 259 – 273 Innisfil Street (G2S, 2018); and
6. 2015 Annual Groundwater Monitoring Program – Final Report for City of Barrie (Golder, 2016).

Azimuth obtained the Golder 2015 Annual Groundwater Monitoring Program Report, to contribute towards their study of the RSC Property, through a Freedom of Information request to the City of Barrie.

The Phase Two ESA consisted of advancing a network of exploratory and delineating subsurface holes across the RSC Property. Seven test pits were advanced during the initial stages of the investigation, a network of 25 boreholes were drilled, corresponding with the installation of 24 ground water monitoring wells over three on-Site investigation programs. The RSC Property consisted of 12 pre-installed ground water monitors, completed by G2S, as a part of their Phase Two ESA investigation in 2018. Two of Azimuth's subsurface exploratory programs included the use of test pits and boreholes, whose locations were chosen to, investigate the various APECs identified in the G2S Phase One and Two ESAs and additional APECs found as a part of Azimuth's Phase One ESA. Test pits were advanced to determine source area locations to the depth of the ground water table, due to unstable ground conditions causing side-wall sloughing. Deep soil boreholes completed during the first drilling event by Azimuth, were advanced through the soil profile, the ground water table and to the first local fine grained aquitard contact. A series of monitoring wells were completed with the intent that the screened interval was positioned across the water table, both to confirm the water table and to evaluate the potential presence of petroleum hydrocarbon (PHC) contamination.

The final drilling event was used to delineate the on -Site impacts associated with APECs since off-Site sources were not detected using a series of perimeter monitoring wells. This event saw the installation of a network of ground water monitors, with their screens installed across the water table, through the zone of impact, and below the zone of impact. Field screening of soil samples was conducted during the test pit and drilling programs to evaluate the potential for volatile contaminants at each of the borehole locations. Soil samples were selected for laboratory analysis based on the field screening, visual and olfactory results. Ground water monitors were installed upon the completion of each borehole. All the ground water monitoring wells were sampled following completion of the soil drilling program in October 2018, and May/ June 2019. Soil grab samples were also collected to delineate vertically and horizontally around the PHC, VOC, metals, inorganics and PAH throughout RSC Property. A confirmatory

ground water sampling event was completed in November 2019, and water levels were collected across the entirety of the RSC Property in June 2020.

Based on the results of the soil and ground water analyses, completion of a risk assessment (RA) will be required to address the soil and ground water exceedances detected at the RSC Property.

2.0 INTRODUCTION

2.1 Applicable Site Condition Standard

Based on the following available information, the RSC Property is not considered to be environmentally sensitive as defined in Sections 41 and 43.1 of the O.Reg. 153/04:

- there are no nature reserves, areas of natural or scientific interest, or provincial parks present. The RSC Property is located within a predominantly commercial/ residential mixed area which permits commercial land use;
- the RSC Property does not include all or part of a water body, the RSC Property is not adjacent to a water body, and the RSC Property does not include lands that are within 30 m of a water body. There are no surface water bodies or watercourses located on the RSC Property. The closest surface water body (Kempenfelt Bay) is located approximately 300 m northeast of the RSC Property;
- representative shallow and deep soil samples were collected from five (5) locations during this investigation and were evaluated for pH. These measurements reported typical soil pH levels; and
- overburden was encountered during investigation activities up to a depth of approximately 12 m below ground surface (mbgs) and bedrock was not encountered. The water well records for the area illustrate that the overburden thickness is in excess of 10 m, as bedrock is reportedly 115 mbgs (ORMGWP, 2019). Therefore, the RSC Property is not considered a shallow soil property.

Based on this assessment the RSC Property is not in an environmentally sensitive area.

The planned future land use is a mixed residential and commercial redevelopment plan and thus it is proposed that the generic Table 2 Site Condition Standards (SCS) (MOECC, 2011 [as amended]) for a residential land use be used for this assessment. The overburden soil conditions were primarily composed of medium to fine grained interbedded sands with either gravel or trace silts. As a result, the laboratory analytical data has been compared to the coarse-grained standards, where applicable. The estimated

high ground water table condition is considered to be at least 1.88 m below ground surface, as collected from the June 5, 2020 event.

All the environmental standards presented and discussed in the current report have been used for evaluation purposes.

3.0 BACKGROUND INFORMATION

3.1 Physical Setting

The RSC Property is located on the west side of Essa Road in the City of Barrie and is situated south of the Gowan Street and Essa Road intersection, and north of the Cumberland and Essa Road intersection in the City of Barrie, Ontario (Figure 2). The RSC Property is an irregularly shaped property roughly 95 m by 65 m, at its longest lengths, and approximately 0.57 hectares (ha) (1.41 acres) in size. It is accessed to the west from Essa Road, bounded by Canadian National Rail railway to the northwest, flanked by commercial businesses and few residential properties to the north, south and east.

The RSC Property was originally developed with a single residential dwelling on it, prior to a change in ownership and use in 1952, where land use changed when Cooke Cartage and Storage assumed operations (Azimuth, 2020). The Dangerfield family have been the Site Owners since 1966. The surrounding area is comprised of a mixture of residential and commercial land use along the Essa Road, Innisfil Street and Tiffin Street corridors. Some commercial lands to the south and adjacent to the RSC Property are in preparation to be sold in conjunction with the RSC Property for mixed residential use. The RSC Property fronts Essa Road which will be referred as a north-south trending road.

Figure 2 shows the RSC Property and the immediately surrounding area. According to the Phase One ESA (Azimuth, 2020) there are no significantly protected wetlands or features of environmental importance within the vicinity of the RSC Property.

The RSC Property is fairly flat, and is found at an elevation of 227 meters above sea level (masl) near the centre of the parcel, and displays a marginal slope towards the centre of the property where a storm water catchment basin resides, and continues the slope towards the northeast property corner and Kempenfelt Bay. The RSC Property is located approximately 360 m northeast of Kempenfelt Bay, Lake Simcoe; within the Hotchkiss Creek subwatershed. The local and regional topography displays a gradual slope north and east toward Kempenfelt Bay. As noted above, there is currently one storm water catchment basin at the RSC Property that connected to the main municipal line beneath

Essa Road. Given the permeable nature of the soils, runoff is expected minimal and to follow the local topographic grade.

3.2 Past Investigations

The first historic Site investigation available for the RSC Property is a Phase I ESA completed by G2S Environmental Consulting Inc. in 2018. A subsequent Phase II ESA investigation was completed by G2S based upon the results found within the Phase I ESA in 2018. This Phase I ESA, completed in February 2018, indicated that a Phase II environmental investigation would be required. Immediately upon the completion of the Phase I ESA, G2S carried out a Phase II ESA evaluation in April 2018. Soil and ground water evaluation programs were conducted around former fuel storage locations to determine the possibility of historic releases. Representative samples were collected as a part of these programs. Shallow soils were reported to be compact silty sand throughout the Site. Ground water was reportedly found between 2.3 mbgs and 3.5 mbgs. Concentrations of petroleum hydrocarbons (PHCs) including Benzene, Toluene, Ethylbenzene and Xylenes (BTEX), volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs) and hexane were reported within the soils and ground water samples collected at the Site. Concentrations of metals and inorganics were all reportedly below the Ministry of Environment, Conservation and Parks (MECP) Table 2 SCS in the soils and ground water. Conclusions derived from the Phase II ESA Report determined that a remediation or risk management measures are required for the RSC Property to meet the requirements of O.Reg. 153/04. Copies of these reports are provided in Azimuth's 2020 Phase One RSC evaluation.

G2S had also produced three (3) ESA reports for an adjacent property; 259 – 273 Innisfil Street Road. These reports were provided in confidence to Azimuth by the Owner for completion of their Phase One RSC investigation of the RSC Property. These reports include a Phase 2 ESA completed in 2012, a Phase I ESA completed in 2018, and a subsequent Phase II ESA completed in 2018. This property is the source of several PCAs and these reports and their findings were relied upon in Azimuth's completion of their Phase One RSC evaluation.

A Golder Associates Ltd. (Golder) 2015 Annual Groundwater Monitoring Program – Final Report provided to the City of Barrie was also relied upon in Azimuth's evaluation of off-Site PCAs and APECs towards the RSC Property. This report was obtained by Azimuth through a Freedom of Information submission request to the City of Barrie.

Through Azimuth's Phase One ESA evaluation, new additional information was revealed in the evaluation of the Site's PCAs and APECs, not originally identified within the G2S

Phase I ESA and Phase II ESA reports (O.Reg. 153/40 s.30.(2)). A discussion on the overall interpretation of the APECs and results of the assessment at the RSC Property is provided in Section 6.0. Figures 6a shows the location of the various APECs identified as part of Azimuth's Phase One ESA evaluation. Figure 6b describes each APEC identified in Figure 6a. Figure 6c depicts the locations on the RSC Property where APECs influence. The following is a summary of the results of the Phase One ESA:

- the RSC Property transferred from Crown to private ownership in 1823and had residential dwellings constructed prior to 1954;
- the RSC Property transferred to current ownership in 1966, where prior ownership groups changed the property use to commercial through the operation of a cartage business, an automotive repair shop and service station, grocery stores, banquet hall and night club. The current on-Site structure was constructed to facilitate some of these other operations, which date back to the early 1960s;
- historic aerial photographic images reviewed from 1954, 1971, 1989, 1997, 2004 2007, and 2013 show the transition of development of the RSC Property;
- a total of two (2) on-Site and four (4) off-Site APEC properties associated with current or historical activities that present environmental concern and were identified within the G2S Phase I ESA evaluation. Additional or not properly evaluated off-Site PCAs and APECs were identified beyond the G2S evaluation through the completion of Azimuth's Phase One ESA evaluation (O.Reg. 153/04 s.30.(2));
- a total of twenty-seven (27) APECs were identified upon the completion of the Phase I ESA study.

4.0 SCOPE OF THE INVESTIGATION

4.1 Overview of the Site Investigation

The RSC Property investigation consisted of conducting an exploratory test pit program, two (2) soil drilling and ground water sampling program at the various APECs, a confirmatory ground water sampling event, and a water table measurement program. Each event will be discussed in turn, and each event will be identified by their advancement date.

4.1.1 Phase II ESA Investigation; G2S – 2018

A previous Phase II ESA evaluation was completed in 2018 by G2S. G2S preformed an evaluation of the soil and ground water at the RSC Property. Analytical results were compared to Table 2 Site Condition Standards (SCS) for coarse textured soils and residential/ parkland/ institutional property use. Through their Phase I ESA evaluation,

G2S identified six (6) APECs associated with on and off-site sources. Twelve (12) boreholes and eleven (11) ground water monitors were installed throughout the RSC Property to identify if impacts associated with onsite APECs were present. Based upon the analytical findings of the soil and ground water evaluation, the RSC Property was determined to have not met the MECP Table 2 SCS for Residential/ Parkland/ Institutional Property Use for coarse textured soils. Concentrations of petroleum hydrocarbons including benzene, toluene, ethylbenzene, xylenes, and polycyclic aromatic hydrocarbons were above Table 2 SCS in soils. Petroleum hydrocarbons, including benzene, toluene, ethylbenzene, xylenes, hexane and polycyclic aromatic hydrocarbons were found to be above Table 2 SCS within the ground water. Sheens and petroleum hydrocarbon odours were present within the ground water at monitors: MW102, MW103 and MW107. The locations and rationale for boreholes and ground water monitors installed by G2S are presented in Table B (below).

Table B: G2S Phase II ESA Investigation Borehole/ Well List Location and Rationale

Borehole/ Monitoring Well Name	Location	Rationale
BH101/ MW101	Southwest RSC Property	Investigate fill material, subsurface soils, soils characterization, and potential contamination from the southwest.
BH102/ MW102	North RSC Property	Investigate potential contamination from historical on-Site sources.
BH103/ MW103	Central RSC Property	Investigate surface soils, subsurface soils, and potential contamination from historical on-Site operations.
BH104	Southeast RSC Property Corner	Investigate potential contamination south and east adjacent properties
BH105/ MW105	Northeast RSC Property Corner	Investigate potential contamination from north adjacent properties
BH201/ MW201	North RSC Property	Vertical delineation of PHC and PAH impacts in BH103
BH202/ MW202	North RSC Property	Lateral delineation of PHC and PAH impacts in BH102
BH203/ MW203	North RSC Property	Lateral delineation of PHC and PAH impacts in BH102

Table B: G2S Phase II ESA Investigation Borehole/ Well List Location and Rationale

Borehole/ Monitoring Well Name	Location	Rationale
BH204/ MW204	Central RSC Property	Lateral delineation of PHC and PAH impacts in BH103
BH205/ MW205	Central RSC Property	Lateral delineation of PHC and PAH impacts in BH103
BH206/ MW206	Central RSC Property	Lateral delineation of PHC and PAH impacts in BH103
BH207/ MW207	North RSC Property/ within On-Site Structure	Lateral delineation of PHC and PAH impacts in BH102

Azimuth used this initial investigation as a foundation for proceeding with this Phase Two ESA investigation.

4.1.2 On-Site Presence/ Absence Test Pit Program – May 2018

Seven test pits were advanced at the RSC Property for the purpose of confirming the presence or absence of impacts associated with the on-Site APECs. Subsurface soil samples were collected from soil piles retrieved which were organized vertically based upon soil horizons from each test pit. Test pits were advanced using a Deere 310SG rubber tired backhoe. Table C presents a list of the test pits, their locations, and the rationale for their collection. The soil samples were field screened, and selected samples were submitted for laboratory analysis of a range of parameters. The location of each test pit is presented in Figure 3.

Table C: Sample Analysis Plan – May 2018

Borehole/ Well Name	Location	Rationale
TP-1	Centrally positioned at RSC Property	Evaluate potential for shallow soil PHC, VOC, metals and PAH impacts from adjacent former fuel AST and autobody repair.
TP-2	Centrally positioned at RSC Property	Evaluate potential for shallow soil PHC, VOC, metals and PAH impacts from adjacent former fuel AST and autobody repair.

Table C: Sample Analysis Plan – May 2018

Borehole/ Well Name	Location	Rationale
TP-3	Centrally positioned at RSC Property	Evaluate potential for shallow soil PHC, VOC, metals and PAH impacts from adjacent former fuel AST and autobody repair.
TP-4	Centrally positioned at RSC Property	Evaluate potential for shallow soil PHC, VOC, metals and PAH impacts from adjacent former fuel AST and autobody repair.
TP-5	North RSC Property Boundary; West of on-Site Structure	Evaluate potential for shallow soil PHC, VOC, metals and PAH impacts from adjacent former furnace oil UST and autobody repair.
TP-6	North RSC Property Boundary; West of on-Site Structure	Evaluate potential for shallow soil PHC, VOC, metals and PAH impacts from adjacent former furnace oil UST and autobody repair.
TP-7	North RSC Property Boundary; West of on-Site Structure	Evaluate potential for shallow soil PHC, VOC, metals and PAH impacts from adjacent former furnace oil UST and autobody repair.

Results from this investigation confirmed impacts throughout the RSC Property, as identified in the G2S Phase II ESA. The ground water table was intercepted during the advancement of the test pits. The ground water table was approximately measured to be 2 meter below ground surface. Sheening was observed on the ground water, within test pits: TP-1, TP-4, TP-6 and TP-7. Petroleum hydrocarbon odours were present from all test pits advanced at the RSC Property. Two soil samples were submitted for laboratory analysis for contaminant characterization. Samples were collected from Test pits TP-1 and TP-6, as each represented differing source areas. Petroleum hydrocarbons, including toluene, ethylbenzene, xylenes, hexane, naphthalene and 1,1-biphenyl were found to have exceeded Table 2 SCS from the samples. As a result of this investigation, Azimuth concluded that a drilling program would be required for delineating found impacts within the soils and ground water.

4.1.3 Drilling and Ground Water Sampling Event – October 2018

Five soil boreholes were advanced at the RSC Property, with four of which were completed as ground water monitoring wells (Figure 3). Borehole and ground water monitors were advanced and samples to provide further analytical insight in identifying off-Site PCAs, and both vertically and horizontally delineating on-Site impacts. Subsurface soil samples were collected from split-spoon augers at specific depths through

the soil profile to identify CoCs associated with the on- and off-Site APECs within the soils. Ground water samples were collected from each of the newly installed ground water monitors to identify CoCs associated with on- and off-Site APECs within the ground water table. In addition, four additional ground water samples (8 total) were collected from existing on-Site ground water monitors for parameters not considered for evaluation by G2S as a part of their evaluation. Table D presents a list of the soil boreholes and ground water monitoring wells, their locations, and the rationale G2S provided for their installation or collection.

Table D: Sample Analysis Plan – October 2018

Borehole/ Well Name	Location	Rationale
MW105	Northeast corner of RSC Property	Evaluate potential shallow ground water impacts associated with bulk oil storage from 34 and 40 Essa Road
MW202	North boundary of RSC Property	Evaluate metals, acid/ base/ & neutral impacts associated with the adjacent rail tracks
MW203	North boundary of RSC Property	Evaluate metals, acid/ base/ & neutral impacts associated with the adjacent rail tracks
MW205	South boundary of RSC Property	Evaluate impacts associated with treated lumber storage and fuel storage from a former lumber and fuel business at 49 Essa Road
BH-304/ MW-304	Southeast corner of RSC Property	Evaluate potential for soil and ground water impacts associated with in bulk oil storage at adjacent off-Site APECs
BH-305/ MW-305	Northeast corner of RSC Property	Evaluate potential for deep soil and ground water chlorinated solvent impacts from nearby former dry cleaner at 44 Gowan Street
BH-308/ MW-308	East boundary of RSC Property	Evaluate potential for soil and ground water impacts from former bulk oil storages associated with 34 and 40 Essa Road
BH-309/ MW-309	Centrally positioned at RSC Property, south of on-Site structure	Evaluate potential for shallow and deep soil and ground water impacts centrally positioned at the RSC Property

For the confirmatory soil drilling program, each soil borehole was advanced using a combination of hollow-stem augers and a split spoon sampling device. The addition of

drilling mud was applied to the advancement of the deep boreholes in order to maintain hole integrity throughout deeper auger advancement within the saturated sandy soils. The soil samples were field screened, and selected samples were submitted for laboratory analysis of a range of parameters. Soil samples were primarily collected at the ground water table or directly below it, using field screening to identify worst possible case for sample submission. Two (2) soil samples were collected at depth to determine whether dense non-aqueous phase liquid (DNAPL) chlorinated solvents could be present from historical PCA off-Site operations. Soil samples were collected for PHC, including BTEX, VOCs, heavy metals, inorganics, PAHs and acid, base and neutral semi-volatiles (ABN) parameters. PHC, BTEX, and naphthalene were found to have exceeded Table 2 SCS in soils at BH308 and BH309. Heavy metal, VOC and inorganic parameters were found to not have exceeded Table 2 SCS within soils at all new locations.

Ground water monitoring wells were constructed to O.Reg. 903/90 [as amended] Provincial standards. Each well was sampled for parameters associated with corresponding on- or off-Site APECs. These analyses included any combination of PHCs + BTEX, VOCs, dissolved metals and inorganics, PAHs, and ABN parameters. Ground water monitor MW309 was found to have PHC and BTEX parameters above Table 2 SCS. Dissolved metals, inorganic, VOC and PAH parameters were identified to not have exceeded Table 2 SCS in all other remaining monitors sampled.

Soil and ground water results are presented in Tables 2 through 10 (Appendix F), and on Figures 8 through 52 (Appendix A).

4.1.4 Drilling and Ground Water Sampling Event – May/ June 2019

Azimuth returned to the RCS Property to complete a subsurface delineation investigation by advancing twenty five (25) soil boreholes, of which twenty four (24) were completed as ground water monitoring wells (Figure 3). For the most part, ground water monitors were positioned and installed in triplicate clusters, where screen depths were installed targeting specific depths. The targeted screen depths of interest were the ground water table, about 2 m below the ground water table within the source impact zone, and about 4 m below the water table which was below source impact zone. These depths were targeted to achieve horizontal and vertical delineation of the detected contaminant zone based upon the past Site investigations. Subsurface soil samples were collected from split-spoon augers at specific depths through the soil profile to identify CoCs associated with the on--Site APECs within the soils. Ground water samples were collected from each of the newly installed ground water monitors to identify CoCs associated with on-Site APECs within the ground water table. Table E presents a list of the soil boreholes

and ground water monitoring wells, their locations, and the rationale for their installation or collection.

As before, throughout the delineation soil drilling program, each soil borehole was advanced using a combination of hollow-stem augers and a split spoon sampling device. Drilling mud was applied during the advancement of the deep boreholes in order to maintain borehole integrity throughout auger advancement into deeper saturated soils. The soil samples were field screened, and selected samples were submitted for laboratory analysis of a range of parameters. Soils at or within the vicinity of the ground water table, or those identified from field screening were primarily submitted for analysis. Ground water monitoring wells were constructed to O.Reg. 903/90 [as amended] Provincial standards. Table F (below) presents the intended sample and analysis plan for the May and June 2019 soil and ground water sampling event.

Table E: Sample Analysis Plan – May/ June 2019

Borehole/ Well Name	Location	Rationale
BH-401 a,b,c/ MW-401 a,b,c	South boundary of RSC Property	Upgradient location to demonstrate southern extent of Site contamination
BH-402 a,b,c/ MW-402 a,b,c	East side of RSC Property	Demonstrate eastern extent of Site contamination between MW205 and MW206
BH-403 a,b,c/ MW-403 a,b,c	East side of RSC Property, south of on-Site structure	Demonstrate eastern extent of Site contamination between MW206 and MW305
BH-404 a,b,c/ MW-404 a,b,c	East side interior of on-Site Structure	Demonstrate eastern extent of Site contamination between MW207 and MW305
BH-405 a,b,c/ MW-405 a,b,c	West side of RSC Property	Demonstrate western extent of Site contamination between MW204 and MW201
BH-406 a,b,c/ MW-406 a,b,c	North side interior of on-Site Structure	Demonstrate northern extent of Site contamination between MW202 and MW207

One (1) exceedance of barium was identified within the soils at BH405a; however, this has been attributed with drilling mud entering the sample, and not truly representative of the soil conditions. No other heavy metal or inorganic exceedances were reported in remaining soil analytical. PHC, including BTEX, VOC, PAH or semi-volatiles (ABN) parameters were found to have not exceeded Table 2 SCS within the soils submitted for each borehole advanced.

Following installation of the ground water monitoring wells, each well was purged to remove at least three well volumes as per Azimuth Standard Operating Procedures (SOPs - Appendix D). Ground water samples were collected from each well and submitted for analysis of a range of parameters associated with their corresponding PCAs. These analyses may include any combination of PHCs + BTEX, VOCs, dissolved metals and inorganic, PAHs, and ABN parameters.

Exceedances of petroleum hydrocarbons, including BTEX, were primarily found within the MW404 and MW406 well clusters. These wells, situated within the on-Site structure, were found to exceed Table 2 SCS for toluene, ethylbezene, xylenes, and PHC fraction F_1 and F_2. Ground water monitor MW403c (outside and south of the on-Site structure) was found to have exceeded Table 2 SCS for ethylbenzene and PHC fraction F_1 and F_2. No other PHC or BTEX exceedances were reported in remaining sampled wells. Ground water well cluster MW404, installed within the on-Site structure, measured exceedances of 1,1,1,2-tetrachloroethane and styrene within the ground water. No other VOC parameters were found to exceed Table 2 SCS in any other ground water monitor. PAH parameters were found to have exceeded at most ground water monitors installed across the RSC Property. Naphthalene, phenanthrene, benzo(a)pyrene, and 2- and 1-methylnaphthalene were found to exceed Table 2 SCS. Exceedances of cobalt were found within the ground water at the MW404 and MW406 nest. These well clusters represent impacts beneath the on-Site structure. No other dissolved metals exceedances were found during this investigation.

Soil and ground water results are presented in Tables 2 through 10 (Appendix F), and on Figures 8 through 52 (Appendix A).

4.1.5 Confirmatory Ground Water Sampling Event – November 2019

Azimuth returned to the RCS Property to complete a confirmatory ground water sampling event for results collected during the October 2018 and May/ June 2019 events. Ground water samples were collected from ground water monitors across the RSC Property to identify CoCs associated with on- and off-Site APECs within the ground water table. Table F presents a list of ground water monitoring wells, their locations, and the rationale for their collection.

Table F: Sample Analysis Plan – November 2019

Well Name	Location	Rationale
MW101	West RSC Property Corner	Demonstrate western limits of off-Site APECs to the west

Table F: Sample Analysis Plan – November 2019

Well Name	Location	Rationale
MW304	Southeast RSC Property Corner	Delineate and provide confirmatory analytical results from October 2018 and May/ June 2019 events, and demonstrate western limits of off-Site APECs to the west
MW305	Northeast RSC Property Corner	Delineate and provide confirmatory analytical results from October 2018 and May/ June 2019 events
MW308	East RSC Property Boundary	Delineate and provide confirmatory analytical results from October 2018 and May/ June 2019 events
MW401 a,b,c	South boundary of RSC Property	Delineate and provide confirmatory analytical results from October 2018 and May/ June 2019 events, and demonstrate western limits of off-Site APECs to the west
MW402 a,b,c	East side of RSC Property	Delineate and provide confirmatory analytical results from October 2018 and May/ June 2019 events
MW403 a,b,c	East side of RSC Property, south of on-Site structure	Delineate and provide confirmatory analytical results from October 2018 and May/ June 2019 events
MW404 a,b,c	East side interior of on-Site Structure	Delineate and provide confirmatory analytical results from October 2018 and May/ June 2019 events
MW405 a	Central RSC Property	Delineate and provide confirmatory analytical results from October 2018 and May/ June 2019 events
MW406 a,b,c	North side interior of on-Site Structure	Delineate and provide confirmatory analytical results from October 2018 and May/ June 2019 events
MW407a,b,c	Northwest RSC Property	Delineate and provide confirmatory analytical results from October 2018 and May/ June 2019 events
MW408	Northwest RSC Property	Delineate and provide confirmatory analytical results from October 2018 and May/ June 2019 events, and demonstrate western limits of off-Site PCAs to the west

Prior to collecting samples from the ground water monitoring wells, each well was purged to remove at least three well volumes as per Azimuth SOPs (Appendix D). Ground water samples were collected from each well and submitted for analysis of a range of parameters associated with their corresponding PCAs. These analyses may include any combination of PHCs + BTEX, VOCs, dissolved metals and inorganics, PAHs, and organo-chlorine pesticide (OCP) parameters.

Exceedances of petroleum hydrocarbons, including BTEX, were primarily found within the MW404 and MW406 well clusters. These wells, situated within the on-Site structure, were found to exceed Table 2 SCS for benzene, toluene, ethylbenzene, xylenes, PHC fraction F_1 and F_2. Ground water monitor MW403c (outside and east of the on-Site structure) was found to have exceeded Table 2 SCS for PHC fraction F_3. No other PHC or BTEX exceedances were reported in remaining sampled wells. Ground water well clusters MW404 and MW406, installed within the on-Site structure, measured exceedances of styrene and hexane within the ground water at its location. No other VOC parameters were found to exceed Table 2 SCS in any other ground water monitor. PAH parameters were found to have exceeded at primarily at the MW404 and MW406 well clusters. PAH exceedances were also reported at the MW407 cluster. Naphthalene, phenanthrene, benzo(a)pyrene, and 2-and 1-methylnaphthalene were found to exceed Table 2 SCS at these locations. No exceedances of dissolved metals or OCPs were found from well sampled during this investigation.

Soil and ground water results are presented in Tables 2 through 10 (Appendix F), and on Figures 8 through 52 (Appendix A).

4.2 Media Investigated

The previous investigation had provided an understanding of the geology at the RSC Property. The overburden deposits were reported to consist of medium/ fine sand with trace silt and gravel transitioning to silty fine grained sand material. The depth to ground water at the RSC Property was at least 1.88 mbgs during the latest ground water sampling event in June 2020. As a result, the scope of the current investigation included both soil and ground water components. The intent of the program was to investigate the overburden deposits to the approximate depth of the surface of the water table, and to a fine grained aquitard contact depth.

Specific details outlining the borehole advancement, associated soil sampling, and monitoring well installations, with subsequent ground water sampling, at the RSC Property can be found in Appendix B, Sampling and Analysis Plan – October 2018,

Sampling and Analysis Plan – May/ June 2019, and Sampling and Analysis Plan – November 2019.

4.3 Conceptual Site Model

The Conceptual Site Model presented in the Phase One ESA Report (Azimuth, 2020) is as follows:

> "… the overburden profile at the RSC Property consists of a medium/ fine grained sand with trace silt and some gravel transitioning to fine grained sand and silt that are regionally extensive. That is, the fine-grained layers vary in thickness and are laterally continuous … The RSC Property is located approximately 360 m southwest of Kempenfelt Bay, and also resides within Hotchkiss Creek subwatershed. The overburden thickness in the immediate vicinity of the RSC Property is reportedly more than 100 m, overlying a limestone and shale bedrock ...".

Information acquired as part of the Phase Two ESA was in general agreement with the Phase One ESA Conceptual Model. Lithological observations across the sample locations were medium and fine sand with trace to some silts and gravel transitioning to silty fine grained sand at depth. These observations are presented in field borehole logs, in Appendix E.

4.4 Deviations from Sampling and Analysis Plan

4.4.1 On-Site Presence/ Absence Test Pit Program – May 2018

No deviations were encountered during the on-Site presence/ absence test pit program in May 2018. This was an exploratory program where test pit locations were chosen based upon the findings of the previous test pit in a progressive investigation sequence. The intent of the program was to find the source location(s) for the previously discovered on-Site contaminants.

4.4.2 Drilling and Ground Water Sampling Event – October 2018

The sampling and analysis plan for the Phase Two ESA – October 2018 event is presented in Appendix B. One deviation from the SAP was noted during the field program. Upon the advancement and installation of borehole BH-309 and MW-309 water monitor, field screening the soils identified impacts at the RSC Property between the two source zones. An additional borehole (BH303) was advanced to the depth of the first aquitard to further delineate the extent of both source zones and their vertical depths. It was determined that this location was not necessary in providing delineation details and was therefore completed as a borehole and not as a ground water monitor. Soil samples

would be collected during the advancement of this hole to provide vertical delineation. The soil samples were collected at the source zone, below the observed ground water table, and to the depth of the fine-grained aquitard.

4.4.3 Drilling and Ground Water Sampling Event – May/ June 2019

The sampling and analysis plan for the Phase Two ESA – May/ June 2019 is presented in Appendix B. Three deviations from the SAP were noted during the May/ June 2019 field program. During the advancement of BH405a, volatile organic measurements were reported in the soil profile. The objective of this location was to determine the horizontal delineation to the west. These measurements concluded that CoCs were still present within the profile at this location. The borehole would be finished and completed as a ground water monitor, with a screen across the ground water table. This location was no longer to be completed in triplicate, and a new triplicate well nest location (BH407a,b,c and MW407a,b,c) would be scheduled for installation further west. The MW407 triplicate nest was installed to the west of the proposed SAP, approximately 10 m further west of MW405a in order to laterally delineate the contaminant source present at the Site.

In addition to this, it was determined that the new placement of the MW407 nest, and the positioning and installation depths of the existing G2S ground water monitors along the north-northeast RSC Property boundary were not sufficient in delineating CoC impacts to the north-northeast. This determination concluded that further horizontal delineation was required to the north-northeast. Therefore, the advancement of BH408 and subsequent installation of MW408 was completed to account for this data gap. All CoC associated with delineating impacts from the MW405 nest were applied to samples collected and submitted for the MW407 nest and the MW408 borehole and monitor.

The third deviation to the May/ June 2019 delineation drilling event was a result of subsurface utilities or infrastructure. The placement of BH/ MW406 nest was to occur within the furthest west room within the on-Site structure. Completion of ground penetrating radar identified subsurface utilities or infrastructure beneath the structures' concrete pad. The placement of these found utilities/ infrastructure and the restriction of space within the chosen room resulted in the re-location of the MW406 nest further to the east in the adjacent room.

4.5 Impediments

No access issues were encountered during the Phase Two ESA field program. Some borehole locations were adjusted slightly to account for the presence of site features (*e.g.* trees, underground utilities). A water service travelling from the southwest structure corner to the east RSC Property boundary workshop was present within the proposed

BH309 location. The location of borehole BH309 was adjusted a further meter south away from the on-Site structure at account for this buried utility.

5.0 INVESTIGATION METHOD

5.1 General

The evaluation of the RSC Property was conducted through a series of sampling programs and subsequent ground water sampling events. Our understanding of the CSM was confirmed through this field investigation program.

The geologic nature of the RSC Property being a conductive media suggested that the detection of significant contamination associated with the past and present uses of the RSC Property should be possible at the selected drilling locations. Investigation of the subsurface profile across the RSC Property limits; especially where historic bulk fuels had existed permitted a reasonable assessment of the Site condition. Residual PHCs + BTEX, select VOCs, select PAHs trapped within the shallow saturated zone could be expected to be encountered. If the contaminant release was sufficiently large; then its dispersion and detection in the ground water should be possible using the proposed "*Sample and Analysis Plans* (SAPs)" (Appendix B).

Ground water flow is toward the northeast and therefore upgradient monitoring locations from off-Site PCAs would be prevalent along the south and west boundary locations. Similarly, three ground water monitoring locations were situated along the southern RSC Property boundary (*i.e.*, cross-gradient boundary), two ground water monitoring locations were situated along the western RSC Property extents to assess for PHC, PAH, VOCs, metals, ABN contaminants associated with off-Site APECs that a significant loss should be readily detectable along this boundary. Collecting ground water analytical from wells along the southern and western boundary of the RSC Property permitted the assessment of off-Site PCAs.

The SOPs for the various components of the Phase Two ESA (as stipulated in O.Reg. 153/04 Schedule E, Part Two, s.3(5)) are presented in Appendix D.

5.2 Test Pitting and Drilling

One test pit and two soil drilling programs were conducted at the RSC Property between May 2018 and June 2019. A private independent operator with a Deere 310SG rubber tire backhoe was hired to complete the test pit program on May 14, 2018. Soil samples were retrieved by the backhoe and collected from the bucket or laid out in piles for evaluation and collection.

Lantech Drilling Services Inc. (Lantech) of Sharon, Ontario was retained to provide the drilling equipment for the October 2018 program and the exterior May 2019 program. The exterior soil boreholes at the RSC Property were advanced using a Mobile Model track mounted CME 75, using 210 mm (nominal) ID hollow stem augers, with 56 mm (nominal) OD stainless steel split spoon sampling devices for collecting soil samples when using the hollow stem augers. Kodiak Drilling (Kodiak) of Oakville, Ontario was retained to provide the drilling equipment for the interior June 2019 event. The interior soil boreholes at the RSC Property were advanced using a mobile track mounted MiniProbe, using 4 foot Dual Tube (DT22) direct push sampling tubes. The soil cores obtained by the split spoon samplers were examined by field staff, logged, and field screened for volatile gases, and representative samples were collected according to the Sampling and Analysis Plans (Appendix B). Figure 3 shows the soil test pits, soil boreholes/ ground water monitoring well locations.

Quality control measures followed during the soil sampling to minimize the potential for cross-contamination included:

- washing and rinsing the split spoon sampling devices after each use;
- using new nitrile gloves during the collection of all soil samples; and
- collecting all soil samples in new, laboratory provided containers.

5.3 Soil: Sampling

For the borehole drilling, soil cores were collected by the use of the split spoon sampling devices. Since the split spoon sampling device also served in effect as the drilling / coring tool, this allowed for logging and collection of the soil profile in regular intervals at each borehole location. Soil samples were collected directly from the individual split spoon or dual tube samplers, according to the methods presented in the soil sampling SOP (Appendix D). Soil was collected by hand, using new nitrile gloves for each split spoon and was immediately transferred from the split spoon into the appropriate sampling container. Samples for field screening measurements were collected in a similar fashion.

The finalized field logs, which are presented in Appendix E, provide a description of the geology encountered at each soil borehole, and indicated the soil sampling frequency.

5.4 Field Screening Measurements

Field screening consisted of a visual and olfactory inspection of the soil profile, as well as testing using a portable gas detector. The gas detector used at the RSC Property for all the soil sampling was a RKI Instruments Eagle organic vapour analyzer (OVA), in

methane elimination mode. The technical details for the RKI Eagle, including gases detected, measuring range and accuracy of the measurements are provided in Appendix E. The OVA was calibrated with a 15% Lower Explosive Limit (LEL) using 1,650 parts per million by volume (ppmv) hexane standard on May 14, 2018, immediately prior to beginning the soil sampling program. The OVA was calibrated with the hexane standard mentioned above on October 23, 2018, May 6, 2019, June 6, 2019, and immediately prior to the beginning of the ensuing ground water sampling program.

The results of the field screening measurements were identified for use as a guide for soil sample selection and laboratory submission. Higher readings on the RKI Eagle suggest the presence of flammable organic vapours, and would indicate potential soil sampling locations. The RKI Eagle does not analyze specific parameter concentrations therefore the relative concentrations between readings formed the basis for comparison. As a rule of thumb, readings above about 50 ppmv on the RKI Eagle instrument are generally taken to be indicative of the potential presence of organic contamination. For the most part OVA readings at the RSC Property ranged between 0 and 6,350 ppmv (Appendix E). With OVA measurements below 50 ppmv throughout the soil column screened, soils in the vicinity of the ground water table were targeted for submission.

5.5 Ground Water: Monitoring Well Installation

The ground water monitoring wells were installed according to the SOP presented in Appendix D, and in accordance with O.Reg. 903/00. All monitoring wells were constructed using new, 51 mm (nominal) or 25 mm (nominal) diameter PVC pipe and screen sections. New nitrile gloves were worn by all field staff during the handling of the PVC and the well installation process. Completion details for the individual wells are presented as part of the borehole logs (Appendix E). No well development was conducted as part of the installation process. Registration of the monitoring wells as part of the MECP database was performed by Orbit and Kodiak. Well locations are presented in Figure 3.

5.6 Ground Water: Field Measurement of Water Quality

Field-measured parameters were collected as part of the ground water sampling process. The field parameters collected included pH, electrical conductivity (EC), and temperature. Prior to collecting field-measured parameters, ground water level measurements, the presence of non-aqueous phase fluids are determined using an electronic multi-phase water level tape. Three times the well volume is purged with field-measured parameters collected during or following the process. Interior wells, installed with 25 mm diameter PVC piping, were sampled using a ”low-flow” sampling

method across the existing well screen. This method was chosen due to the limited supply of ground water within the wells. Field-measured parameters are collected until each parameter has stabilized. Stabilization of parameters indicates new ground water is moving into the well. All field-measured parameters were collected according to the SOP provided in Appendix D.

5.7 Ground Water: Sampling

Ground water samples were collected from existing and newly installed on-Site monitoring wells throughout the October 2018, the May/ June 2019, and the subsequent November 2019 sampling events. Consistent parameters were collected for analysis in order to develop a baseline of results for the RSC Property. Ground water samples were submitted for BTEX, PHC $F_1 – F_4$ fractions, trace metals, VOCs, inorganic parameters, PAHs, ABN, and OCP upon completion of all ground water sampling events.

All ground water samples were collected according the SOP provided in Appendix D.

5.8 Analytical Testing

Soil and ground water samples were submitted to AGAT Laboratories, of Mississauga, Ontario (AGAT), and Caduceon Environmental Laboratories, of Barrie, Ontario (Caduceon) for analysis. AGAT's Mississauga laboratory and each of Caduceon's laboratories are accredited by the Canadian Association of Laboratory Accreditation (CALA). The laboratory analytical reports are presented in Appendix G.

5.9 Residue Management Procedures

Soil cuttings produced during the drilling program and purge water produced by the ground water sampling program were stored in steel drums, and were left at the RSC Property pending receipt of the laboratory analytical results. Management and disposal of the soil cuttings and ground water sampling purge water was the responsibility of the Property Owner.

5.10 Elevation Survey

An elevation survey was completed during the Phase Two ESA investigation. Installation of new monitoring wells are required to have their elevations referenced and reported to the nearest centimetre relative to a geodetic or permanent and recoverable benchmark by a qualified person for RSC submission.

An elevation survey was completed by Rudy Mak Surveying Ltd. on November 28, 2019, where all test pits, boreholes and ground water monitoring wells had their elevations

reported relative to a geodetic benchmark. A copy of the elevation survey can be found in Appendix H.

5.11 Quality Assurance and Quality Control Measures

Azimuth uses numerous quality assurance/quality control (QA/QC) procedures, some of which have been previously discussed. The Sampling and Analysis Plan provide some discussion on the quality control program (Appendix B). An overview of these measures is highlighted below.

5.11.1 Field Evaluation Protocols

Standard operating procedures for aspects of the Phase Two ESA are presented in Appendix D. In brief, the intrusive RSC Property investigation used several quality control measures. The potential contaminants of concern (PCOCs) included PHCs, VOCs, metals, inorganics, PAHs, ABN, and OCP (Table A). Some of these contaminant types are known to volatilize and therefore soil gas screening techniques were used to identify potential contaminant sampling locations.

Visual screening techniques are possible for PHCs. Soil staining is typical for PHC detection in soil profiles. PHC "smear zones" can occur at or near water table locations and provide an indicator for the detection of this feature in the subsurface. As has been mentioned, the development of the CSM was of assistance in targeting contaminant migration pathways. Among the evidence compiled during the field program was the geologic consistency seen across the RSC Property. During the drilling, visual observations of the soil profile confirmed the presence of PHC smearing.

5.11.2 Sample Collection Protocols

All containers for the soil and ground water samples were provided by the laboratories, and were specific to the individual types of analysis required. Sample preservation methods (if any) were followed as specified by each laboratory. All sample containers were labelled by field staff with the date, Azimuth project number, sampler's name, and sample name. Upon collection, each sample was placed in an ice filled cooler for temporary storage prior to delivery to the laboratory. For the field programs, all samples were collected at the RSC Property, stored as indicated above, and transported to the Azimuth office in Barrie, Ontario where they were picked up the following day by courier and delivered to AGAT or the samples were directly transported and submitted to the Caduceon laboratory in Barrie. The laboratories provided chain of custody forms were prepared which documented all the samples and sampling information and provide a record of the sample handling between collection and delivery to the laboratories. The

chain of custody form is included with the analytical testing results (see Appendix G). All equipment cleaning procedures used by Azimuth are presented in Appendix D.

5.11.3.5 Quality Assurance and Quality Control Results

The Certificates of Analysis (CoAs) for all the samples submitted for laboratory analysis are presented in full in Appendix G. All the CoAs comply with Section 47(3) of O.Reg. 153/04. The CoAs provide a list of comments pertaining to each sample submitted for analysis, including where the laboratory qualified any of the analytical results. No qualifications are noted for any of the samples submitted as part of the current program.

As part of the field program, duplicate soil and ground water samples were submitted for each of the analyzed parameters. Each data table summary (Tables 2 – 11) identifies duplicates and their results collected as a part of this evaluation. Analysis of the duplicate soil and ground water samples for each field program was completed and found to be in compliance with contemporary standards for all events.

5.11.3.6 Quality Assurance and Quality Control Summary

Several techniques have been used in evaluating the quality assurance/ quality control (QA/QC) program for the Phase Two ESA. The replication of results over a few different sampling programs has established a level of confidence with the data.

There is good certainty associated with the RSC Property investigation. In that regard, the QA/QC program followed the design of the Sampling and Analysis Plan.

6.0 REVIEW AND EVALUATION

6.1 Geology

The results of the drilling program showed that the stratigraphic profile at the RSC Property remained consistent across the drilling locations. Figures presenting geological cross-sections across the RSC Property are presented in Appendix A.

Overburden was observed throughout each of the boreholes advanced and across the entire RSC Property. Coarse grained sand and gravel was observed overtop medium/ fine grained sands with trace silts were observed throughout the excavated soil columns. Within the on-Site APEC areas, excavated shallow soils had observations and olfactory sensing of PHC impacts.

Based on the nature of the drilling and appearances of the drill cuttings and minor amounts of soil obtained in the split spoon sampling devices, it seemed that the

occurrence of poor soil returns generally coincided with the presence of coarse-grained material (*e.g.* sand, gravel) in the overburden profile.

Bedrock was not observed during the advancement of the borehole program. The bedrock is reportedly composed of black laminated limestone of the Lindsay Formation of the Simcoe Group as identified in the Phase One ESA completed by Azimuth (2020). The inferred bedrock contact is estimated to be approximately 124 m above sea level (asl) or 103 m below ground surface (bgs) at the RSC Property (ORMGP, 2020). A nearby bedrock well (MECP Well #57-00253) was identified approximately 1.5 km north of the RSC Property. The well record reports bedrock contact at 115 masl.

6.2 Ground Water: Elevations and Flow Direction

The primary rationale for the ground water monitoring well locations was to evaluate on-Site APECs, with the secondary purpose of evaluating ground water flow pattern across the RSC Property (*i.e.*, positioning the wells to allow for flow direction triangulation).

The hydraulic information from the various monitoring wells is provided in Table 1. The depth to ground water at the RSC Property ranged from 1.8 to 3.6 mbgs, across four (4) monitoring events. A pressure transducer was installed within a ground water monitor to track seasonal ground water table fluctuations. All water level measurements were collected using a Heron Instruments multi-phase electric water level tape and no free-phase light non-aqueous phase liquid (LNAPL) product was noted on the water surface at any of the monitoring wells. The depth of each monitoring well was confirmed with the electronic tape, and no evidence of free-phase lighter or dense non-aqueous phase liquid (NAPL) was noted at any of the wells.

Figure 7 shows the ground water elevations, from the June 2020 sampling event and the inferred shallow ground water flow direction based on the measured elevations. The inferred ground water table flow direction over the RSC Property at the time of monitoring is to the northeast; toward Kempenfelt Bay. The ground water flow direction is generally consistent with the topographic slope across the RSC Property, which would normally be expected in shallow overburden aquifers. The RSC Property gradually falls from an elevation of 229 masl towards the south end of the parcel, and displays a radial slope towards to the northeast corner 227 masl. The RSC Property is located approximately 185 m south of Hotchkiss Creek, which empties into Lake Simcoe approximately 360 m to the northeast.

As with most ground water systems, it is expected that the ground water elevations at each location would exhibit some degree of seasonal variation.

The historical evaluation of the RSC Property, and through the development of the Site Conceptual Model, it was revealed that the ground water table at the RSC Property was once at a historical depth, different than what is currently observed. Installation of the ground water well network throughout the RSC Property has consistently identified impacts below the water table within fine-grained soils. A series of municipal production wells along the southern portion of Kempenfelt Bay were operated by the City of Barrie for decades before being replaced by the lake intake system. The closest former City of Barrie municipal water well (Well 12), situated at 85 Lakeshore Drive (approximately 500 m northeast from the RSC Property). This well operation ceased use in 2012, with the opening of a surface water supply treatment plant. PHC impacts observed at the RSC Property are consistently found to be a couple of metres below the current water table condition. With this observation, it is hypothesized that at the time of the PHC release (date unknown), the ground water table could have been lower and below the current ground surface.

This stressed interpretation of the ground water table has been assumed to be directly related to the historical use of the former City of Barrie municipal supply well located along Lakeshore Drive. This was confirmed by the evaluation of older City reports which reported a lower measured water table condition when the City relied only on ground water. The local ground water table has rebounded within the vicinity of the former southern municipal well capture zone with the decommissioning of these production wells. It is surmised that the municipal capture zone for these wells included the RSC Property. Rebound to the ground water table submerged the historic impacts to the conditions observed with this evaluation.

6.3 Ground Water: Hydraulic Gradients

The measured lateral hydraulic gradient in the shallow ground water zone ranged from about 0.01 to 0.02 meters per meter (m/m). Most ground water monitoring wells were completed in the shallow (*i.e.* uppermost) ground water bearing zone. Two (2) ground water monitoring wells were completed at the bottom of the uppermost aquifer (i.e., aquitard contact). Using the well network installed at the RSC Property the vertical hydraulic gradient was measured to be 0.06 m/m.

6.4 Coarse-Grained Soil Texture

Based on the drilling results, the overburden deposits at the RSC Property primarily consisted of coarse-grained deposits, with fine-grained material being noted in several locations at depth. The coarse soils were confirmed through grain size analytical testing,

with laboratory results provided in Appendix G. Despite the occurrence of silt and silty material at depth across the RSC Property, it is understood that ground water movement and hence contaminant migration would occur primarily throughout the coarse-grained overburden. As a result, it has been determined that the coarse-grained standards are applicable.

6.5 Soil: Field Screening

The finalized borehole logs, presented in Appendix E, from the exploration drilling program include the field screening results for the selected soil samples. The OVA readings for the samples collected as part of the drilling program were below the rule-of-thumb value of 50 ppmv. Visual and olfactory field screening in this area was in agreement with the OVA results. As noted in Section 5.4, OVA measurements were measured between 0 to 6,350 ppmv throughout the soil column, soils in the vicinity of the ground water table and those in approximation of impacts below the water table were targeted for submission.

Note that the field screening methods used in the current program are intended to detect potential contaminants which have a visual or olfactory component, or would produce a response in an OVA. Soil assessments during the monitoring well installations included visual and olfactory screening for metals or hydrocarbon staining.

6.6 Soil Quality

The results of the laboratory soil quality analyses are presented in the following tabular summaries (Appendix G):

- Table 2 (soil – petroleum hydrocarbons [PHCs + BTEX]);
- Table 3 (soil – volatile organic compounds [VOCs]);
- Table 4 (soil – heavy metals & inorganics); and
- Table 5 (soil – polycyclic aromatic hydrocarbons & semi-volatile acid/ base/ neutral compounds).

All raw laboratory analytical data reports are included in Appendix G. Tables 2 through 5 also indicate the location and depth of all the soil samples. Analytical data collected during the G2S Phase II ESA study (2018) has been compiled and included within the tables generated for this evaluation.

The PHC analytical results for the soil test pit and borehole samples (Table 2) indicate that there are reportable PHC + BTEX concentrations above the Table 2 SCS observed

within the shallow soils concentrated within the central portion of the RSC Property. Soil analytical results reported below Table 2 SCS observed around the boundaries of Site. These results were reported to be below laboratory detection limits. PHC + BTEX parameters were analyzed due to associated on and off-Site PCAs.

The VOC analytical results (Table 3) show that a single soil sample submitted for laboratory analysis had reported concentrations of hexane above the respective Table 2 SCS within the central portion of the RSC Property. All other soil samples submitted for analytical analysis identified soil VOC concentrations below their respective Table 2 SCS and mostly their respective method detection limits. VOC parameters were analyzed due to associated on- and off-Site PCAs.

The heavy metals analytical results (Table 3) show that most of the analyzed samples had heavy metals concentrations below Table 2 SCS. Borehole soil samples collected during the G2S soils investigation, borehole BH101, had a reported exceedance of Hot Water Soluble boron within surface soils within the western portion of the RSC Boundary. In addition, during the delineation drilling program (May/ June 2019), completed by Azimuth, soil borehole BH405a had a reported concentration of barium greater than Table 2 SCS. Electrical conductivity and sodium absorption ratio were reported to have elevated concentration within the shallow soils throughout the RSC Property. These exceedances can be attributed to salting practices on the driveway for the purpose of public safety. Metals and inorganic parameters were collected from soil boreholes due to on- and off-Site associated PCAs.

The PAH and ABN parameter analytical results (Table 5) show that select PAH parameters were present within the shallow soils situated within the central and north (beneath the on-Site structure) portions at the RSC Property. These elevated parameters include naphthalene, acenaphthylene, phenanthrene, anthracene and 2-and 1-methylnaphthalene identified during the G2S and the Azimuth soil investigations. A single ABN parameter was identified during the test pit program; 1,1-biphenyl. This parameter was identified within the central portion of the RSC Property to the rear (west) of the on-Site structure.

Soil pH and grain size samples were collected during the 2019 drilling program to confirm applicable site condition standards. Throughout borehole advancement, samples were submitted for grain size when observations were made in the changes of soil composition. The grain size of the soil was confirmed through the analytical testing and the laboratory testing results are provided in Appendix G. The occurrence of silt and silty material at depth across the RSC Property has been determined that ground water

movement and hence contaminant migration would occur primarily throughout the medium/ coarse – grained sand overburden. As a result, it has been determined that the coarse-grained standards are applicable. The soil pH throughout the RSC Property was reported between 7.6 and 7.9.

6.7 Ground Water Quality

Field-measured parameters collected as part of the ground water sampling program included pH, electrical conductivity (EC), and temperature. The following Table G presents the field-measured parameter data collected during the latest sampling event between November 26 and 28, 2019. Alternatively, if a monitor was not sampled during the latest sampling event the most recent event is provided. All raw laboratory analytical data reports are included in Appendix G. The results of the laboratory ground water quality analyses are presented in the following tabular summaries (Appendix F):

- Table 6 (ground water – petroleum hydrocarbons [PHCs + BTEX]);
- Table 7 (ground water – volatile organic compounds [VOCs]);
- Table 8 (ground water – trace metals & inorganics);
- Table 9 (ground water – polycyclic aromatic hydrocarbons [PAH] & semi-volatile acid/ base/ neutral compounds [ABN]); and
- Table 10 (ground water – organo-chlorine pesticides [OCP]);

Table G: Ground Water Field Measured Parameters[1]

Well	Screening Date	pH (unit less)	EC (mS/cm)	Temperature (^{o}C)
MW101	26-Nov-19	7.9	1,905	8.1
MW105	25-Oct-18	7.3	2,700	12.3
MW202	25-Oct-18	7.3	1,390	11.9
MW203	25-Oct-18	7.3	1,560	13.3
MW205	24-Oct-18	7.7	1,700	12.2
MW304	26-Nov-19	7.9	2,396	9.0
MW305	26-Nov-19	7.7	2,101	9.5
MW308	26-Nov-19	7.9	2,460	9.5
MW401a	27-Nov-19	8.0	2,078	10.1
MW401b	27-Nov-19	8.1	2,060	10.1
MW401c	27-Nov-19	8.0	2,058	10.0
MW402a	27-Nov-19	8.0	2,780	9.7
MW402b	27-Nov-19	7.9	2,990	10.0
MW402c	27-Nov-19	7.9	2,908	10.1
MW403a	27-Nov-19	8.0	1,910	10.1
MW403b	27-Nov-19	8.3	1,890	9.8
MW403c	27-Nov-19	8.2	1,930	9.9

MW404a	26-Nov-19	8.2	2,105	10.7
MW404b	26-Nov-19	8.2	2,080	10.8
MW404c	26-Nov-19	8.2	2,100	11.0
MW405a	26-Nov-19	8.0	1,843	8.7
MW406a	26-Nov-19	8.1	1,690	10.4
MW406b	26-Nov-19	7.9	1,533	10.4
MW406c	26-Nov-19	8.1	1,708	10.6
MW407a	27-Nov-19	8.0	2,795	8.7
MW407b	27-Nov-19	7.9	2,815	8.6
MW407c	27-Nov-19	8.2	2,800	8.6
MW408	26-Nov-19	8.2	1,875	8.7

Notes: [1] – values rounded to presentation purposes

The range in each of the ground water field-measured parameters was relatively small, and both electrical conductivity (EC) and pH values appear to be suggestive of ground water impacts. These measurements identify an elevated EC observed in every well across the RSC Property. It was speculated that the influence of the road salting activities is evident, albeit not above Provincial standards. Measurements of pH identify more basic water is present within the central and northern portions of the RSC Property. The ground water temperatures were consistent with that expected of a shallow ground water table.

The PHC analytical results for the ground water samples (Table 6) were collected during events initiated by G2S and Azimuth investigations, completed in February, March and October 2018, and May/ June and November 2019. Ground water results have reported exceedances of BTEX, and PHC F_1, F_2, and F_3 were observed in ground water monitors throughout the RSC Property. Specifically, ground water monitor situated within the central, north and east portions of the Site had these reported exceedances. The installation of the ground water monitor network has identified PHC and BTEX impacts at and below ground water table, up to a depth of 4.0 mbgs (*i.e.,* former depth of stressed water table condition). Ground water monitors to the west and south had reportable PHC concentrations below the Table 2 SCS or were reported below laboratory detection limits.

The VOC analytical results (Table 7) show that most of the ground water samples submitted for laboratory analysis had ground water VOC concentrations below their respective Table 2 SCS and their respective method detection limits. Upon the completion of the ground water network, ground water results for wells within the on-Site structure identified exceedances of VOCs; however, these results are inferred to reflect contaminants sorbed to soils that were entrained in the ground water sample. With the exception of the ground water results from the wells beneath the on-Site structure (MW404a,b,c & MW406a,b,c well nests), the remainder of the results where exceedances

were present now reported below laboratory detection limits upon the completion of the November 2019 confirmatory sampling event. Ground water VOC exceedances were still present upon the completion of the November 2019 confirmatory sampling event within the MW404 and MW406 well clusters. These results were considered to be due to the turbid nature of the water samples collected.

The trace metal analytical results (Table 8) show that cobalt was present beneath the on-Site structure in concentrations above Table 2 SCS. Ground water analyzed from monitors MW404a, MW404c, and MW406a had reported cobalt concentrations between 4.3 – 5.2 µg/L. The confirmatory sampling showed the cobalt exceedance reported during the initial sampling was not a true representation of the ground water quality around these monitors. Once again, the water turbidity could be influencing these results. The second reported results show ground water concentrations of cobalt now range from below laboratory detection limits to 1.6 µg/L. All other trace metal results were reported below Table 2 SCS.

The PAH analytical results (Table 9) show that numerous PAH parameters are present within the ground water at the RSC Property. Samples submitted for laboratory analysis had ground water PAH concentrations of naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benz(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, and 2-and 1-methylnaphthalene reported in ground water monitors within the central and northern portions of the Site. The confirmatory ground water sampling event aided in determining which of these parameters are actually within the ground water when compared to those sorbed to the soils. Numerous parameter results moved from presence/ exceedance to presence/ absence at select locations. Wells situated to the west and south had results that were reported below respective method detection limits.

The organo-chlorine pesticide analytical results (Table 10) show that the ground water samples were reported at below the laboratory detection limits throughout the RSC Property.

6.8 Phase Two Conceptual Site Model

The Phase One RSC evaluation completed by Azimuth (2020) identified the following on-Site APECs at the RSC Property:

- Commercial Auto Body Shop;
- Gasoline and Associated Products Storage in Fixed Tanks; and

- Historic Fire Event involving a fuel AST.

The RSC Property was obtained by the current owner in 1966, yet transferred to a new business name in 2015. Previously the RSC Property has been owned by 21 other owners prior to the initial Crown's transfer to the Helinke family in 1823. During this time, the RSC Property had been utilized for residential and commercial purposes. The RSC Property is currently vacant with one abandoned, rectangular shaped on-Site structure. The surficial geology at the RSC Property has been found to primarily consist of medium to fine grained sands, with trace gravels and silts. Bedrock was not encountered during the subsurface programs, yet review of a nearby bedrock well (MECP Well #57-00253; ~1.5 km north) the bedrock is reportedly 115 masl. Developed through the Phase Two ESA subsurface investigation and delineation programs, a geologic understanding has been formed. Geologic interpretation is presented in cross-sections of the RSC Property on Figures 8 through 52 (Appendix A).

During the investigation, the depth to ground water has been measured to be at its shallowest measuring 1.8 mbgs, during the April 2019 ground water sampling event. The lateral ground water flow direction is to the north-northeast (NNE), which is consistent with the directional flow towards Kempenfelt Bay The lateral hydraulic gradient across the RSC Property in the shallow ground water flow zone ranges from about 0.01 to 0.02 m/m (*i.e.*, ~5 m/a). At this flow rate it would take more than a decade for any contaminants to pass through the RSC Property. The vertical hydraulic gradient at the RSC Property within the shallow ground water zone is 0.06 m/m.

The RSC Property has been used for many businesses throughout its history. Historical businesses and activities that present an environmental concern towards the RSC Property include a historic autobody shop, a buried furnace oil tank used for building heating, a fuel service station with AST, and a historical fire event associated with the former fuel AST. Potential PHC, VOC, inorganic, heavy and dissolved metals, or PAH releases from these historical activities into the soil and ground water over time presents a potential environmental concern.

The first use of the RSC Property was for residential purposes. A residential house was constructed at 43 Essa Road, some point after 1904, where former occupants were observed to reside or own at the property up until 1962. At some point between 1950 and 1952, a commercial storage building was constructed within the southwest boundary limits and was used by a cartage and storage business. The use of the RSC Property evolved from residential to mixed use with commercial at this point in time. The location

of the fuel storage tank is not specifically known, but has been interpreted to be situated centrally at the RSC Property based on the soil and ground water sampling results. This is where a concrete pad can be currently observed. The current on-Site structure, situated at 41 Essa Road, was constructed between 1961 and 1963. Since this time, this structure has been used to support banquet and catering services, grocery stores, night club/ lounge, autobody shop and collision repair, and a car rental company. This building was heated using furnace oil, where an UST was observed to be at the structure's rear (west-side). Impacts associated with the historical activities were identified through a historical records review, and subsurface investigations completed at the RSC Property. The current Owner obtained title of the RSC Property in 1966, where the residential house was occupied by a renter, and the remainder of the RSC Property (43 Essa Rd.) was used as a car rental business, and a grocery store (41 Essa Rd.). Residential tenants ceased using the RSC Property when the residential house was demolished at some point in 1982. Reportedly, at some point during the presence of the former fuel AST, a fire occurred at the RSC Property. This fire reportedly involved the former fuel AST, and is speculated to be associated with the majority of the contaminants of concern (CoCs). The initial ESA, completed by G2S, identified impacts within the central portion of the RSC Property, to the rear (west) of the on-Site structure, and beneath the on-Site structure. A ground water well network was installed to delineate the impacts associated with areas.

Review of historical records identified 35 Essa Road to have been occupied formerly by Londry Motors and Used Cars, although this reference is suspect given the City directory citations two years before and two years after this occurrence report a different property use. The on-Site structure was also observed to have had fill and vent pipes from a UST along the west side of the on-Site structure. These activities from former businesses are associated with PCAs attributed to commercial autobody shop, and presence of fuel storage tanks. The existing, and recently installed ground water well network, along the north RSC Property boundary, did not identify PHC within the shallow ground water associated with this APEC.

The 259 – 273 Innisfil Street property has historically been referred to as the Innisfil Street Co-op Store since it is the former Simcoe District Co-Operative depot. The site evaluation work has current and historical businesses which are associated with the following PCAs: rail tracks and spurs, fertilizer bulk storage, pesticide bulk storage, and several noted releases to the ground surface. Historical records have identified a CNR rail line and spur extending along the north property boundary, and multiple records noting bulk fertilizer storage, bulk pesticide storage, and releases to ground surface of urea and furnace oil. Currently, the parcel is occupied by Get Moore Auto Service Inc.

and TSC Stores, which are known to carry bulk fertilizer and pesticide products. The existing, and recently installed ground water well network, along the west and northwest RSC Property boundary, did not identify impacts within the shallow soils or ground water associated with these APECs. Several site investigations undertaken on these adjacent lands have also not shown significant site contamination moving toward the RSC Property.

Review of historical records identified a former oil shed and UST situated at 34 Essa Road. The recently installed ground water well network, along the east RSC Property boundary, identified PHC F_3 in exceedance of the Table 2 SCS within the shallow ground water. This impact to the RSC Property has been presumed to have originated from a historical off-Site activity such as that conducted at 34 Essa Road.

Review of historical records identified a former oil storage building situated at 40 Essa Road (formerly 37 Essa Road). The recently installed ground water well network, along the east RSC Property boundary, identified PHC F_3 in exceedance of the Table 2 SCS within the shallow ground water. This impact to the RSC Property has been presumed to have originated from a historical off-Site activity such as that conducted at 40 Essa Road.

Review of historical records identified a commercial autobody shop in addition with gasoline and associated products stored in fixed tanks were identified at 48 Essa Road (formerly 46 Essa Road). Records from 1931 to 1963 label the property as Garage & Auto Repairs; Pither Garage, Jenkin's Garage, and Hunter JT Garage, with USTs identified on the road adjacent to the property. The existing, and recently installed ground water well network, along the east RSC Property boundary, identified PHC F_3 in exceedance of the Table 2 SCS within the shallow ground water. This impact to the RSC Property has been presumed to have originated from a historical off-Site activity such as that conducted at 48 Essa Road.

Review of historical records for 49 Essa Road identified Allandale Lumber, Fuel & Construction Co. Ltd. as a former business. This business formerly held two (2) fuel oil ASTs and bulk storage of treated lumber, which are attributed to gasoline and associated products storage in fixed tanks and bulk storage of treated and preserved wood products. The existing, and recently installed ground water well network, along the south RSC Property boundary, did not identify impacts within the shallow ground water associated with this APEC.

A Canadian National Rail line currently resides north of the RSC Property, and has been active since 1907. The existing, and recently installed ground water well network, along

the west RSC Property boundary, did not identify impacts within the shallow ground water associated with this APEC.

Historical records identified a former dry cleaning business at the 5 Gowan Street (formerly 45 Gowan Street). The recently installed deep ground water well (MW305) at the northeast RSC Property boundary, did not identify impacts associated with this APEC, within the deep ground water.

A fuel service station (Esso) currently resides at 62 & 64 Essa Road. Review of historical records have identified historical fuel service station and former commercial autobody shop once also resided at this location. Records identify a gasoline service station with three USTs located along the south side of the property, and an auto service business with one UST located at the centre of the property. Fitzpatrick's Service Centre, McBride's Gulf Service Station, Giles Service Station, Mustard R. Service Station and Edge Hazen Service Station were once former businesses at this property. One (1) record noting 50 L of gasoline released to the ground surface was also identified to have occurred at the property. The recently installed southeast ground water well (MW304) did not identify impacts within the shallow ground water associated with these APECs.

A historical records review has identified 81 Essa Road to be formerly occupied by B&K Auto, Auto Service, Huronia Ford, Pierre Motors, and currently Peacock Auto Service Ltd. One (1) record for fuel storage was also identified for this property. These businesses are attributed to commercial autobody repairs and fuel storage. The existing, and recently installed ground water well network, along the south RSC Property boundary, did not identify impacts within the shallow ground water associated with these APECs.

The historical businesses: Mike's Service Centre, Cunnington's Texco Service and Texco have been identified, through an environmental records review at the 91 Essa Road (also 305 Innisfil Street) parcel. These businesses are associated with fuel and waste oil storage and commercial autobody shops. The existing, and recently installed ground water well network, along the south RSC Property boundary, did not identify impacts within the shallow ground water associated with this APEC.

The property situated at 44 Gowan Street was identified as Chinese Laundry in historical records. This business indicates the operation of dry cleaning equipment and is an APEC towards the RSC Property. The recently installed deep ground water well (MW305) at the northeast RSC Property boundary, did not identify impacts associated with this APEC, within the deep ground water.

The results of the Phase Two ESA program indicate that there are two distinct soil and shallow impacted locations across the RSC property that would be of an environmental concern. The completion of a risk assessment (RA) is recommended to address the contaminant of concern.

It is not anticipated that climatic or meteorological events or variations would have significant effect on the distribution or fate of the various contaminants noted at the RSC Property, beyond possible minor dissolution and movement of soluble species as a result of infiltration of surface water and/or precipitation.

7.0 CONCLUSIONS

The Phase One ESA identified a total of twenty seven (27) APECs associated with the RSC Property, and current or former businesses within the surrounding land uses. Each of these will be discussed in turn.

Shallow soil and ground water sampling at the rear (west) of the on-Site structure, in the location of the reported furnace oil AST and former autobody shop detected evidence of soil and ground water contamination (APEC No.: 1 and 2). Numerous initial and confirmatory samples were collected and detected PHC, BTEX and PAH impacts. These impacts are found below the current ground water table, and are found at the historical ground water table elevation. These detections suggest the completion of a RA for PHC, BTEX and PAH parameters are required to obtain a Record of Site Condition for the RSC Property.

Shallow soils and ground water samples were collected at a central location, to the west of a concrete pad currently observed (APEC No.: 3 and 4). A well network was installed with existing wells, around the perimeter of this area. Samples were submitted for PHCs, VOCs, metals, and PAHs, where several parameters were detected above the SCS. Confirmatory samples detected evidence of PHC, BTEX, hexane, and PAH impacts above SCS and are present at the RSC Property. These impacts are present below the current ground water table elevation and suggest that a RA is required to obtain a Record of Site Condition for the RSC Property.

Historical analytical and confirmatory shallow ground water sampling were used to identify if impacts associated with past autobody shops and fuel storage impact at the RSC Property from the directly adjacent 35 Essa Road parcel (APEC No.: 5 and 6). Sample results did not detect any evidence of PHC, VOCs and dissolved metal impacts. No further investigation is deemed necessary.

Shallow ground water samples were collected to identify if impacts associated with rail tracks, bulk fertilizer and pesticide storage, and past releases to ground surface of urea and furnace oil at the 259 – 273 Innisfil Street property (APEC No.: 7 to 11) have affect the RSC Property. The confirmatory samples did not detect any evidence of contaminant impacts associated with any of these APECs. No further investigation is deemed necessary.

Shallow soil and ground water samples were collected from soil boreholes and ground water monitors along the east RSC Property boundary to determine if a historical oil shed at 34 Essa Rd (APEC No.: 12) has impacted the RSC Property. Confirmatory samples detected evidence of PHC impacts potentially associated with this APEC. This impact suggests that a RA is required to obtain a Record of Site Condition for the RSC Property.

Shallow soil and ground water samples were collected from soil bore holes and ground water monitors installed along the southeast RSC Property boundary to determine if a historical UST at 40 Essa Rd (APEC No.: 13) has impacted the RSC Property. Confirmatory samples detected evidence of PHC impacts potentially associated with this APEC. This impact suggests that a RA is required to obtain a Record of Site Condition for the RSC Property.

Shallow soil and ground water samples were collected from soil bore holes and ground water monitors installed along the south and east RSC Property boundaries to determine if a historical fuel service station with USTs and former autobody shop at 48 Essa Rd (formerly 46 Essa Rd) (APEC No.: 14 and 15) has impacted the RSC Property. Confirmatory samples did not detected evidence of PHC, VOC or dissolved metals impacts potentially associated with this APEC. No further investigation is deemed necessary.

Shallow soil and ground water samples were collected from soil bore holes and ground water monitors installed along the south RSC Property boundary to determine if historical fuel ASTs and bulk treated wood storage at 49 Essa Rd (APEC No.: 16 and 17) has impacted the RSC Property. Confirmatory samples did not detected evidence of PHC, OCP or dissolved metal impacts potentially associated with this APEC. No further investigation is deemed necessary.

Shallow ground water samples were collected from ground water monitors installed along the south RSC Property boundary to determine if the aged CNR rail line, along the north property boundary (no address) (APEC No.: 18) has impacted the RSC Property.

Confirmatory samples did not detected evidence of PHC, PAH or dissolved metal impacts potentially associated with this APEC. No further investigation is deemed necessary.

Deep soil and ground water samples were collected from the deep ground water well within the northeast RSC Property corner, to determine if deep ground water impacts were present from a historical dry cleaner, formerly at 5 Gowan Street (45 Gowan St) (APEC No.: 19). Initial and supplemental analytical results did not detect evidence of VOC impacts associated with the APEC. No further investigation is deemed necessary.

Shallow soil and ground water samples were collected from soil bore holes and ground water monitors installed along the south and east RSC Property boundaries to determine if a current and historical fuel service stations with USTs and former autobody shop and gasoline spill at 62 & 64 Essa Rd (APEC No.: 20 to 22) has impacted the RSC Property. Confirmatory samples did not detected evidence of PHC, VOC or dissolved metals impacts potentially associated with this APEC. No further investigation is deemed necessary.

Shallow soil and ground water samples were collected from soil bore holes and ground water monitors installed along the south RSC Property boundary to determine if historical autobody shops with fuel storage at 81 Essa Road (APEC No.: 23 and 24) has impacted the RSC Property. Confirmatory samples did not detected evidence of PHC, VOC or dissolved metals impacts potentially associated with this APEC. No further investigation is deemed necessary.

Shallow soil and ground water samples were collected from soil bore holes and ground water monitors installed along the south RSC Property boundary to determine if historical autobody shops with fuel and waste oil storage at 91 Essa Road (also 305 Innisfil Street) (APEC No.: 25 and 26) has impacted the RSC Property. Confirmatory samples did not detected evidence of PHC, VOC or dissolved metals impacts potentially associated with this APEC. No further investigation is deemed necessary.

Deep soil and ground water samples were collected from the deep ground water well within the northeast RSC Property corner, to determine if deep ground water impacts were present from a historical dry cleaner, formerly at 5 Gowan Street (45 Gowan St) (APEC No.: 27). Initial and supplemental analytical results did not detect evidence of VOC impacts associated with the APEC. No further investigation is deemed necessary.

Field screening data and soil and ground water analytical results indicated that three (3) environmentally impacted locations were measured at the RSC Property. The first identified area is situated beneath and to the rear (west) of the on-Site structure. PHC, VOC, PAH and metal parameters have been measured above the Table 2 SCS and appear to be associated with the impact. A ground water well network was installed to delineate the source and extents of these associated impacts.

The other notable impact location is situated within the central portion of the RSC Property, west of a currently observed concrete pad (43 Essa Rd parcel). Shallow soil and ground water samples collected within the vicinity of this location have identified PHC, VOC, PAH parameters, greater than Table 2 SCS, associated with this location.

Thirdly, detections of PHCs are present in ground water monitoring well along the east RSC Property boundary. It is undetermined if these impacts are associated with the historical oil shed at 34 Essa Rd, and/or the fuel UST at 40 Essa Road. All other soil and ground water samples collected during the Phase Two RSC ESA revealed no environmental impacts.

The detections of the multiple parameters found above Table 2 SCS at the RSC Property suggest a RA is required to obtain a Record of Site Condition for the RSC Property.

7.1 Signatures

The signature and statements required as part of O.Reg. 153/04, Schedule E, Table 1, are provided in the transmittal letter at the front of this report.

8.0 REFERENCES

Azimuth Environmental Consulting, Inc., 2020

Phase One Record of Site Condition Environmental Site Assessment – 41 & 43 Essa Road, Barrie, ON. Prepared for Barrie Drive-A-Car (1979) Limited, June 2020.

Ministry of the Environment, 2011a

Ontario Regulation 153/04 - Records of Site Condition – Part XV.1 of the Act July 1, 2011 and last amended July 28, 2017

Ministry of the Environment, 2011b

Soil, Ground water and Sediment Standards for Use Under Part XV.1 of the *Environmental Protection Act*
April 15, 2011 and last amended July 28, 2016.

Oak Ridges Moraine Ground Water Program, 2019.

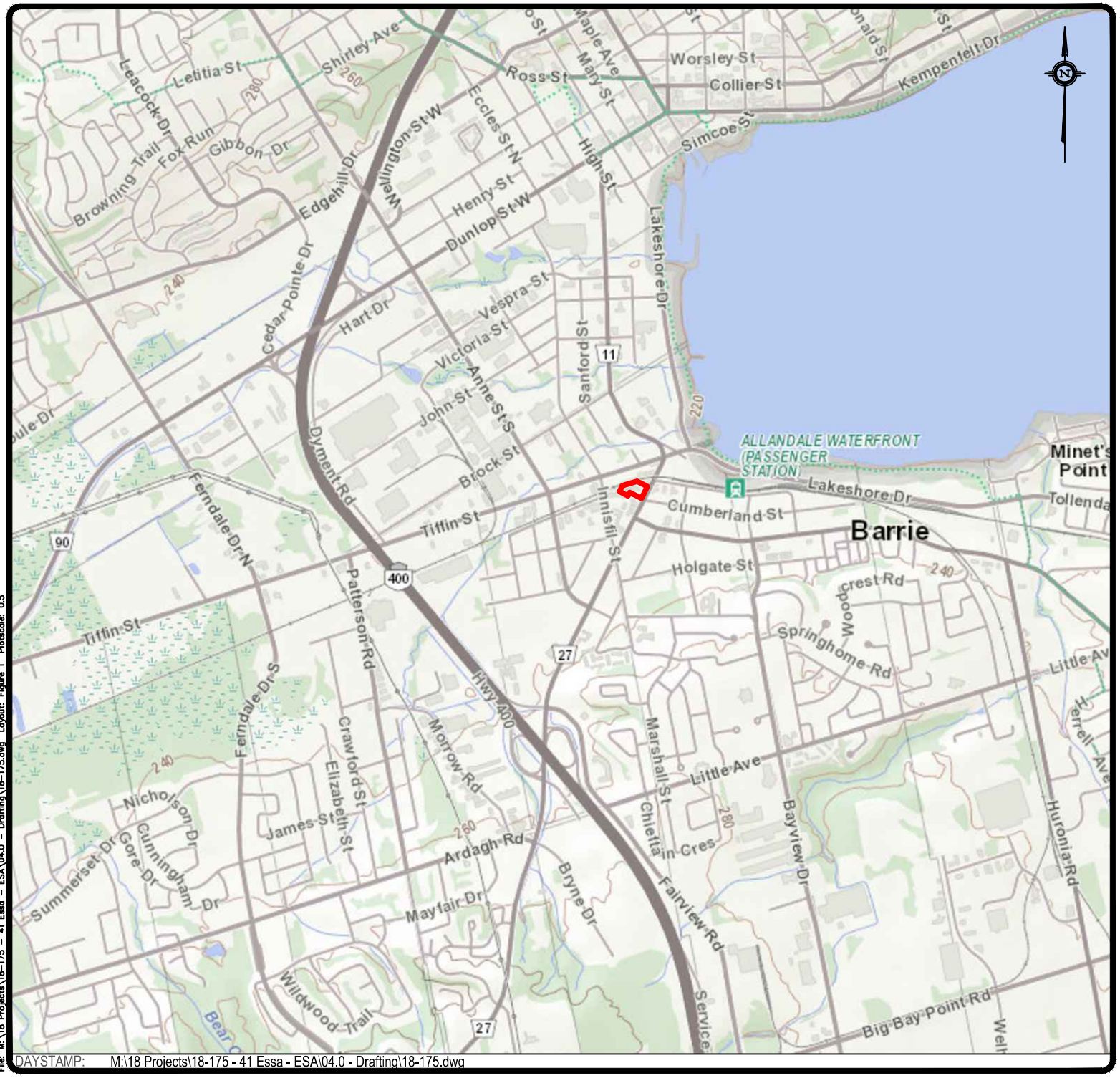
Water well mapping, https://www.oakridgeswater.ca/.

APPENDICES

Appendix A:	**Figures**
Appendix B:	**Sampling and Analysis Plans**
Appendix C:	**Historical Environmental Reports**
Appendix D:	**Standard Operating Procedures**
Appendix E:	**Finalized Field Logs and Field Equipment Information**
Appendix F:	**Analytical Tables**
Appendix G:	**Laboratory Analytical Reports**
Appendix H:	**Site Elevation Survey**
Appendix I:	**City of Barrie Municipal As-Builts**

APPENDIX A

Figures



LEGEND:

Approx. Property Boundary



REG MAP

250m 0 750m

HORIZONTAL SCALE 1: 25,000

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Study Area Location

41 & 43 Essa Rd.,
Barrie, ON

DATE ISSUED: *May 2018*	Figure No.
CREATED BY: *JLM*	
PROJECT NO.: *18-175*	1
REFERENCE: *MNRF*	

DAYSTAMP: M:\18 Projects\18-175 - 41 Essa - ESA\04.0 - Drafting\18-175.dwg

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DAYSTAMP: M:\18 Projects\18-175 - 41 Essa - ESA\04.0 - Drafting\18-175.dwg

LEGEND:

- *Approx. Property Boundary*
- *250m Study Area*

25m 0 75m

HORIZONTAL SCALE 1:2,500

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Study Area

41 & 43 Essa Rd.,
Barrie, ON

DATE ISSUED:	*June 2020*	Figure No.
CREATED BY:	*JLM*	2
PROJECT NO.:	*18-175*	
REFERENCE:	*Simcoe County Maps*	

Plotted by: JMCCARTNEY on August 10, 2020 at 9:06am
File: C:\Users\jmccartney\AppData\Local\Temp\AcPublish_6756\18-175.dwg Layout: PH#2 Plotscale: 0.5



LEGEND:

- *Approx. Property Boundary*
- *Borehole Locations*
- *Well Locations*
- *Test Pit Locations*
- *G2S Borehole & Monitoring Well Locations*

5m 0 15m

HORIZONTAL SCALE 1:500

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

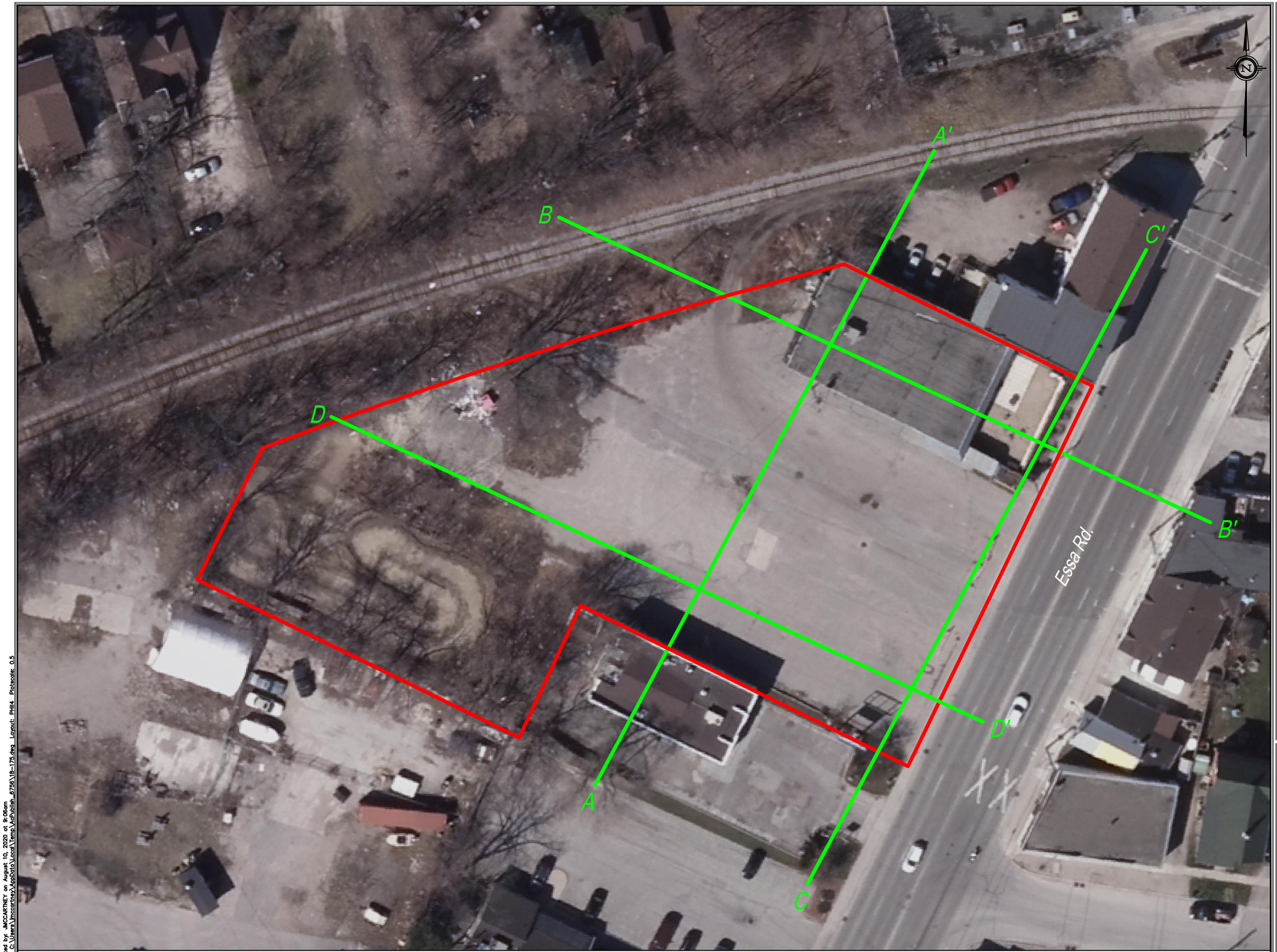
Site Plan with Test Pit, Borehole and Ground Water Monitor Locations

41 & 43 Essa Rd.,
Barrie, ON

DATE ISSUED:	*June 2020*	Figure No. 3
CREATED BY:	*JLM*	
PROJECT NO.:	*18-175*	
REFERENCE:	*Simcoe County Maps*	

DAYSTAMP: M:\18 Projects\18-175 - 41 Essa - ESA\04.0 - Drafting\18-175.dwg

Plotted by: JMCCARTNEY on August 10, 2020 at 9:06am
File: C:\Users\jmccartney\AppData\Local\Temp\AcPublish_6756\18-175.dwg Layout: PHI3 Plotscale: 0.5



LEGEND:

- *Approx. Property Boundary*
- *Cross-Section Locations*

5m 0 15m

HORIZONTAL SCALE 1:500

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

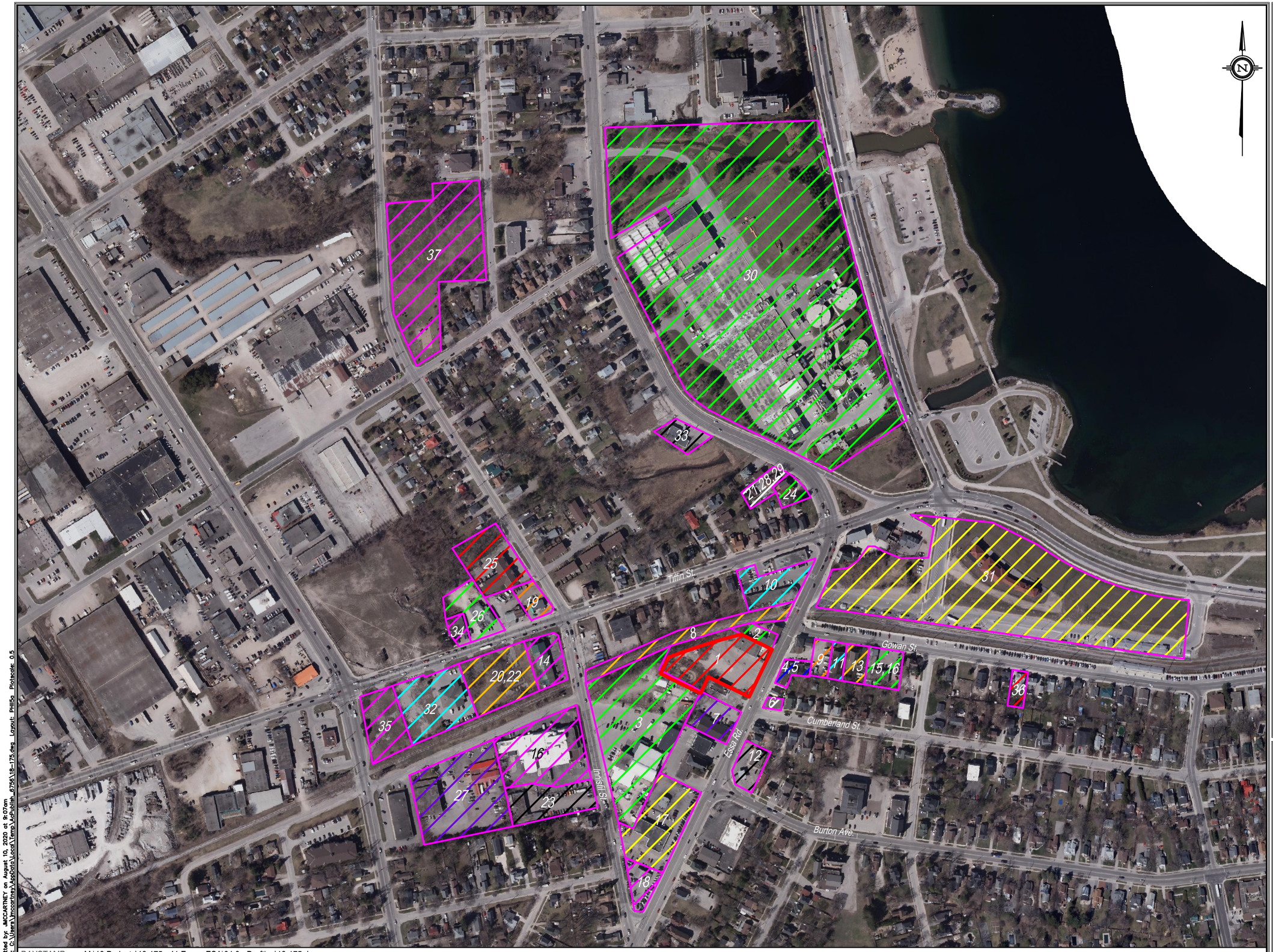
Site Plan with Cross Sections

41 & 43 Essa Rd.,
Barrie, ON

DATE ISSUED:	*June 2020*	Figure No. 4
CREATED BY:	*JLM*	
PROJECT NO.:	*18-175*	
REFERENCE:	*Simcoe County Maps*	

DAYSTAMP: M:\18 Projects\18-175 - 41 Essa - ESA\04.0 - Drafting\18-175.dwg

Plotted by: JMCCARTNEY on August 10, 2020 at 9:06am
File: C:\Users\jmccartney\AppData\Local\Temp\AcPublish_6756\18-175.dwg Layout: PH#4 Plotscale: 0.5



LEGEND:

- *Approx. Property Boundary*
- *Potentially Contaminating Activities*
  (See Figure 5b for details)

60m 0 120m

HORIZONTAL SCALE 1: 4,000

DAYSTAMP: M:\18 Projects\18-175 - 41 Essa - ESA\04.0 - Drafting\18-175.dwg

Plotted by: JMCCARTNEY on August 10, 2020 at 9:07am
File: C:\Users\Jmccartney\AppData\Local\Temp\AcPublish_6756\18-175.dwg Layout: Phil8.5 Plotscale: 0.5

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Potential Contaminating Activities

41 & 43 Essa Rd.,
Barrie, ON

DATE ISSUED:	*June 2020*	Figure No.
CREATED BY:	*JLM*	5a
PROJECT NO.:	*18-175*	
REFERENCE:	*Simcoe County Maps*	

PCA Location Number	Address	PCA(s)
1	41 & 43 Essa Rd	Former Auto Repair Shop Former Furnace Oil UST Former Fuel Service Station with Tank Historical Fuel Tank Fire
2	35 Essa Rd	Former Auto Repair Shop Former UST
3	259-273 Innisfil St	Former Fuel Storage Tanks Current Auto Repair Shop Former Fuel Trucking Operation Former Bulk Fertilizer Storage Former Bulk Pesticide Storage Former Release of Furnace Oil Former Release of Diesel (x2) Former Release of Urea (x2) Transformer Former Automotive Lubricants Storage
4	34 Essa Rd	Former Oil Shed & UST
5	40 Essa Rd	Former Oil Shed
6	48 Essa Rd	Former Auto Repair Shop Former USTs
7	49 Essa Rd	Former ASTs Former Bulk Treated Lumber Storage
8	No Address (CNR Rail Line)	Operating Rail Tracks
9	5 Gowan St	Former Dry Cleaner
10	21 Essa Rd	Former Auto Repair Shop
11	9 Gowan St	Former Auto Wreckers Former Oil Rust Control Former Metal Fabricator Former Auto Repair Shops
12	62 & 64 Essa Rd	Current and Former Fuel Tanks Former Auto Repair Shop Former Release of Gasoline
13	13 Gowan St	Former Auto Repair Shop
14	250 Innisfil St	Former Bulk Fertilizer Storage Former Oil Warehouse Current Dry Cleaner
15	17 Gowan St	Former Auto Repair Shop Former UST
16	272 Innisfil St	Former AST Former Preserved Wood and Treated Lumber Storage Former Dry Cleaner Former Metal Fabricator
17	81 Essa Rd	Current and Former Auto Repair Shop Current and Former Fuel Tanks
18	91 Essa Rd (305 Innisfil St.)	Former Auto Repair Shop Former Fuel and Waste Oil Storage Tanks
19	84 Tiffin St	Current and Former Auto Repair Shops Former UST
20	91 Tiffin St	Former Fuel Trucking Operation Former Fuel Tanks and Oil Warehouse
21	252-254 Bradford St.	Former USTs
22	89 Tiffin St	Former Fuel Storage
23	280 Innisfil St	Former Truck Repair and Storage Yard Current Auto Repair Shop Former USTs
24	278 Bradford St	Former UST
25	230 Innisfil St	Former Dry Cleaner
26	94 Tiffin St	Former Auto Repair Shops Bulk Paint Storage Former Fuel Tanks
27	17 Jacobs Terrace	Former Auto Repair Shop
28	232 Bradford St	Former Auto Repair Shop
29	235 Bradford St	Former USTs
30	249 Bradford St	Wastewater Treatment Facility
31	285 Bradford St	Former Railcar Repair
32	113 Tiffin St	Former Block Manufacture Former USTs
33	224 Bradford St	Former Auto Repair Shop Former USTs
34	100 Tiffin St	Former Auto Repair Shops Former Fuel Oil Storage
35	123 Tiffin St	Former Fuel Storage Tanks Former Fuel Trucking Operation Former Release of VOCs Former Releases of Gasoline
36	44 Gowan St	Former Laundromat
37	No Address (Innisfil St)	Former Municipal Landfills

LEGEND:

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

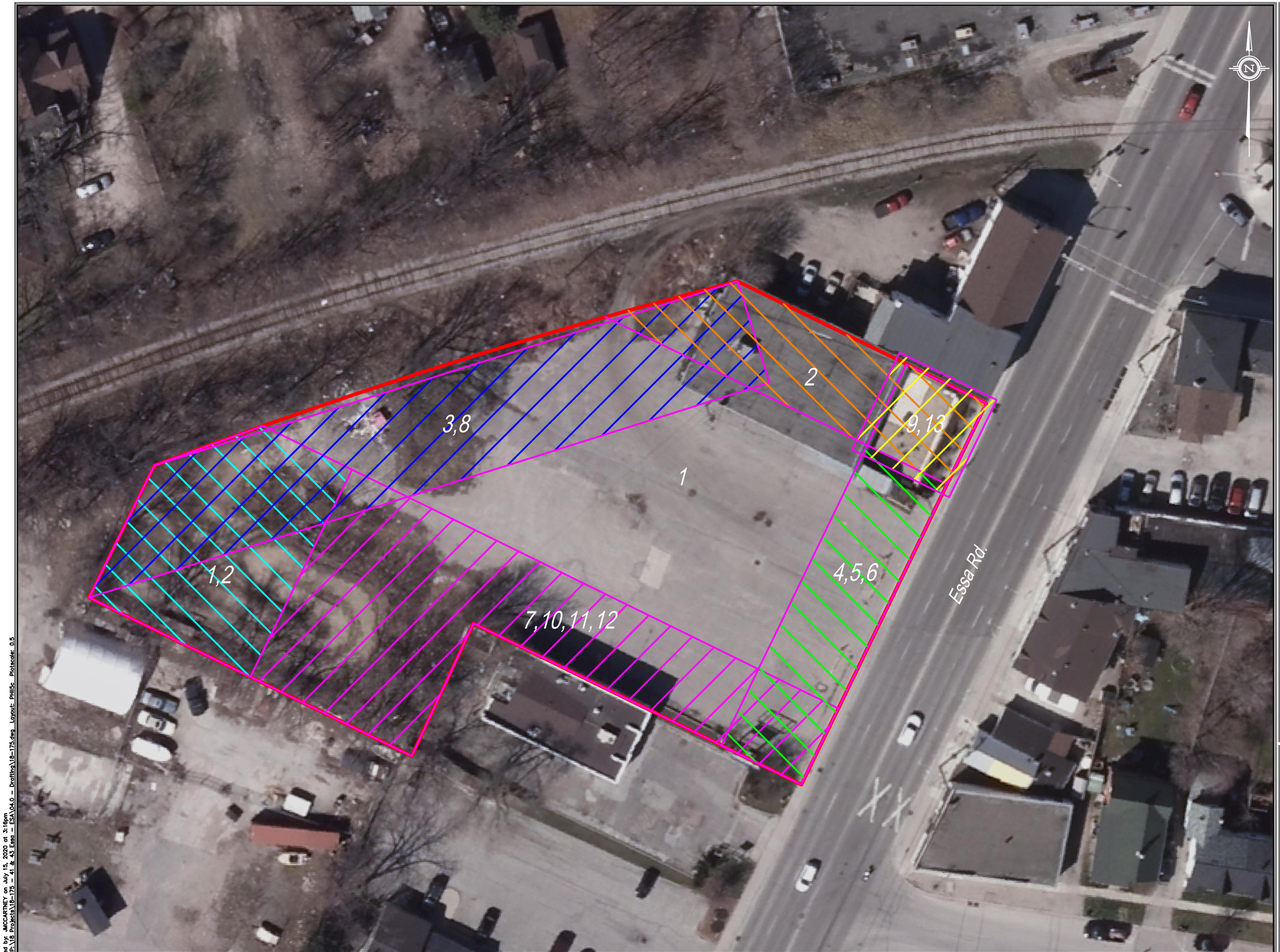
Potential Contaminating Activities

41 & 43 Essa Rd.,
Barrie, ON

DATE ISSUED:	June 2020	Figure No. 5b
CREATED BY:	JLM	
PROJECT NO.:	18-175	
REFERENCE:		

DAYSTAMP: M:\18 Projects\18-175 - 41 Essa - ESA\04.0 - Drafting\18-175.dwg

Plotted by: JMCCARTNEY on August 10, 2020 at 9:07am
File: C:\Users\jmccartney\AppData\Local\Temp\AcPublish_6756\18-175.dwg Layout: PH#5b Plotscale: 0.5



LEGEND:

- Approx. Property Boundary
- Areas of Potentially Contaminating Activities

1 Former Autobody Shop
Former Fuel Storage Tanks
Former Treated Wood Bulk Storage

2 Former Autobody Shop
Former Fuel Storage Tanks

3 Current Rail Tracks
Former Bulk Fertilizer Storage
Former Bulk Pesticide Storage
Historical Releases of Urea & Furnace Oil

4 Former Oil Storage Tanks

5 Former Oil Storage Tanks

6 Former Autobody Shop
Former Fuel Storage Tanks

7 Former Autobody Shop
Former Treated Wood Bulk Storage

8 Current Rail Tracks

9 Historic Dry Cleaner

10 Former Autobody Shop
Former Fuel Storage Tanks
Historic Release of Gasoline

11 Former Autobody Shop
Former Fuel Storage Tanks

12 Former Autobody Shop
Former Fuel Storage Tanks

13 Historic Dry Cleaner

5m 0 15m

HORIZONTAL SCALE 1:500

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Onsite Areas of Potential Environmental

41 & 43 Essa Rd.,
Barrie, ON

DATE ISSUED:	June 2020	Figure No.
CREATED BY:	JLM	5c
PROJECT NO.:	18-175	
REFERENCE:	Simcoe County Maps	

DAYSTAMP: M:\18 Projects\18-175 - 41 Essa - ESA\04.0 - Drafting\18-175.dwg

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LEGEND:

- *Approx. Property Boundary*
- *Areas of Potential Environmental Concern*
  (See Figure 6b for Details)

25m 0 75m

HORIZONTAL SCALE 1:2,500

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Areas of Potential Environmental Concern

41 & 43 Essa Rd.,
Barrie, ON

DATE ISSUED:	*June 2020*	Figure No. 6a
CREATED BY:	*JLM*	
PROJECT NO.:	*18-175*	
REFERENCE:	*Simcoe County Maps*	

DAYSTAMP: M:\18 Projects\18-175 - 41 Essa - ESA\04.0 - Drafting\18-175.dwg

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File: C:\Users\jmccartney\AppData\Local\Temp\AcPublish_6756\18-175.dwg Layout: PH#6a Plotscale: 0.5

	Area of Potential Environmental Concern[2]	Location of Area of Potential Environmental Concern on RSC Property	Potentially Contaminating Activity[3]	Location of PCA (on-Site or off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Ground water, soil and/or sediment)
1	Historic use of the Site as an autobody shop	Entire RSC Property	10 – Commercial autobody shop	On-Site	PHCs, metals, VOCs	Shallow Soils and Shallow ground water
2	The past presence of an underground storage tank (UST)	At the west exterior of the existing structure & central position at Site	28 – Gas & Associated Products Storage in Fixed Tanks	On-Site	PHCs, BTEX	Shallow soils and Shallow ground water
3	Historic use of the Site as a retail fuel service station with an AST	Central area of RSC Property	28 – Gas & Associated Products Storage in Fixed Tanks	On-Site	PHCs, BTEX	Shallow soils and Shallow ground water
4	Historic fire event	Central area of RSC Property	NA – a significant fire at the former fuel AST was present	On-Site	PAHs	Shallow soils and shallow ground water
5	Historic autobody shop at 35 Essa Road	Directly east/ adjacent of RSC Property	10 – Commercial Autobody Shop	Off-Site	PHCs, metals, VOCs	Shallow ground water
6	Potential presence of an UST on the west side of the 35 Essa Road building	Directly east/ adjacent of RSC Property	28 – Gas & Associated Products Storage in Fixed Tanks	Off-Site	PHCs, BTEX, metals	Shallow ground water
7	Rail Tracks present at 259 – 273 Innisfil Street[4]	Directly southwest/ adjacent of RSC Property	46 – Rail Yards, Tracks and Spurs	Off-Site	PHCs, PAHs, Metals	Shallow soils and ground water
8	Former Co-Op business with bulk fertilizer storage at 259 – 273 Innisfil Street[4]	Directly southwest/ adjacent of RSC Property	22 – Fertilizer Manufacturing, Processing and Bulk Storage	Off-Site	Inorganics	Shallow ground water
9	Former Co-Op business with bulk pesticide storage at 259 – 273 Innisfil Street[4]	Directly southwest/ adjacent of RSC Property	40 – Pesticide (including herbicides, fungicides & anti-fouling agents) Manufacturing, Processing, Bulk Storage & Large-Scale Applications	Off-Site	Organo-chlorines	Shallow ground water
10	Historical releases to ground surface of furnace oil at 259 – 273 Innisfil Street[4]	Directly southwest/ adjacent of RSC Property	NA – releases to ground surface of furnace oil	Off-Site	PHCs, BTEX	Shallow ground water
11	Historical releases to ground surface of urea at 259 – 273 Innisfil Street[4]	Directly southwest/ adjacent of RSC Property	NA – releases to ground surface of urea	Off-Site	Inorganics	Shallow ground water
12	Historic presence of UST at 34 Essa Road	East of the RSC Property	28 – Gas & Associated Products Storage in Fixed Tanks	Off-Site	PHCs, BTEX	Shallow ground water
13	Historic presence of UST at 40 Essa Road (formerly 37 Essa Road)	East of the RSC Property	28 – Gas & Associated Products Storage in Fixed Tanks	Off-Site	PHCs, BTEX	Shallow ground water
14	Historic use of 48 Essa Road as an autobody shop (formerly 46 Essa Road)	East of the RSC Property	10 – Commercial autobody shop	Off-Site	PHCs, metals, VOCs	Shallow ground water
15	Historic presence of an UST at 48 Essa Road (formerly 46 Essa Road)	East of the RSC Property	28 – Gas & Associated Products Storage in Fixed Tanks	Off-Site	PHCs, BTEX	Shallow ground water
16	Historic presence of ASTs at 49 Essa Road	South of the RSC Property	28 – Gas & Associated Products Storage in Fixed Tanks	Off-Site	PHCs, BTEX, metals	Shallow ground water
17	Historic use of 49 Essa Road as a lumber yard[4]	South of the RSC Property	59 – Wood treating & Preservative Facility & Bulk Storage of Treated & Preserved Wood Products	Off-Site	Metals	Shallow ground water
18	CNR Rail Line[4]	Directly northeast/ adjacent of RSC Property	46 – Rail Yards, Tracks and Spurs	Off-Site	PHCs, PAHs, Metals	Shallow soils and ground water
19	Historic dry cleaning operation at 5 Gowan St (formerly 45 Gowan St)[4]	East of the RSC Property	37 – Operation of Dry Cleaning Equipment (where chemicals are used)	Off-Site	VOCs	Deep ground water
20	Current & historic use of 62 & 64 Essa Road as a fuel service station[4]	South of the RSC Property	28 – Gas & Associated Products Storage in Fixed Tanks	Off-Site	PHCs, BTEX, metals	Shallow ground water
21	Current and historic use of 62 & 64 Essa Road as a fuel service station[4]	South of the RSC Property	NA – Releases to ground surface of gasoline	Off-Site	PHCs, BTEX	Shallow ground water
22	Historic use of 62 & 64 Essa Road as an autobody shop[4]	South of the RSC Property	10 – Commercial autobody shop	Off-Site	PHCs, metals, VOCs	Shallow ground water
23	Historical records note automotive repair business at 81 Essa Road[4]	South of the RSC Property	10 – Commercial autobody shop	Off-Site	PHCs, metals, VOCs	Shallow ground water
24	Historical records note fuel storage at 81 Essa Road[4]	South of the RSC Property	28 – Gas & Associated Products Storage in Fixed Tanks	Off-Site	PHCs, BTEX	Shallow ground water
25	Historical records note automotive repair business at 91 Essa Road (also 305 Innisfil Street)[4]	South Southwest of the RSC Property	10 – Commercial autobody shop	Off-Site	PHCs, metals, VOCs	Shallow ground water
26	Historical records note fuel and waste oil storage at 91 Essa Road (also 305 Innisfil Street)[4]	South Southwest of the RSC Property	28 – Gas & Associated Products Storage in Fixed Tanks	Off-Site	PHCs, BTEX	Shallow ground water
27	Historic dry cleaning business (where chemicals were used) at 44 Gowan Street[4]	South Southwest of the RSC Property	37 – Operation of Dry Cleaning Equipment (where chemicals are used)	Off-Site	VOCs	Deep ground water

DAYSTAMP: M:\18 Projects\18-175 - 41 Essa - ESA\04.0 - Drafting\18-175.dwg

Plotted by: JMCCARTNEY on August 10, 2020 at 8:56am
File: C:\Users\jmccartney\AppData\Local\Temp\AcPublish_6756\18-175.dwg Layout: PhilBb Plotscale: 0.5

LEGEND:

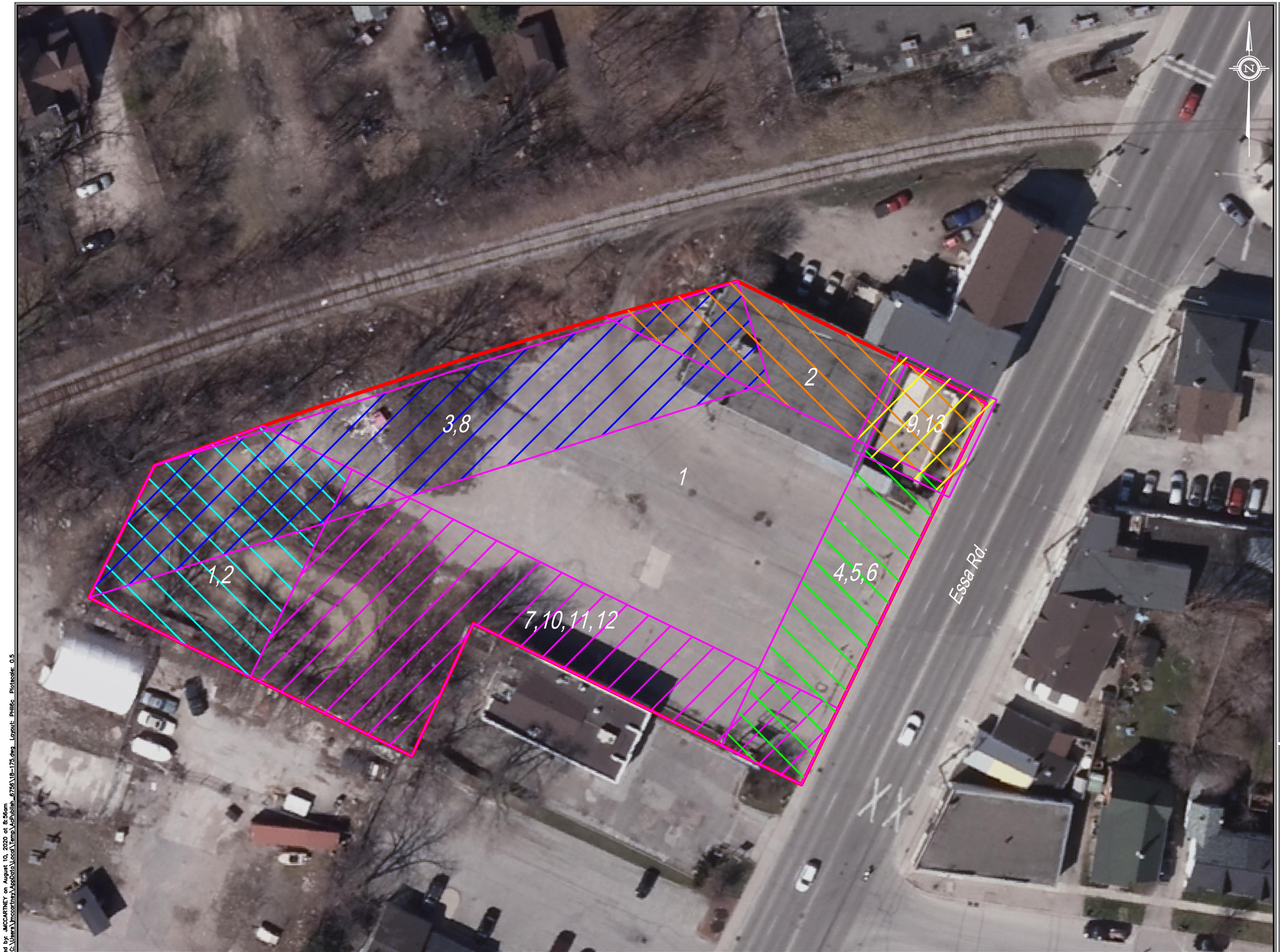
AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Areas of Potential Environmental Concern

41 & 43 Essa Rd.,
Barrie, ON

DATE ISSUED:	June 2020
CREATED BY:	JLM
PROJECT NO.:	18-175
REFERENCE:	

Figure No. 6b



LEGEND:

- Approx. Property Boundary
- Areas of Potentially Contaminating Activities

1 Former Autobody Shop
Former Fuel Storage Tanks
Former Treated Wood Bulk Storage

2 Former Autobody Shop
Former Fuel Storage Tanks

3 Current Rail Tracks
Former Bulk Fertilizer Storage
Former Bulk Pesticide Storage
Historical Releases of Urea & Furnace Oil

4 Former Oil Storage Tanks

5 Former Oil Storage Tanks

6 Former Autobody Shop
Former Fuel Storage Tanks

7 Former Autobody Shop
Former Treated Wood Bulk Storage

8 Current Rail Tracks

9 Historic Dry Cleaner

10 Former Autobody Shop
Former Fuel Storage Tanks
Historic Release of Gasoline

11 Former Autobody Shop
Former Fuel Storage Tanks

12 Former Autobody Shop
Former Fuel Storage Tanks

13 Historic Dry Cleaner

5m 0 15m

HORIZONTAL SCALE 1:500

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Onsite Areas of Potential Environmental

41 & 43 Essa Rd.,
Barrie, ON

DATE ISSUED:	June 2020	Figure No.
CREATED BY:	JLM	6c
PROJECT NO.:	18-175	
REFERENCE:	Simcoe County Maps	

DAYSTAMP: M:\18 Projects\18-175 - 41 Essa - ESA\04.0 - Drafting\18-175.dwg

Plotted by: JMCCARTNEY on August 10, 2020 at 8:56am
File: C:\Users\jmccartney\AppData\Local\Temp\AcPublish_6756\18-175.dwg Layout: PHI6c Plotscale: 0.5



LEGEND:

- Approx. Property Boundary
- Borehole Locations
- Well Locations
- Test Pit Locations
- G2S Borehole & Monitoring Well Locations
- 224.59 Ground Water Elevations
- Inferred Direction of Ground Water Flow
- 1m Ground Contour

Note:
Ground water elevations for well clusters have been averaged for presentation purposes.

5m 0 15m

HORIZONTAL SCALE 1:500

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

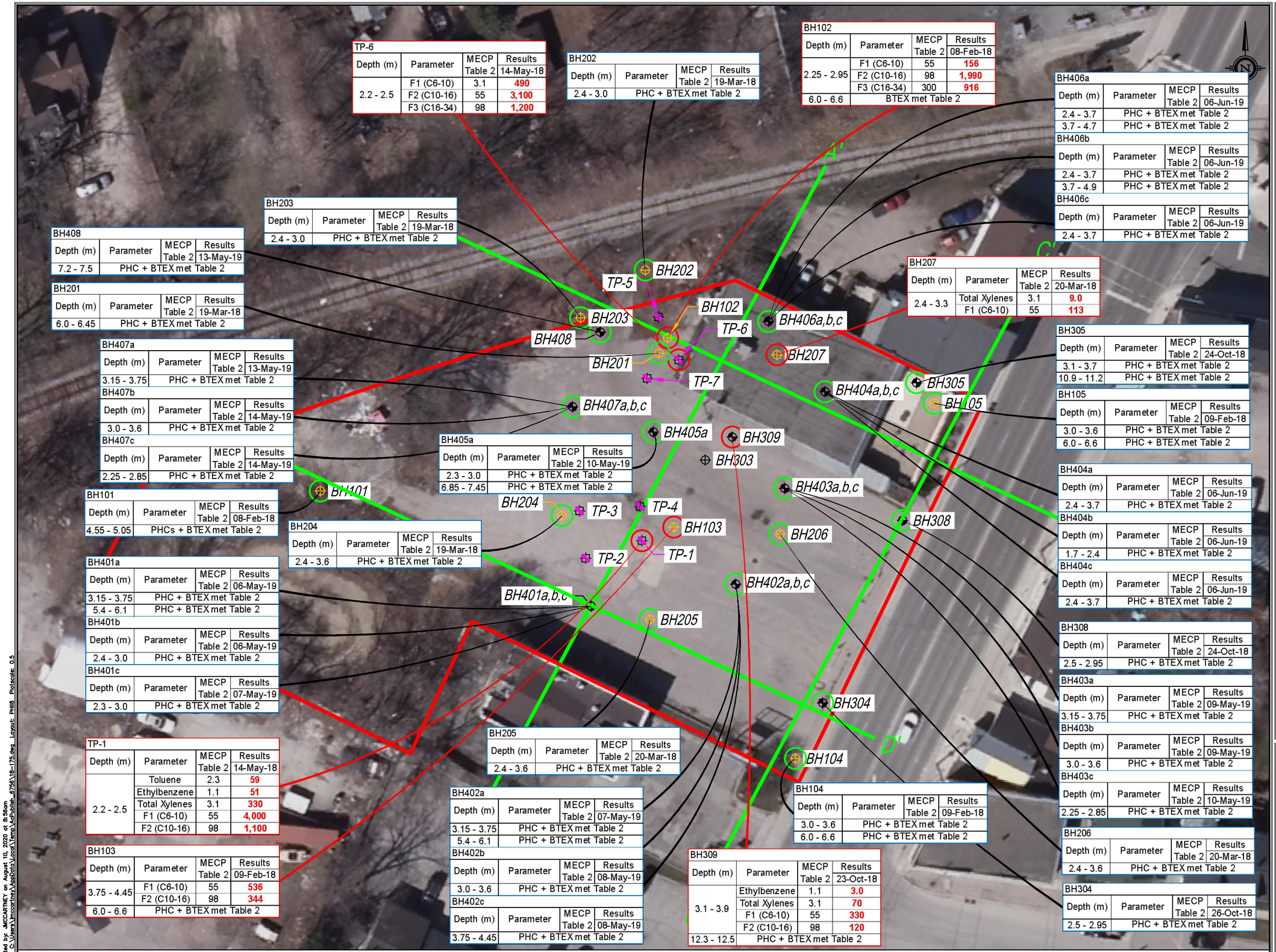
Ground Water Flow Direction
June 5, 2020

41 & 43 Essa Rd.,
Barrie, ON

DATE ISSUED:	June 2020	Figure No. 7
CREATED BY:	JLM	
PROJECT NO.:	18-175	
REFERENCE:	Simcoe County Maps	

DAYSTAMP: M:\18 Projects\18-175 - 41 Essa - ESA\04.0 - Drafting\18-175.dwg

Plotted by: JMCCARTNEY on August 10, 2020 at 8:56am
File: C:\Users\jmccartney\AppData\Local\Temp\AcPublish_6756\18-175.dwg Layout: PHI7 Plotscale: 0.5



TP-6

Depth (m)	Parameter	MECP Table 2	Results 14-May-18
2.2 - 2.5	F1 (C6-10)	3.1	490
	F2 (C10-16)	55	3,100
	F3 (C16-34)	98	1,200

BH202

Depth (m)	Parameter	MECP Table 2	Results 19-Mar-18
2.4 - 3.0	PHC + BTEX met Table 2		

BH102

Depth (m)	Parameter	MECP Table 2	Results 08-Feb-18
2.25 - 2.95	F1 (C6-10)	55	156
	F2 (C10-16)	98	1,990
	F3 (C16-34)	300	916
6.0 - 6.6	BTEX met Table 2		

BH406a

Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	PHC + BTEX met Table 2		
3.7 - 4.7	PHC + BTEX met Table 2		

BH406b

Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	PHC + BTEX met Table 2		
3.7 - 4.9	PHC + BTEX met Table 2		

BH406c

Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	PHC + BTEX met Table 2		

BH203

Depth (m)	Parameter	MECP Table 2	Results 19-Mar-18
2.4 - 3.0	PHC + BTEX met Table 2		

BH408

Depth (m)	Parameter	MECP Table 2	Results 13-May-19
7.2 - 7.5	PHC + BTEX met Table 2		

BH201

Depth (m)	Parameter	MECP Table 2	Results 19-Mar-18
6.0 - 6.45	PHC + BTEX met Table 2		

BH207

Depth (m)	Parameter	MECP Table 2	Results 20-Mar-18
2.4 - 3.3	Total Xylenes	3.1	9.0
	F1 (C6-10)	55	113

BH305

Depth (m)	Parameter	MECP Table 2	Results 24-Oct-18
3.1 - 3.7	PHC + BTEX met Table 2		
10.9 - 11.2	PHC + BTEX met Table 2		

BH407a

Depth (m)	Parameter	MECP Table 2	Results 13-May-19
3.15 - 3.75	PHC + BTEX met Table 2		

BH407b

Depth (m)	Parameter	MECP Table 2	Results 14-May-19
3.0 - 3.6	PHC + BTEX met Table 2		

BH407c

Depth (m)	Parameter	MECP Table 2	Results 14-May-19
2.25 - 2.85	PHC + BTEX met Table 2		

BH105

Depth (m)	Parameter	MECP Table 2	Results 09-Feb-18
3.0 - 3.6	PHC + BTEX met Table 2		
6.0 - 6.6	PHC + BTEX met Table 2		

BH405a

Depth (m)	Parameter	MECP Table 2	Results 10-May-19
2.3 - 3.0	PHC + BTEX met Table 2		
6.85 - 7.45	PHC + BTEX met Table 2		

BH404a

Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	PHC + BTEX met Table 2		

BH404b

Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
1.7 - 2.4	PHC + BTEX met Table 2		

BH404c

Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	PHC + BTEX met Table 2		

BH101

Depth (m)	Parameter	MECP Table 2	Results 08-Feb-18
4.55 - 5.05	PHCs + BTEX met Table 2		

BH204

Depth (m)	Parameter	MECP Table 2	Results 19-Mar-18
2.4 - 3.6	PHC + BTEX met Table 2		

BH308

Depth (m)	Parameter	MECP Table 2	Results 24-Oct-18
2.5 - 2.95	PHC + BTEX met Table 2		

BH401a

Depth (m)	Parameter	MECP Table 2	Results 06-May-19
3.15 - 3.75	PHC + BTEX met Table 2		
5.4 - 6.1	PHC + BTEX met Table 2		

BH401b

Depth (m)	Parameter	MECP Table 2	Results 06-May-19
2.4 - 3.0	PHC + BTEX met Table 2		

BH401c

Depth (m)	Parameter	MECP Table 2	Results 07-May-19
2.3 - 3.0	PHC + BTEX met Table 2		

BH403a

Depth (m)	Parameter	MECP Table 2	Results 09-May-19
3.15 - 3.75	PHC + BTEX met Table 2		

BH403b

Depth (m)	Parameter	MECP Table 2	Results 09-May-19
3.0 - 3.6	PHC + BTEX met Table 2		

BH403c

Depth (m)	Parameter	MECP Table 2	Results 10-May-19
2.25 - 2.85	PHC + BTEX met Table 2		

TP-1

Depth (m)	Parameter	MECP Table 2	Results 14-May-18
2.2 - 2.5	Toluene	2.3	59
	Ethylbenzene	1.1	51
	Total Xylenes	3.1	330
	F1 (C6-10)	55	4,000
	F2 (C10-16)	98	1,100

BH205

Depth (m)	Parameter	MECP Table 2	Results 20-Mar-18
2.4 - 3.6	PHC + BTEX met Table 2		

BH402a

Depth (m)	Parameter	MECP Table 2	Results 07-May-19
3.15 - 3.75	PHC + BTEX met Table 2		
5.4 - 6.1	PHC + BTEX met Table 2		

BH402b

Depth (m)	Parameter	MECP Table 2	Results 08-May-19
3.0 - 3.6	PHC + BTEX met Table 2		

BH402c

Depth (m)	Parameter	MECP Table 2	Results 08-May-19
3.75 - 4.45	PHC + BTEX met Table 2		

BH104

Depth (m)	Parameter	MECP Table 2	Results 09-Feb-18
3.0 - 3.6	PHC + BTEX met Table 2		
6.0 - 6.6	PHC + BTEX met Table 2		

BH103

Depth (m)	Parameter	MECP Table 2	Results 09-Feb-18
3.75 - 4.45	F1 (C6-10)	55	536
	F2 (C10-16)	98	344
6.0 - 6.6	PHC + BTEX met Table 2		

BH309

Depth (m)	Parameter	MECP Table 2	Results 23-Oct-18
3.1 - 3.9	Ethylbenzene	1.1	3.0
	Total Xylenes	3.1	70
	F1 (C6-10)	55	330
	F2 (C10-16)	98	120
12.3 - 12.5	PHC + BTEX met Table 2		

BH206

Depth (m)	Parameter	MECP Table 2	Results 20-Mar-18
2.4 - 3.6	PHC + BTEX met Table 2		

BH304

Depth (m)	Parameter	MECP Table 2	Results 26-Oct-18
2.5 - 2.95	PHC + BTEX met Table 2		

LEGEND:

- Approx. Property Boundary
- Cross-Section Locations
- Borehole Locations
- Well Locations
- Test Pit Locations
- G2S Monitoring Well Locations
- Sample Locations that are below detection Table 2 SCS criteria
- Sample Locations that are above detection Table 2 SCS criteria

Note:
Standards from Table 2 Residential/Parkland/Institutional Property Use, coarse grained soil guidelines
Unless noted otherwise, all values presented within inset tables are reported in µg/g.

5m 0 15m

HORIZONTAL SCALE 1:500

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

PHC Impacts in Soils Plan View

41 & 43 Essa Rd.,
Barrie, ON

DATE ISSUED:	June 2020	Figure No. 8
CREATED BY:	JLM	
PROJECT NO.:	18-175	
REFERENCE:	Simcoe County Maps	

DAYSTAMP: M:\18 Projects\18-175 - 41 Essa - ESA\04.0 - Drafting\18-175.dwg

Plotted by: JMCCARTNEY on August 10, 2020 at 8:56am
File: C:\Users\Jmccartney\AppData\Local\Temp\AcPublish_6756\18-175.dwg Layout: PhIII Plotscale: 0.5

Section A-A'

BH401a			
Depth (m)	Parameter	MECP Table 2	Results 06-May-19
3.15 - 3.75	PHC + BTEX met Table 2		
5.4 - 6.1	PHC + BTEX met Table 2		

BH401b			
Depth (m)	Parameter	MECP Table 2	Results 06-May-19
2.4 - 3.0	PHC + BTEX met Table 2		

BH401c			
Depth (m)	Parameter	MECP Table 2	Results 07-May-19
2.3 - 3.0	PHC + BTEX met Table 2		

BH204			
Depth (m)	Parameter	MECP Table 2	Results 19-Mar-18
2.4 - 3.6	PHC + BTEX met Table 2		

BH201			
Depth (m)	Parameter	MECP Table 2	Results 19-Mar-18
6.0 - 6.45	PHC + BTEX met Table 2		

BH203			
Depth (m)	Parameter	MECP Table 2	Results 19-Mar-18
2.4 - 3.0	PHC + BTEX met Table 2		

BH102			
Depth (m)	Parameter	MECP Table 2	Results 08-Feb-18
2.25 - 2.95	F1 (C6-10)	55	156
	F2 (C10-16)	98	1,990
	F3 (C16-34)	300	916
6.0 - 6.6	BTEX met Table 2		

BH202			
Depth (m)	Parameter	MECP Table 2	Results 19-Mar-18
2.4 - 3.0	PHC + BTEX met Table 2		

BH406a			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	PHC + BTEX met Table 2		
3.7 - 4.7	PHC + BTEX met Table 2		

BH406b			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	PHC + BTEX met Table 2		
3.7 - 4.9	PHC + BTEX met Table 2		

BH406c			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	PHC + BTEX met Table 2		

BH404a			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	PHC + BTEX met Table 2		

BH404b			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
1.7 - 2.4	PHC + BTEX met Table 2		

BH404c			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	PHC + BTEX met Table 2		

TP-6			
Depth (m)	Parameter	MECP Table 2	Results 14-May-18
2.2 - 2.5	F1 (C6-10)	3.1	490
	F2 (C10-16)	55	3,100
	F3 (C16-34)	98	1,200

BH407a			
Depth (m)	Parameter	MECP Table 2	Results 13-May-19
3.15 - 3.75	PHC + BTEX met Table 2		

BH407b			
Depth (m)	Parameter	MECP Table 2	Results 14-May-19
3.0 - 3.6	PHC + BTEX met Table 2		

BH407c			
Depth (m)	Parameter	MECP Table 2	Results 14-May-19
2.25 - 2.85	PHC + BTEX met Table 2		

BH408			
Depth (m)	Parameter	MECP Table 2	Results 13-May-19
7.2 - 7.5	PHC + BTEX met Table 2		

BH405a			
Depth (m)	Parameter	MECP Table 2	Results 10-May-19
2.3 - 3.0	PHC + BTEX met Table 2		
6.85 - 7.45	PHC + BTEX met Table 2		

Bedrock Contact @115masl

Elevation (masl)

Distance (m)

LEGEND:

- G2S Monitoring Well Locations
- Azimuth Well Locations
- Test Pit Locations
- Sand
- Clay
- Silt
- Silty Sand
- Fill
- Asphalt
- Concrete
- Water Table
- Well Screen
- Sample Locations that are below detection Table 2 SCS criteria
- Sample Locations that are above detection Table 2 SCS criteria

Notes:

1. Standards from Table 2 Residential/Parkland/Institutional Property Use, coarse grained soil guidelines.
2. Unless noted otherwise, all values presented within inset tables are reported in µg/g.
3. Bed rock elevation at 124 mbgs.
4. Bedrock contact reported from Oak Ridges Moraine Ground Water Program, 2019
5. Average ground water table displayed from monitoring all on-Site wells on June 5th, 2020.

Not to Scale
5x Vertical Exaggeration

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

PHC Impacts in Soils Geological Cross Section A-A'

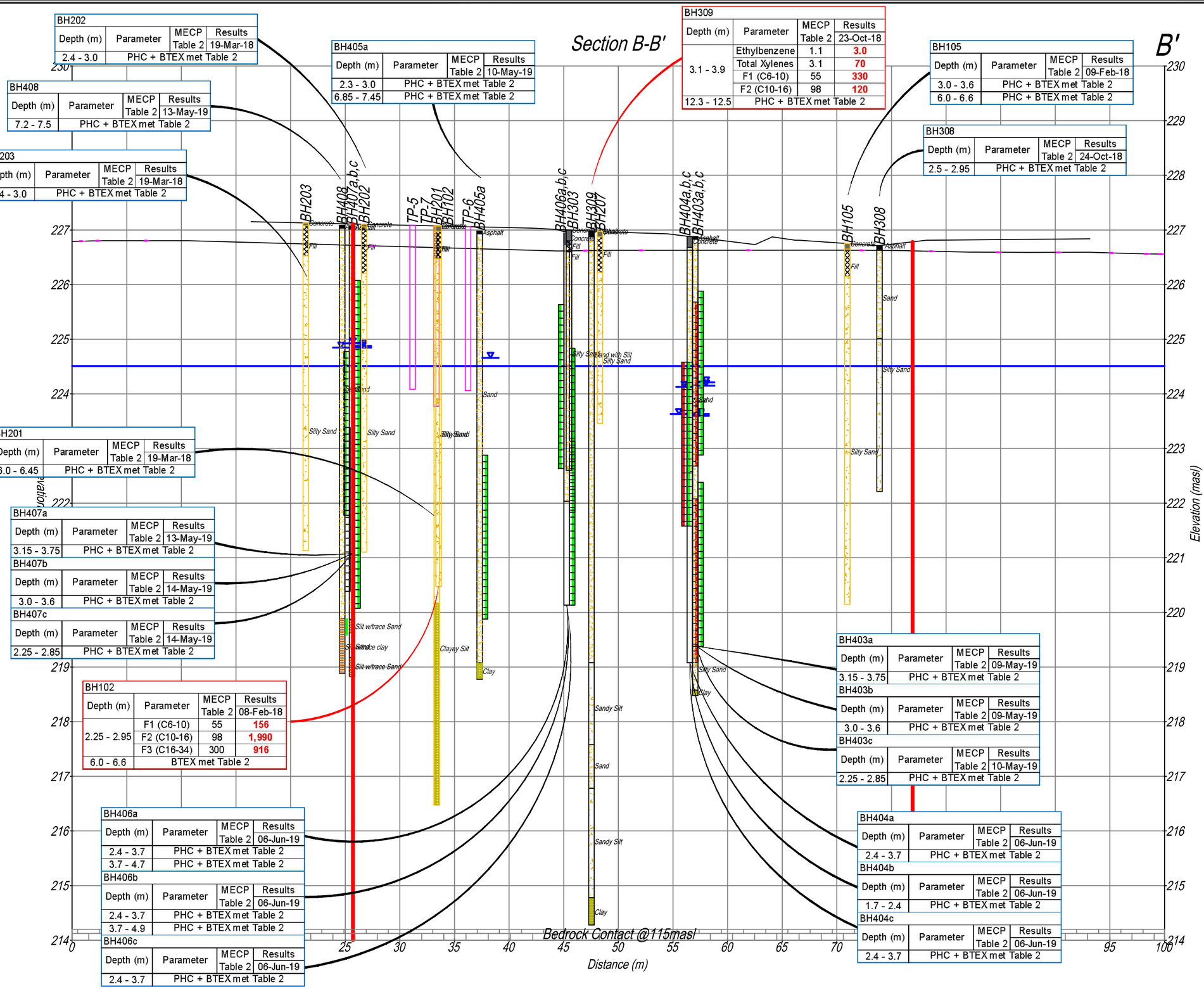
41 & 43 Essa Rd.,
Barrie, ON

DATE ISSUED:	June 2020	Figure No. 9
CREATED BY:	JLM	
PROJECT NO.:	18-175	
REFERENCE:		

DAYSTAMP: M:\18 Projects\18-175 - 41 Essa - ESA\04.0 - Drafting\18-175.dwg

Plotted by: JMCCARTNEY on August 10, 2020 at 8:56am
File: C:\Users\Jmccartney\AppData\Local\Temp\AcPublish_6756\18-175.dwg Layout: Phil9 Plotscale: 0.5

Section B-B'



BH202			
Depth (m)	Parameter	MECP Table 2	Results 19-Mar-18
2.4 - 3.0	PHC + BTEX met Table 2		

BH408			
Depth (m)	Parameter	MECP Table 2	Results 13-May-19
7.2 - 7.5	PHC + BTEX met Table 2		

BH203			
Depth (m)	Parameter	MECP Table 2	Results 19-Mar-18
2.4 - 3.0	PHC + BTEX met Table 2		

BH201			
Depth (m)	Parameter	MECP Table 2	Results 19-Mar-18
6.0 - 6.45	PHC + BTEX met Table 2		

BH407a			
Depth (m)	Parameter	MECP Table 2	Results 13-May-19
3.15 - 3.75	PHC + BTEX met Table 2		

BH407b			
Depth (m)	Parameter	MECP Table 2	Results 14-May-19
3.0 - 3.6	PHC + BTEX met Table 2		

BH407c			
Depth (m)	Parameter	MECP Table 2	Results 14-May-19
2.25 - 2.85	PHC + BTEX met Table 2		

BH405a			
Depth (m)	Parameter	MECP Table 2	Results 10-May-19
2.3 - 3.0	PHC + BTEX met Table 2		
6.85 - 7.45	PHC + BTEX met Table 2		

BH309			
Depth (m)	Parameter	MECP Table 2	Results 23-Oct-18
3.1 - 3.9	Ethylbenzene	1.1	3.0
	Total Xylenes	3.1	70
	F1 (C6-10)	55	330
	F2 (C10-16)	98	120
12.3 - 12.5	PHC + BTEX met Table 2		

BH105			
Depth (m)	Parameter	MECP Table 2	Results 09-Feb-18
3.0 - 3.6	PHC + BTEX met Table 2		
6.0 - 6.6	PHC + BTEX met Table 2		

BH308			
Depth (m)	Parameter	MECP Table 2	Results 24-Oct-18
2.5 - 2.95	PHC + BTEX met Table 2		

BH102			
Depth (m)	Parameter	MECP Table 2	Results 08-Feb-18
2.25 - 2.95	F1 (C6-10)	55	156
	F2 (C10-16)	98	1,990
	F3 (C16-34)	300	916
6.0 - 6.6	BTEX met Table 2		

BH406a			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	PHC + BTEX met Table 2		
3.7 - 4.7	PHC + BTEX met Table 2		

BH406b			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	PHC + BTEX met Table 2		
3.7 - 4.9	PHC + BTEX met Table 2		

BH406c			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	PHC + BTEX met Table 2		

BH403a			
Depth (m)	Parameter	MECP Table 2	Results 09-May-19
3.15 - 3.75	PHC + BTEX met Table 2		

BH403b			
Depth (m)	Parameter	MECP Table 2	Results 09-May-19
3.0 - 3.6	PHC + BTEX met Table 2		

BH403c			
Depth (m)	Parameter	MECP Table 2	Results 10-May-19
2.25 - 2.85	PHC + BTEX met Table 2		

BH404a			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	PHC + BTEX met Table 2		

BH404b			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
1.7 - 2.4	PHC + BTEX met Table 2		

BH404c			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	PHC + BTEX met Table 2		

LEGEND:

- G2S Monitoring Well Locations
- Azimuth Well Locations
- Test Pit Locations
- Sand
- Clay
- Silt
- Silty Sand
- Fill
- Asphalt
- Concrete
- Water Table
- Well Screen
- Sample Locations that are below detection Table 2 SCS criteria
- Sample Locations that are above detection Table 2 SCS criteria

Notes:

1. Standards from Table 2 Residential/Parkland/Institutional Property Use, coarse grained soil guidelines.
2. Unless noted otherwise, all values presented within inset tables are reported in µg/g.
3. Bed rock elevation at 124 mbgs.
4. Bedrock contact reported from Oak Ridges Moraine Ground Water Program, 2019
5. Average ground water table displayed from monitoring all on-Site wells on June 5th, 2020.

Not to Scale
5x Vertical Exaggeration

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

PHC Impacts in Soils Geological Cross Section B-B'

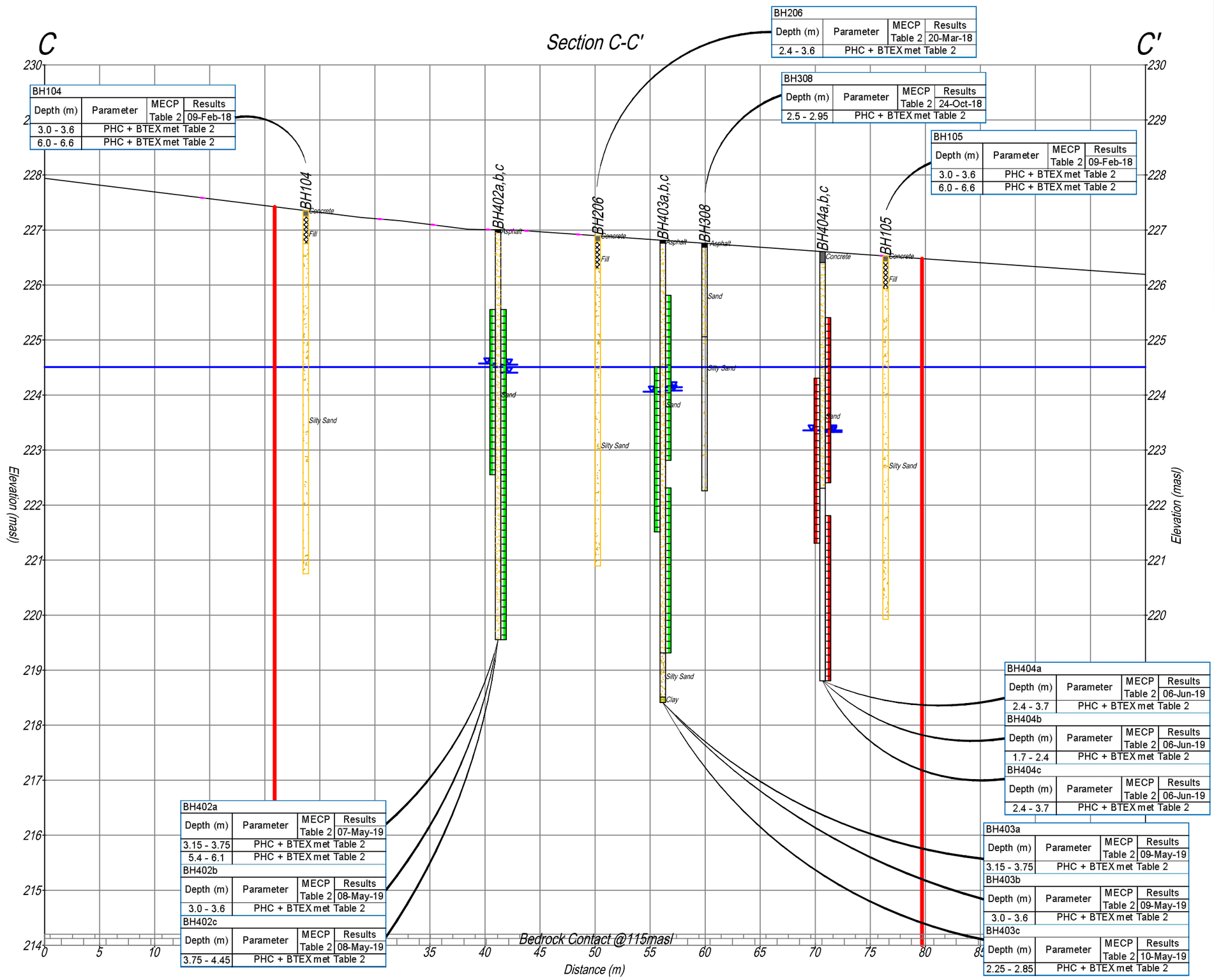
41 & 43 Essa Rd.,
Barrie, ON

DATE ISSUED:	June 2020	Figure No. 10
CREATED BY:	JLM	
PROJECT NO.:	18-175	
REFERENCE:		

DAYSTAMP: M:\18 Projects\18-175 - 41 Essa - ESA\04.0 - Drafting\18-175.dwg

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File: C:\Users\jmccartney\AppData\Local\Temp\AcPublish_6756\18-175.dwg Layout: PHII10 Plotscale: 0.5

Section C-C'



BH104			
Depth (m)	Parameter	MECP Table 2	Results 09-Feb-18
3.0 - 3.6	PHC + BTEX met Table 2		
6.0 - 6.6	PHC + BTEX met Table 2		

BH206			
Depth (m)	Parameter	MECP Table 2	Results 20-Mar-18
2.4 - 3.6	PHC + BTEX met Table 2		

BH308			
Depth (m)	Parameter	MECP Table 2	Results 24-Oct-18
2.5 - 2.95	PHC + BTEX met Table 2		

BH105			
Depth (m)	Parameter	MECP Table 2	Results 09-Feb-18
3.0 - 3.6	PHC + BTEX met Table 2		
6.0 - 6.6	PHC + BTEX met Table 2		

BH402a			
Depth (m)	Parameter	MECP Table 2	Results 07-May-19
3.15 - 3.75	PHC + BTEX met Table 2		
5.4 - 6.1	PHC + BTEX met Table 2		

BH402b			
Depth (m)	Parameter	MECP Table 2	Results 08-May-19
3.0 - 3.6	PHC + BTEX met Table 2		

BH402c			
Depth (m)	Parameter	MECP Table 2	Results 08-May-19
3.75 - 4.45	PHC + BTEX met Table 2		

BH404a			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	PHC + BTEX met Table 2		

BH404b			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
1.7 - 2.4	PHC + BTEX met Table 2		

BH404c			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	PHC + BTEX met Table 2		

BH403a			
Depth (m)	Parameter	MECP Table 2	Results 09-May-19
3.15 - 3.75	PHC + BTEX met Table 2		

BH403b			
Depth (m)	Parameter	MECP Table 2	Results 09-May-19
3.0 - 3.6	PHC + BTEX met Table 2		

BH403c			
Depth (m)	Parameter	MECP Table 2	Results 10-May-19
2.25 - 2.85	PHC + BTEX met Table 2		

LEGEND:

- G2S Monitoring Well Locations
- Azimuth Well Locations
- Test Pit Locations
- Sand
- Clay
- Silt
- Silty Sand
- Fill
- Asphalt
- Concrete
- Water Table
- Well Screen
- Sample Locations that are below detection Table 2 SCS criteria
- Sample Locations that are above detection Table 2 SCS criteria

Notes:

1. Standards from Table 2 Residential/Parkland/Institutional Property Use, coarse grained soil guidelines.
2. Unless noted otherwise, all values presented within inset tables are reported in µg/g.
3. Bed rock elevation at 124 mbgs.
4. Bedrock contact reported from Oak Ridges Moraine Ground Water Program, 2019
5. Average ground water table displayed from monitoring all on-Site wells on June 5th, 2020.

Not to Scale
5x Vertical Exaggeration

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

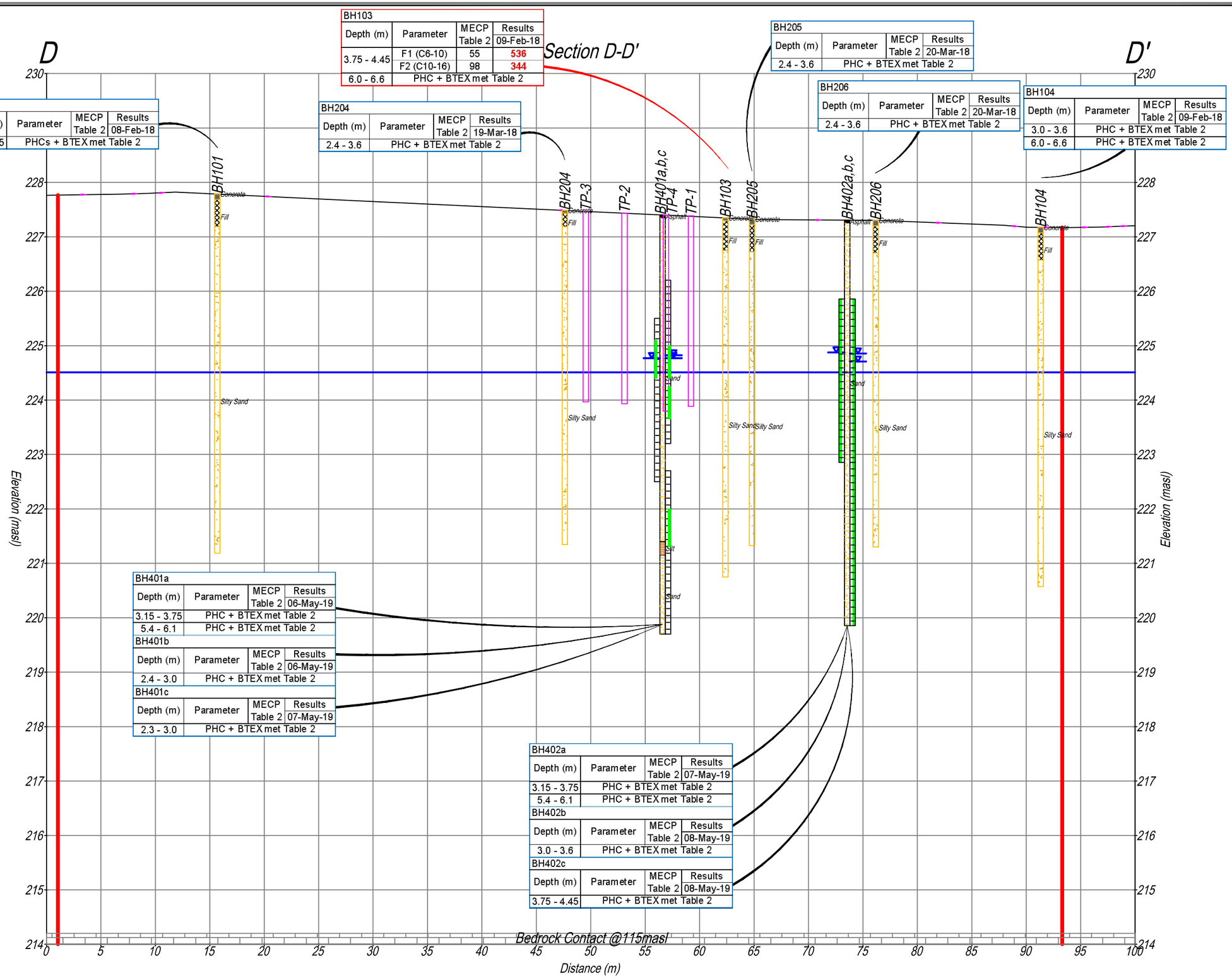
PHC Impacts in Soils Geological Cross Section C-C'

41 & 43 Essa Rd.,
Barrie, ON

DATE ISSUED:	June 2020	Figure No. 11
CREATED BY:	JLM	
PROJECT NO.:	18-175	
REFERENCE:		

DAYSTAMP: M:\18 Projects\18-175 - 41 Essa - ESA\04.0 - Drafting\18-175.dwg

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File: C:\Users\jmccartney\AppData\Local\Temp\AcPublish_6756\18--175.dwg Layout: PHI11 Plotscale: 0.5



BH103			
Depth (m)	Parameter	MECP Table 2	Results 09-Feb-18
3.75 - 4.45	F1 (C6-10)	55	536
	F2 (C10-16)	98	344
6.0 - 6.6	PHC + BTEX met Table 2		

BH205			
Depth (m)	Parameter	MECP Table 2	Results 20-Mar-18
2.4 - 3.6	PHC + BTEX met Table 2		

BH101			
Depth (m)	Parameter	MECP Table 2	Results 08-Feb-18
4.55 - 5.05	PHCs + BTEX met Table 2		

BH204			
Depth (m)	Parameter	MECP Table 2	Results 19-Mar-18
2.4 - 3.6	PHC + BTEX met Table 2		

BH206			
Depth (m)	Parameter	MECP Table 2	Results 20-Mar-18
2.4 - 3.6	PHC + BTEX met Table 2		

BH104			
Depth (m)	Parameter	MECP Table 2	Results 09-Feb-18
3.0 - 3.6	PHC + BTEX met Table 2		
6.0 - 6.6	PHC + BTEX met Table 2		

BH401a			
Depth (m)	Parameter	MECP Table 2	Results 06-May-19
3.15 - 3.75	PHC + BTEX met Table 2		
5.4 - 6.1	PHC + BTEX met Table 2		

BH401b			
Depth (m)	Parameter	MECP Table 2	Results 06-May-19
2.4 - 3.0	PHC + BTEX met Table 2		

BH401c			
Depth (m)	Parameter	MECP Table 2	Results 07-May-19
2.3 - 3.0	PHC + BTEX met Table 2		

BH402a			
Depth (m)	Parameter	MECP Table 2	Results 07-May-19
3.15 - 3.75	PHC + BTEX met Table 2		
5.4 - 6.1	PHC + BTEX met Table 2		

BH402b			
Depth (m)	Parameter	MECP Table 2	Results 08-May-19
3.0 - 3.6	PHC + BTEX met Table 2		

BH402c			
Depth (m)	Parameter	MECP Table 2	Results 08-May-19
3.75 - 4.45	PHC + BTEX met Table 2		

LEGEND:

- G2S Monitoring Well Locations
- Azimuth Well Locations
- Test Pit Locations
- Sand
- Clay
- Silt
- Silty Sand
- Fill
- Asphalt
- Concrete
- Water Table
- Well Screen
- Sample Locations that are below detection Table 2 SCS criteria
- Sample Locations that are above detection Table 2 SCS criteria

Notes:

1. Standards from Table 2 Residential/Parkland/Institutional Property Use, coarse grained soil guidelines.
2. Unless noted otherwise, all values presented within inset tables are reported in µg/g.
3. Bed rock elevation at 124 mbgs.
4. Bedrock contact reported from Oak Ridges Moraine Ground Water Program, 2019
5. Average ground water table displayed from monitoring all on-Site wells on June 5th, 2020.

Not to Scale
5x Vertical Exaggeration

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

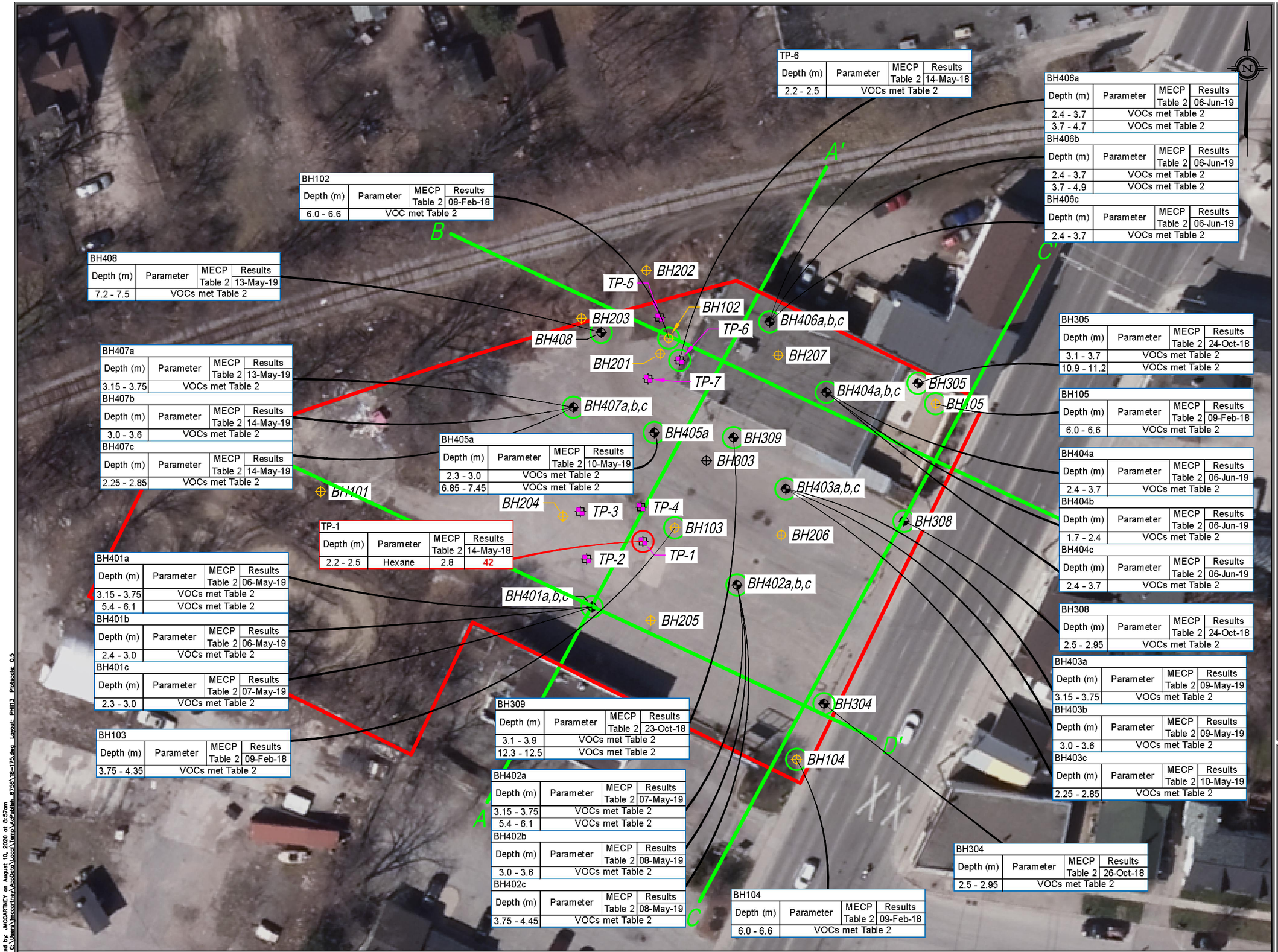
PHC Impacts in Soils Geological Cross Section D-D'

41 & 43 Essa Rd.,
Barrie, ON

DATE ISSUED:	June 2020	Figure No. 12
CREATED BY:	JLM	
PROJECT NO.:	18-175	
REFERENCE:		

DAYSTAMP: M:\18 Projects\18-175 - 41 Essa - ESA\04.0 - Drafting\18-175.dwg

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File: C:\Users\jmccartney\AppData\Local\Temp\AcPublish_6756\18-175.dwg Layout: PH#12 Plotscale: 0.5



TP-6

Depth (m)	Parameter	MECP Table 2	Results 14-May-18
2.2 - 2.5	VOCs met Table 2		

BH406a

Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	VOCs met Table 2		
3.7 - 4.7	VOCs met Table 2		

BH406b

Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	VOCs met Table 2		
3.7 - 4.9	VOCs met Table 2		

BH406c

Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	VOCs met Table 2		

BH102

Depth (m)	Parameter	MECP Table 2	Results 08-Feb-18
6.0 - 6.6	VOC met Table 2		

BH408

Depth (m)	Parameter	MECP Table 2	Results 13-May-19
7.2 - 7.5	VOCs met Table 2		

BH305

Depth (m)	Parameter	MECP Table 2	Results 24-Oct-18
3.1 - 3.7	VOCs met Table 2		
10.9 - 11.2	VOCs met Table 2		

BH407a

Depth (m)	Parameter	MECP Table 2	Results 13-May-19
3.15 - 3.75	VOCs met Table 2		

BH407b

Depth (m)	Parameter	MECP Table 2	Results 14-May-19
3.0 - 3.6	VOCs met Table 2		

BH407c

Depth (m)	Parameter	MECP Table 2	Results 14-May-19
2.25 - 2.85	VOCs met Table 2		

BH105

Depth (m)	Parameter	MECP Table 2	Results 09-Feb-18
6.0 - 6.6	VOCs met Table 2		

BH405a

Depth (m)	Parameter	MECP Table 2	Results 10-May-19
2.3 - 3.0	VOCs met Table 2		
6.85 - 7.45	VOCs met Table 2		

BH404a

Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	VOCs met Table 2		

BH404b

Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
1.7 - 2.4	VOCs met Table 2		

BH404c

Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	VOCs met Table 2		

TP-1

Depth (m)	Parameter	MECP Table 2	Results 14-May-18
2.2 - 2.5	Hexane	2.8	42

BH401a

Depth (m)	Parameter	MECP Table 2	Results 06-May-19
3.15 - 3.75	VOCs met Table 2		
5.4 - 6.1	VOCs met Table 2		

BH401b

Depth (m)	Parameter	MECP Table 2	Results 06-May-19
2.4 - 3.0	VOCs met Table 2		

BH401c

Depth (m)	Parameter	MECP Table 2	Results 07-May-19
2.3 - 3.0	VOCs met Table 2		

BH308

Depth (m)	Parameter	MECP Table 2	Results 24-Oct-18
2.5 - 2.95	VOCs met Table 2		

BH403a

Depth (m)	Parameter	MECP Table 2	Results 09-May-19
3.15 - 3.75	VOCs met Table 2		

BH403b

Depth (m)	Parameter	MECP Table 2	Results 09-May-19
3.0 - 3.6	VOCs met Table 2		

BH403c

Depth (m)	Parameter	MECP Table 2	Results 10-May-19
2.25 - 2.85	VOCs met Table 2		

BH103

Depth (m)	Parameter	MECP Table 2	Results 09-Feb-18
3.75 - 4.35	VOCs met Table 2		

BH309

Depth (m)	Parameter	MECP Table 2	Results 23-Oct-18
3.1 - 3.9	VOCs met Table 2		
12.3 - 12.5	VOCs met Table 2		

BH402a

Depth (m)	Parameter	MECP Table 2	Results 07-May-19
3.15 - 3.75	VOCs met Table 2		
5.4 - 6.1	VOCs met Table 2		

BH402b

Depth (m)	Parameter	MECP Table 2	Results 08-May-19
3.0 - 3.6	VOCs met Table 2		

BH402c

Depth (m)	Parameter	MECP Table 2	Results 08-May-19
3.75 - 4.45	VOCs met Table 2		

BH304

Depth (m)	Parameter	MECP Table 2	Results 26-Oct-18
2.5 - 2.95	VOCs met Table 2		

BH104

Depth (m)	Parameter	MECP Table 2	Results 09-Feb-18
6.0 - 6.6	VOCs met Table 2		

LEGEND:

- Approx. Property Boundary
- Cross-Section Locations
- Borehole Locations
- Well Locations
- Test Pit Locations
- G2S Monitoring Well Locations
- Sample Locations that are below detection Table 2 SCS criteria
- Sample Locations that are above detection Table 2 SCS criteria

Note:
Standards from Table 2 Residential/Parkland/Institutional Property Use, coarse grained soil guidelines
Unless noted otherwise, all values presented within inset tables are reported in µg/g.

5m 0 15m

HORIZONTAL SCALE 1:500

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

VOC Impacts in Soils Plan View

41 & 43 Essa Rd.,
Barrie, ON

DATE ISSUED:	June 2020	Figure No. 13
CREATED BY:	JLM	
PROJECT NO.:	18-175	
REFERENCE:	Simcoe County Maps	

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File: C:\Users\jmccartney\AppData\Local\Temp\AcPublish_6756\18-175.dwg Layout: Phill3 Plotscale: 0.5

Section A-A'

A

A'

Elevation (masl)

Distance (m)

BH401a			
Depth (m)	Parameter	MECP Table 2	Results 06-May-19
3.15 - 3.75	VOCs met Table 2		
5.4 - 6.1	VOCs met Table 2		

BH401b			
Depth (m)	Parameter	MECP Table 2	Results 06-May-19
2.4 - 3.0	VOCs met Table 2		

BH401c			
Depth (m)	Parameter	MECP Table 2	Results 07-May-19
2.3 - 3.0	VOCs met Table 2		

TP-6			
Depth (m)	Parameter	MECP Table 2	Results 14-May-18
2.2 - 2.5	VOCs met Table 2		

BH102			
Depth (m)	Parameter	MECP Table 2	Results 08-Feb-18
6.0 - 6.6	VOC met Table 2		

BH406a			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	VOCs met Table 2		
3.7 - 4.7	VOCs met Table 2		

BH406b			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	VOCs met Table 2		
3.7 - 4.9	VOCs met Table 2		

BH406c			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	VOCs met Table 2		

BH404a			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	VOCs met Table 2		

BH404b			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
1.7 - 2.4	VOCs met Table 2		

BH404c			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	VOCs met Table 2		

BH408			
Depth (m)	Parameter	MECP Table 2	Results 13-May-19
7.2 - 7.5	VOCs met Table 2		

BH407a			
Depth (m)	Parameter	MECP Table 2	Results 13-May-19
3.15 - 3.75	VOCs met Table 2		

BH407b			
Depth (m)	Parameter	MECP Table 2	Results 14-May-19
3.0 - 3.6	VOCs met Table 2		

BH407c			
Depth (m)	Parameter	MECP Table 2	Results 14-May-19
2.25 - 2.85	VOCs met Table 2		

BH405a			
Depth (m)	Parameter	MECP Table 2	Results 10-May-19
2.3 - 3.0	VOCs met Table 2		
6.85 - 7.45	VOCs met Table 2		

Bedrock Contact @115masl

LEGEND:

- G2S Monitoring Well Locations
- Azimuth Well Locations
- Test Pit Locations
- Sand
- Clay
- Silt
- Silty Sand
- Fill
- Asphalt
- Concrete
- Water Table
- Well Screen
- Sample Locations that are below detection Table 2 SCS criteria
- Sample Locations that are above detection Table 2 SCS criteria

Notes:

1. Standards from Table 2 Residential/Parkland/Institutional Property Use, coarse grained soil guidelines.
2. Unless noted otherwise, all values presented within inset tables are reported in µg/g.
3. Bed rock elevation at 124 mbgs.
4. Bedrock contact reported from Oak Ridges Moraine Ground Water Program, 2019
5. Average ground water table displayed from monitoring all on-Site wells on June 5th, 2020.

Not to Scale
5x Vertical Exaggeration

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

VOC Impacts in Soils Geological Cross Section A-A'

41 & 43 Essa Rd.,
Barrie, ON

DATE ISSUED:	June 2020	Figure No. 14
CREATED BY:	JLM	
PROJECT NO.:	18-175	
REFERENCE:		

DAYSTAMP: M:\18 Projects\18-175 - 41 Essa - ESA\04.0 - Drafting\18-175.dwg

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File: C:\Users\jmccartney\AppData\Local\Temp\AcPublish_6756\18-175.dwg Layout: PHit14 Plotscale: 0.5

Section B-B'

B

B'

Elevation (masl)

Distance (m)

BH309			
Depth (m)	Parameter	MECP Table 2	Results 23-Oct-18
3.1 - 3.9	VOCs met Table 2		
12.3 - 12.5	VOCs met Table 2		

BH404a			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	VOCs met Table 2		

BH404b			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
1.7 - 2.4	VOCs met Table 2		

BH404c			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	VOCs met Table 2		

BH408			
Depth (m)	Parameter	MECP Table 2	Results 13-May-19
7.2 - 7.5	VOCs met Table 2		

BH308			
Depth (m)	Parameter	MECP Table 2	Results 24-Oct-18
2.5 - 2.95	VOCs met Table 2		

BH403a			
Depth (m)	Parameter	MECP Table 2	Results 09-May-19
3.15 - 3.75	VOCs met Table 2		

BH403b			
Depth (m)	Parameter	MECP Table 2	Results 09-May-19
3.0 - 3.6	VOCs met Table 2		

BH403c			
Depth (m)	Parameter	MECP Table 2	Results 10-May-19
2.25 - 2.85	VOCs met Table 2		

BH407a			
Depth (m)	Parameter	MECP Table 2	Results 13-May-19
3.15 - 3.75	VOCs met Table 2		

BH407b			
Depth (m)	Parameter	MECP Table 2	Results 14-May-19
3.0 - 3.6	VOCs met Table 2		

BH407c			
Depth (m)	Parameter	MECP Table 2	Results 14-May-19
2.25 - 2.85	VOCs met Table 2		

BH405a			
Depth (m)	Parameter	MECP Table 2	Results 10-May-19
2.3 - 3.0	VOCs met Table 2		
6.85 - 7.45	VOCs met Table 2		

BH406a			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	VOCs met Table 2		
3.7 - 4.7	VOCs met Table 2		

BH406b			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	VOCs met Table 2		
3.7 - 4.9	VOCs met Table 2		

BH406c			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	VOCs met Table 2		

LEGEND:

- G2S Monitoring Well Locations
- Azimuth Well Locations
- Test Pit Locations
- Sand
- Clay
- Silt
- Silty Sand
- Fill
- Asphalt
- Concrete
- Water Table
- Well Screen
- Sample Locations that are below detection Table 2 SCS criteria
- Sample Locations that are above detection Table 2 SCS criteria

Notes:

1. *Standards from Table 2 Residential/Parkland/Institutional Property Use, coarse grained soil guidelines.*
2. *Unless noted otherwise, all values presented within inset tables are reported in µg/g.*
3. *Bed rock elevation at 124 mbgs.*
4. *Bedrock contact reported from Oak Ridges Moraine Ground Water Program, 2019*
5. *Average ground water table displayed from monitoring all on-Site wells on June 5th, 2020.*

Not to Scale
5x Vertical Exaggeration

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

VOC Impacts in Soils Geological Cross Section B-B'

41 & 43 Essa Rd., Barrie, ON

DATE ISSUED:	June 2020	Figure No. 15
CREATED BY:	JLM	
PROJECT NO.:	18-175	
REFERENCE:		

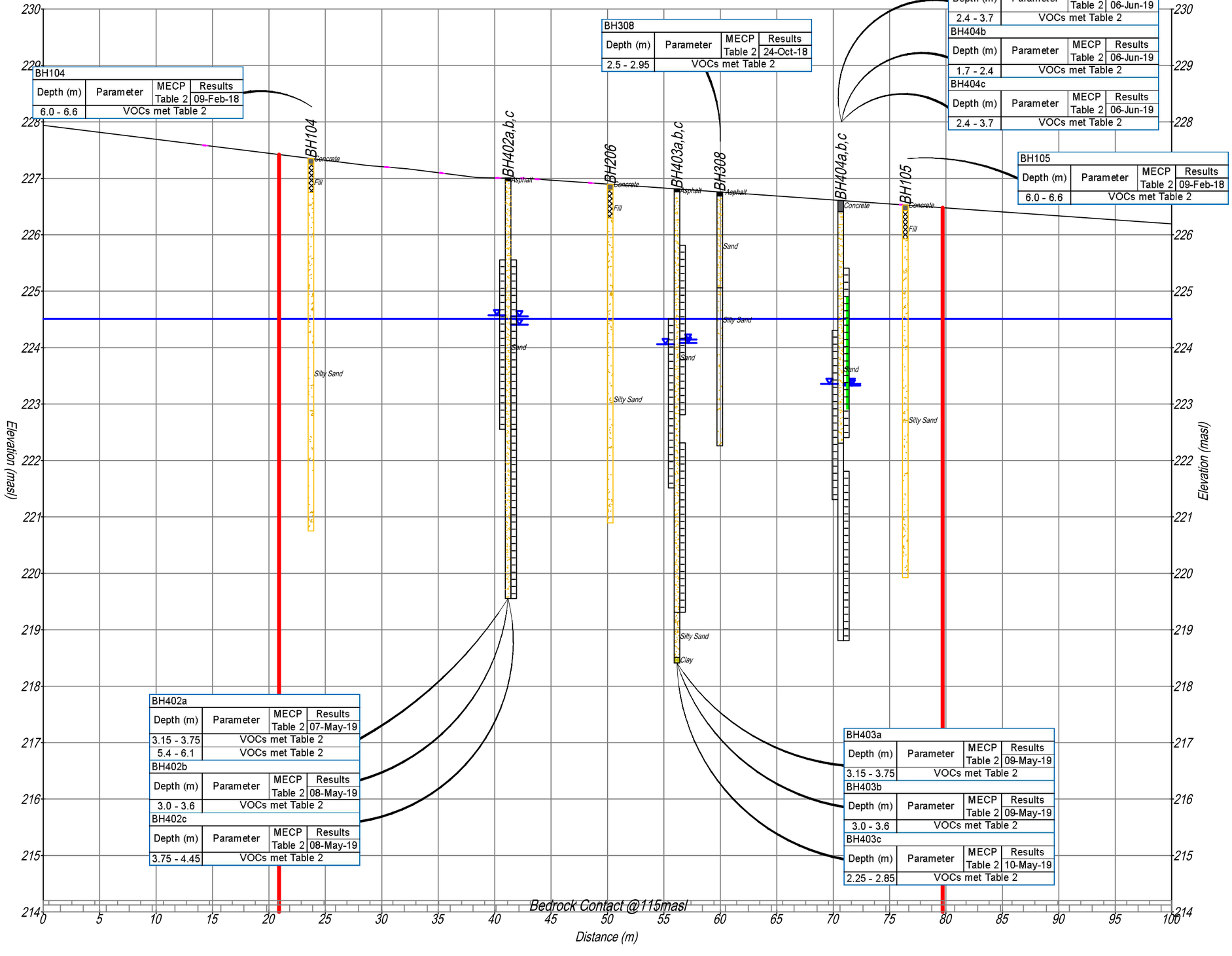
DAYSTAMP: M:\18 Projects\18-175 - 41 Essa - ESA\04.0 - Drafting\18-175.dwg

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File: C:\Users\jmccartney\AppData\Local\Temp\AcPublish_6756\18-175.dwg Layout: PH#15 Plotscale: 0.5

Section C-C'

C

C'



BH104			
Depth (m)	Parameter	MECP Table 2	Results 09-Feb-18
6.0 - 6.6	VOCs met Table 2		

BH308			
Depth (m)	Parameter	MECP Table 2	Results 24-Oct-18
2.5 - 2.95	VOCs met Table 2		

BH404a			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	VOCs met Table 2		

BH404b			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
1.7 - 2.4	VOCs met Table 2		

BH404c			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	VOCs met Table 2		

BH105			
Depth (m)	Parameter	MECP Table 2	Results 09-Feb-18
6.0 - 6.6	VOCs met Table 2		

BH402a			
Depth (m)	Parameter	MECP Table 2	Results 07-May-19
3.15 - 3.75	VOCs met Table 2		
5.4 - 6.1	VOCs met Table 2		

BH402b			
Depth (m)	Parameter	MECP Table 2	Results 08-May-19
3.0 - 3.6	VOCs met Table 2		

BH402c			
Depth (m)	Parameter	MECP Table 2	Results 08-May-19
3.75 - 4.45	VOCs met Table 2		

BH403a			
Depth (m)	Parameter	MECP Table 2	Results 09-May-19
3.15 - 3.75	VOCs met Table 2		

BH403b			
Depth (m)	Parameter	MECP Table 2	Results 09-May-19
3.0 - 3.6	VOCs met Table 2		

BH403c			
Depth (m)	Parameter	MECP Table 2	Results 10-May-19
2.25 - 2.85	VOCs met Table 2		

LEGEND:

- G2S Monitoring Well Locations
- Azimuth Well Locations
- Test Pit Locations
- Sand
- Clay
- Silt
- Silty Sand
- Fill
- Asphalt
- Concrete
- Water Table
- Well Screen
- Sample Locations that are below detection Table 2 SCS criteria
- Sample Locations that are above detection Table 2 SCS criteria

Notes:

1. Standards from Table 2 Residential/Parkland/Institutional Property Use, coarse grained soil guidelines.
2. Unless noted otherwise, all values presented within inset tables are reported in µg/g.
3. Bed rock elevation at 124 mbgs.
4. Bedrock contact reported from Oak Ridges Moraine Ground Water Program, 2019
5. Average ground water table displayed from monitoring all on-Site wells on June 5th, 2020.

Not to Scale
5x Vertical Exaggeration

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

VOC Impacts in Soils Geological Cross Section C-C'

41 & 43 Essa Rd.,
Barrie, ON

DATE ISSUED:	June 2020	Figure No. 16
CREATED BY:	JLM	
PROJECT NO.:	18-175	
REFERENCE:		

DAYSTAMP: M:\18 Projects\18-175 - 41 Essa - ESA\04.0 - Drafting\18-175.dwg

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File: C:\Users\jmccartney\AppData\Local\Temp\AcPublish_6756\18-175.dwg Layout: PHill6 Plotscale: 0.5

Section D-D'

D

D'

Elevation (masl)

Distance (m)

BH101 BH204 TP-3 TP-2 BH401a,b,c TP-4 TP-1 BH103 BH205 BH402a,b,c BH206 BH104

Concrete
Fill
Asphalt
Silty Sand
Sand
Silt
Bedrock Contact @115masl

BH103			
Depth (m)	Parameter	MECP Table 2	Results 09-Feb-18
3.75 - 4.35	VOCs met Table 2		

BH104			
Depth (m)	Parameter	MECP Table 2	Results 09-Feb-18
6.0 - 6.6	VOCs met Table 2		

TP-1			
Depth (m)	Parameter	MECP Table 2	Results 14-May-18
2.2 - 2.5	Hexane	2.8	42

BH401a			
Depth (m)	Parameter	MECP Table 2	Results 06-May-19
3.15 - 3.75	VOCs met Table 2		
5.4 - 6.1	VOCs met Table 2		

BH401b			
Depth (m)	Parameter	MECP Table 2	Results 06-May-19
2.4 - 3.0	VOCs met Table 2		

BH401c			
Depth (m)	Parameter	MECP Table 2	Results 07-May-19
2.3 - 3.0	VOCs met Table 2		

BH402a			
Depth (m)	Parameter	MECP Table 2	Results 07-May-19
3.15 - 3.75	VOCs met Table 2		
5.4 - 6.1	VOCs met Table 2		

BH402b			
Depth (m)	Parameter	MECP Table 2	Results 08-May-19
3.0 - 3.6	VOCs met Table 2		

BH402c			
Depth (m)	Parameter	MECP Table 2	Results 08-May-19
3.75 - 4.45	VOCs met Table 2		

LEGEND:

- G2S Monitoring Well Locations
- Azimuth Well Locations
- Test Pit Locations
- Sand
- Clay
- Silt
- Silty Sand
- Fill
- Asphalt
- Concrete
- Water Table
- Well Screen
- Sample Locations that are below detection Table 2 SCS criteria
- Sample Locations that are above detection Table 2 SCS criteria

Notes:

1. Standards from Table 2 Residential/Parkland/Institutional Property Use, coarse grained soil guidelines.
2. Unless noted otherwise, all values presented within inset tables are reported in µg/g.
3. Bed rock elevation at 124 mbgs.
4. Bedrock contact reported from Oak Ridges Moraine Ground Water Program, 2019
5. Average ground water table displayed from monitoring all on-Site wells on June 5th, 2020.

Not to Scale
5x Vertical Exaggeration

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

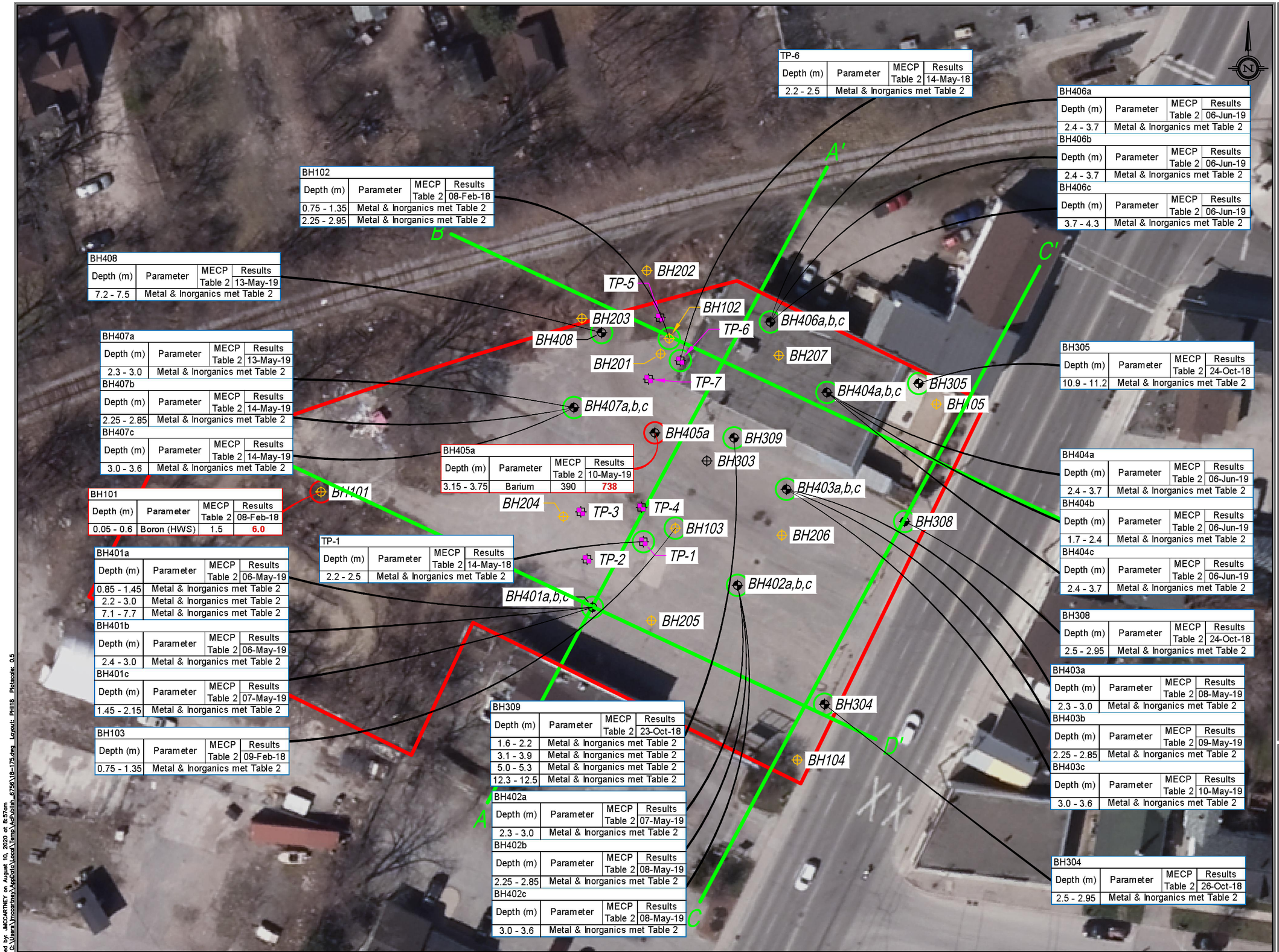
VOC Impacts in Soils Geological Cross Section D-D'

41 & 43 Essa Rd.,
Barrie, ON

DATE ISSUED:	June 2020	Figure No. 17
CREATED BY:	JLM	
PROJECT NO.:	18-175	
REFERENCE:		

DAYSTAMP: M:\18 Projects\18-175 - 41 Essa - ESA\04.0 - Drafting\18-175.dwg

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TP-6			
Depth (m)	Parameter	MECP Table 2	Results 14-May-18
2.2 - 2.5	Metal & Inorganics met Table 2		

BH102			
Depth (m)	Parameter	MECP Table 2	Results 08-Feb-18
0.75 - 1.35	Metal & Inorganics met Table 2		
2.25 - 2.95	Metal & Inorganics met Table 2		

BH406a			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	Metal & Inorganics met Table 2		

BH406b			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	Metal & Inorganics met Table 2		

BH406c			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
3.7 - 4.3	Metal & Inorganics met Table 2		

BH408			
Depth (m)	Parameter	MECP Table 2	Results 13-May-19
7.2 - 7.5	Metal & Inorganics met Table 2		

BH305			
Depth (m)	Parameter	MECP Table 2	Results 24-Oct-18
10.9 - 11.2	Metal & Inorganics met Table 2		

BH407a			
Depth (m)	Parameter	MECP Table 2	Results 13-May-19
2.3 - 3.0	Metal & Inorganics met Table 2		

BH407b			
Depth (m)	Parameter	MECP Table 2	Results 14-May-19
2.25 - 2.85	Metal & Inorganics met Table 2		

BH407c			
Depth (m)	Parameter	MECP Table 2	Results 14-May-19
3.0 - 3.6	Metal & Inorganics met Table 2		

BH405a			
Depth (m)	Parameter	MECP Table 2	Results 10-May-19
3.15 - 3.75	Barium	390	738

BH404a			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	Metal & Inorganics met Table 2		

BH404b			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
1.7 - 2.4	Metal & Inorganics met Table 2		

BH404c			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	Metal & Inorganics met Table 2		

BH101			
Depth (m)	Parameter	MECP Table 2	Results 08-Feb-18
0.05 - 0.6	Boron (HWS)	1.5	6.0

TP-1			
Depth (m)	Parameter	MECP Table 2	Results 14-May-18
2.2 - 2.5	Metal & Inorganics met Table 2		

BH308			
Depth (m)	Parameter	MECP Table 2	Results 24-Oct-18
2.5 - 2.95	Metal & Inorganics met Table 2		

BH401a			
Depth (m)	Parameter	MECP Table 2	Results 06-May-19
0.85 - 1.45	Metal & Inorganics met Table 2		
2.2 - 3.0	Metal & Inorganics met Table 2		
7.1 - 7.7	Metal & Inorganics met Table 2		

BH401b			
Depth (m)	Parameter	MECP Table 2	Results 06-May-19
2.4 - 3.0	Metal & Inorganics met Table 2		

BH401c			
Depth (m)	Parameter	MECP Table 2	Results 07-May-19
1.45 - 2.15	Metal & Inorganics met Table 2		

BH403a			
Depth (m)	Parameter	MECP Table 2	Results 08-May-19
2.3 - 3.0	Metal & Inorganics met Table 2		

BH403b			
Depth (m)	Parameter	MECP Table 2	Results 09-May-19
2.25 - 2.85	Metal & Inorganics met Table 2		

BH403c			
Depth (m)	Parameter	MECP Table 2	Results 10-May-19
3.0 - 3.6	Metal & Inorganics met Table 2		

BH103			
Depth (m)	Parameter	MECP Table 2	Results 09-Feb-18
0.75 - 1.35	Metal & Inorganics met Table 2		

BH309			
Depth (m)	Parameter	MECP Table 2	Results 23-Oct-18
1.6 - 2.2	Metal & Inorganics met Table 2		
3.1 - 3.9	Metal & Inorganics met Table 2		
5.0 - 5.3	Metal & Inorganics met Table 2		
12.3 - 12.5	Metal & Inorganics met Table 2		

BH402a			
Depth (m)	Parameter	MECP Table 2	Results 07-May-19
2.3 - 3.0	Metal & Inorganics met Table 2		

BH402b			
Depth (m)	Parameter	MECP Table 2	Results 08-May-19
2.25 - 2.85	Metal & Inorganics met Table 2		

BH402c			
Depth (m)	Parameter	MECP Table 2	Results 08-May-19
3.0 - 3.6	Metal & Inorganics met Table 2		

BH304			
Depth (m)	Parameter	MECP Table 2	Results 26-Oct-18
2.5 - 2.95	Metal & Inorganics met Table 2		

LEGEND:

- Approx. Property Boundary
- Cross-Section Locations
- Borehole Locations
- Well Locations
- Test Pit Locations
- G2S Monitoring Well Locations
- Sample Locations that are below detection Table 2 SCS criteria
- Sample Locations that are above detection Table 2 SCS criteria

Note:
Standards from Table 2 Residential/Parkland/Institutional Property Use, coarse grained soil guidelines
Unless noted otherwise, all values presented within inset tables are reported in µg/g.

5m 0 15m

HORIZONTAL SCALE 1:500

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Metals and Inorganic Parameters Impacts in Soils Plan View

41 & 43 Essa Rd.,
Barrie, ON

DATE ISSUED:	June 2020	Figure No. 18
CREATED BY:	JLM	
PROJECT NO.:	18-175	
REFERENCE:	Simcoe County Maps	

DAYSTAMP: M:\18 Projects\18-175 - 41 Essa - ESA\04.0 - Drafting\18-175.dwg

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File: C:\Users\jmccartney\AppData\Local\Temp\AcPublish_6756\18-175.dwg Layout: PH#18 Plotscale: 0.5

Section A-A'

A

A'

BH401a			
Depth (m)	Parameter	MECP Table 2	Results 06-May-19
0.85 - 1.45	Metal & Inorganics met Table 2		
2.2 - 3.0	Metal & Inorganics met Table 2		
7.1 - 7.7	Metal & Inorganics met Table 2		

BH401b			
Depth (m)	Parameter	MECP Table 2	Results 06-May-19
2.4 - 3.0	Metal & Inorganics met Table 2		

BH401c			
Depth (m)	Parameter	MECP Table 2	Results 07-May-19
1.45 - 2.15	Metal & Inorganics met Table 2		

TP-6			
Depth (m)	Parameter	MECP Table 2	Results 14-May-18
2.2 - 2.5	Metal & Inorganics met Table 2		

BH102			
Depth (m)	Parameter	MECP Table 2	Results 08-Feb-18
0.75 - 1.35	Metal & Inorganics met Table 2		
2.25 - 2.95	Metal & Inorganics met Table 2		

BH406a			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	Metal & Inorganics met Table 2		

BH406b			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	Metal & Inorganics met Table 2		

BH406c			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
3.7 - 4.3	Metal & Inorganics met Table 2		

BH404a			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	Metal & Inorganics met Table 2		

BH404b			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
1.7 - 2.4	Metal & Inorganics met Table 2		

BH404c			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	Metal & Inorganics met Table 2		

BH408			
Depth (m)	Parameter	MECP Table 2	Results 13-May-19
7.2 - 7.5	Metal & Inorganics met Table 2		

BH407a			
Depth (m)	Parameter	MECP Table 2	Results 13-May-19
2.3 - 3.0	Metal & Inorganics met Table 2		

BH407b			
Depth (m)	Parameter	MECP Table 2	Results 14-May-19
2.25 - 2.85	Metal & Inorganics met Table 2		

BH407c			
Depth (m)	Parameter	MECP Table 2	Results 14-May-19
3.0 - 3.6	Metal & Inorganics met Table 2		

BH405a			
Depth (m)	Parameter	MECP Table 2	Results 10-May-19
3.15 - 3.75	Barium	390	738

Bedrock Contact @115masl

Elevation (masl)

Distance (m)

LEGEND:

- G2S Monitoring Well Locations
- Azimuth Well Locations
- Test Pit Locations
- Sand
- Clay
- Silt
- Silty Sand
- Fill
- Asphalt
- Concrete
- Water Table
- Well Screen
- Sample Locations that are below detection Table 2 SCS criteria
- Sample Locations that are above detection Table 2 SCS criteria

Notes:

1. Standards from Table 2 Residential/Parkland/Institutional Property Use, coarse grained soil guidelines.
2. Unless noted otherwise, all values presented within inset tables are reported in µg/g.
3. Bed rock elevation at 124 mbgs.
4. Bedrock contact reported from Oak Ridges Moraine Ground Water Program, 2019
5. Average ground water table displayed from monitoring all on-Site wells on June 5th, 2020.

Not to Scale
5x Vertical Exaggeration

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Metals and Inorganic Parameters Impacts in Soils Geological Cross Section A-A'

41 & 43 Essa Rd.,
Barrie, ON

DATE ISSUED:	June 2020	Figure No. 19
CREATED BY:	JLM	
PROJECT NO.:	18-175	
REFERENCE:		

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File: C:\Users\Jmccartney\AppData\Local\Temp\AcPublish_6756\18-175.dwg Layout: PHill19 Plotscale: 0.5

B

Section B-B'

B'

BH309			
Depth (m)	Parameter	MECP Table 2	Results 23-Oct-18
1.6 - 2.2	Metal & Inorganics met Table 2		
3.1 - 3.9	Metal & Inorganics met Table 2		
5.0 - 5.3	Metal & Inorganics met Table 2		
12.3 - 12.5	Metal & Inorganics met Table 2		

BH404a			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	Metal & Inorganics met Table 2		

BH404b			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
1.7 - 2.4	Metal & Inorganics met Table 2		

BH404c			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	Metal & Inorganics met Table 2		

BH408			
Depth (m)	Parameter	MECP Table 2	Results 13-May-19
7.2 - 7.5	Metal & Inorganics met Table 2		

BH308			
Depth (m)	Parameter	MECP Table 2	Results 24-Oct-18
2.5 - 2.95	Metal & Inorganics met Table 2		

BH403a			
Depth (m)	Parameter	MECP Table 2	Results 08-May-19
2.3 - 3.0	Metal & Inorganics met Table 2		

BH403b			
Depth (m)	Parameter	MECP Table 2	Results 09-May-19
2.25 - 2.85	Metal & Inorganics met Table 2		

BH403c			
Depth (m)	Parameter	MECP Table 2	Results 10-May-19
3.0 - 3.6	Metal & Inorganics met Table 2		

BH407a			
Depth (m)	Parameter	MECP Table 2	Results 13-May-19
2.3 - 3.0	Metal & Inorganics met Table 2		

BH407b			
Depth (m)	Parameter	MECP Table 2	Results 14-May-19
2.25 - 2.85	Metal & Inorganics met Table 2		

BH407c			
Depth (m)	Parameter	MECP Table 2	Results 14-May-19
3.0 - 3.6	Metal & Inorganics met Table 2		

BH406a			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	Metal & Inorganics met Table 2		

BH406b			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	Metal & Inorganics met Table 2		

BH406c			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
3.7 - 4.3	Metal & Inorganics met Table 2		

BH405a			
Depth (m)	Parameter	MECP Table 2	Results 10-May-19
3.15 - 3.75	Barium	390	738

Bedrock Contact @115masl

Elevation (masl)

Distance (m)

LEGEND:

- G2S Monitoring Well Locations
- Azimuth Well Locations
- Test Pit Locations
- Sand
- Clay
- Silt
- Silty Sand
- Fill
- Asphalt
- Concrete
- Water Table
- Well Screen
- Sample Locations that are below detection Table 2 SCS criteria
- Sample Locations that are above detection Table 2 SCS criteria

Notes:

1. Standards from Table 2 Residential/Parkland/Institutional Property Use, coarse grained soil guidelines.
2. Unless noted otherwise, all values presented within inset tables are reported in µg/g.
3. Bed rock elevation at 124 mbgs.
4. Bedrock contact reported from Oak Ridges Moraine Ground Water Program, 2019
5. Average ground water table displayed from monitoring all on-Site wells on June 5th, 2020.

Not to Scale
5x Vertical Exaggeration

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Metals and Inorganic Impacts in Soils
Geological Cross Section B-B'

41 & 43 Essa Rd.,
Barrie, ON

DATE ISSUED:	June 2020	Figure No. 20
CREATED BY:	JLM	
PROJECT NO.:	18-175	
REFERENCE:		

DAYSTAMP: M:\18 Projects\18-175 - 41 Essa - ESA\04.0 - Drafting\18-175.dwg

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Section C-C'

C

C'

Elevation (masl)

Distance (m)

BH104 · BH402a,b,c · BH206 · BH403a,b,c · BH308 · BH404a,b,c · BH105

Concrete · Asphalt · Fill · Sand · Silty Sand · Clay

Bedrock Contact @115masl

BH308			
Depth (m)	Parameter	MECP Table 2	Results 24-Oct-18
2.5 - 2.95	Metal & Inorganics met Table 2		

BH404a			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	Metal & Inorganics met Table 2		

BH404b			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
1.7 - 2.4	Metal & Inorganics met Table 2		

BH404c			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	Metal & Inorganics met Table 2		

BH402a			
Depth (m)	Parameter	MECP Table 2	Results 07-May-19
2.3 - 3.0	Metal & Inorganics met Table 2		

BH402b			
Depth (m)	Parameter	MECP Table 2	Results 08-May-19
2.25 - 2.85	Metal & Inorganics met Table 2		

BH402c			
Depth (m)	Parameter	MECP Table 2	Results 08-May-19
3.0 - 3.6	Metal & Inorganics met Table 2		

BH403a			
Depth (m)	Parameter	MECP Table 2	Results 08-May-19
2.3 - 3.0	Metal & Inorganics met Table 2		

BH403b			
Depth (m)	Parameter	MECP Table 2	Results 09-May-19
2.25 - 2.85	Metal & Inorganics met Table 2		

BH403c			
Depth (m)	Parameter	MECP Table 2	Results 10-May-19
3.0 - 3.6	Metal & Inorganics met Table 2		

LEGEND:

- G2S Monitoring Well Locations
- Azimuth Well Locations
- Test Pit Locations
- Sand
- Clay
- Silt
- Silty Sand
- Fill
- Asphalt
- Concrete
- Water Table
- Well Screen
- Sample Locations that are below detection Table 2 SCS criteria
- Sample Locations that are above detection Table 2 SCS criteria

Notes:

1. Standards from Table 2 Residential/Parkland/Institutional Property Use, coarse grained soil guidelines.
2. Unless noted otherwise, all values presented within inset tables are reported in µg/g.
3. Bed rock elevation at 124 mbgs.
4. Bedrock contact reported from Oak Ridges Moraine Ground Water Program, 2019
5. Average ground water table displayed from monitoring all on-Site wells on June 5th, 2020.

Not to Scale
5x Vertical Exaggeration

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

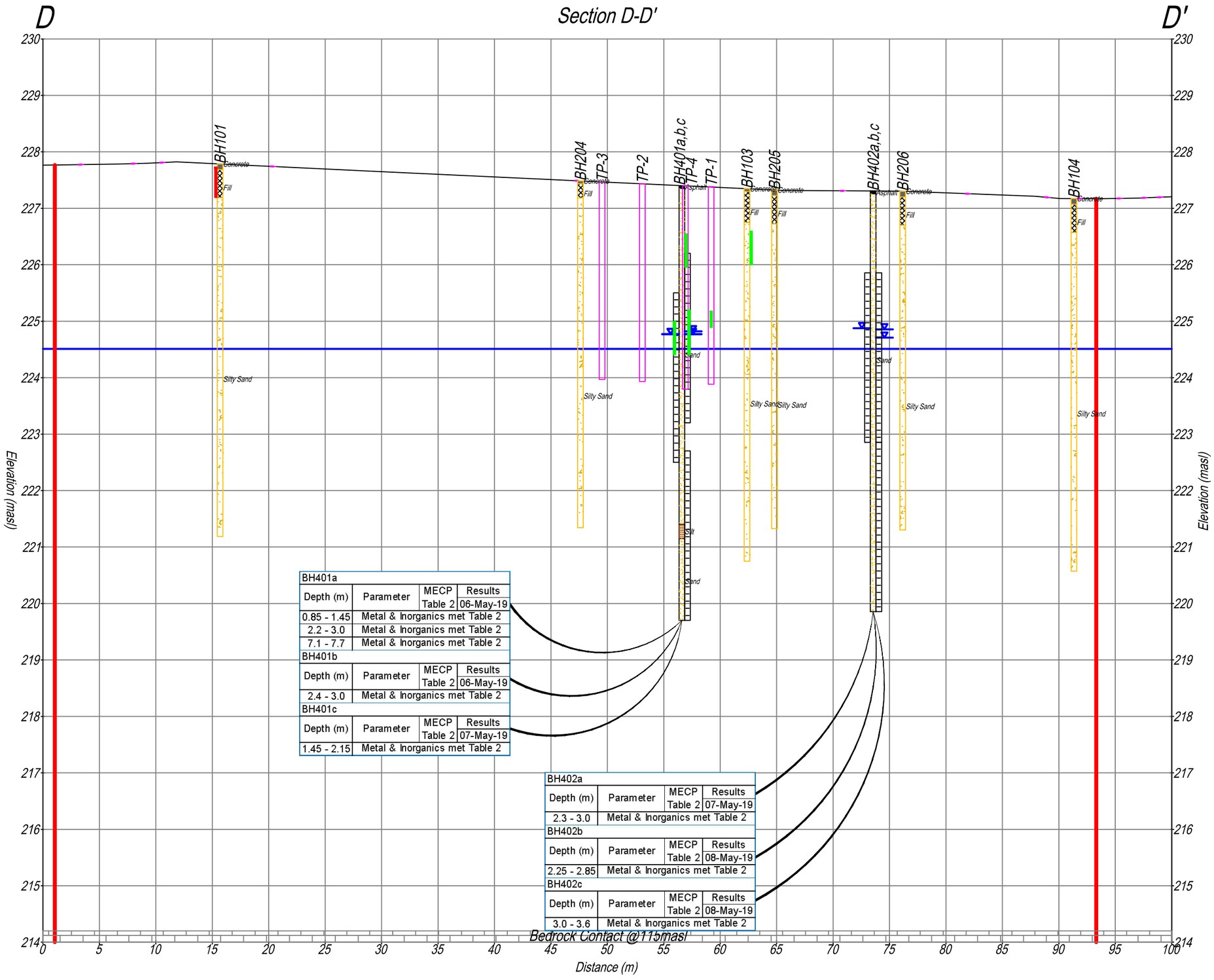
Metals and Inorganic Parameters Impacts in Soils Geological Cross Section C-C''

41 & 43 Essa Rd.,
Barrie, ON

DATE ISSUED:	June 2020	Figure No. 21
CREATED BY:	JLM	
PROJECT NO.:	18-175	
REFERENCE:		

DAYSTAMP: M:\18 Projects\18-175 - 41 Essa - ESA\04.0 - Drafting\18-175.dwg

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File: C:\Users\jmccartney\AppData\Local\Temp\AcPublish_6756\18-175.dwg Layout: PH#21 Plotscale: 0.5



BH401a			
Depth (m)	Parameter	MECP Table 2	Results 06-May-19
0.85 - 1.45	Metal & Inorganics met Table 2		
2.2 - 3.0	Metal & Inorganics met Table 2		
7.1 - 7.7	Metal & Inorganics met Table 2		

BH401b			
Depth (m)	Parameter	MECP Table 2	Results 06-May-19
2.4 - 3.0	Metal & Inorganics met Table 2		

BH401c			
Depth (m)	Parameter	MECP Table 2	Results 07-May-19
1.45 - 2.15	Metal & Inorganics met Table 2		

BH402a			
Depth (m)	Parameter	MECP Table 2	Results 07-May-19
2.3 - 3.0	Metal & Inorganics met Table 2		

BH402b			
Depth (m)	Parameter	MECP Table 2	Results 08-May-19
2.25 - 2.85	Metal & Inorganics met Table 2		

BH402c			
Depth (m)	Parameter	MECP Table 2	Results 08-May-19
3.0 - 3.6	Metal & Inorganics met Table 2		

LEGEND:

- G2S Monitoring Well Locations
- Azimuth Well Locations
- Test Pit Locations
- Sand
- Clay
- Silt
- Silty Sand
- Fill
- Asphalt
- Concrete
- Water Table
- Well Screen
- Sample Locations that are below detection Table 2 SCS criteria
- Sample Locations that are above detection Table 2 SCS criteria

Notes:

1. Standards from Table 2 Residential/Parkland/Institutional Property Use, coarse grained soil guidelines.
2. Unless noted otherwise, all values presented within inset tables are reported in µg/g.
3. Bed rock elevation at 124 mbgs.
4. Bedrock contact reported from Oak Ridges Moraine Ground Water Program, 2019
5. Average ground water table displayed from monitoring all on-Site wells on June 5th, 2020.

Not to Scale
5x Vertical Exaggeration

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

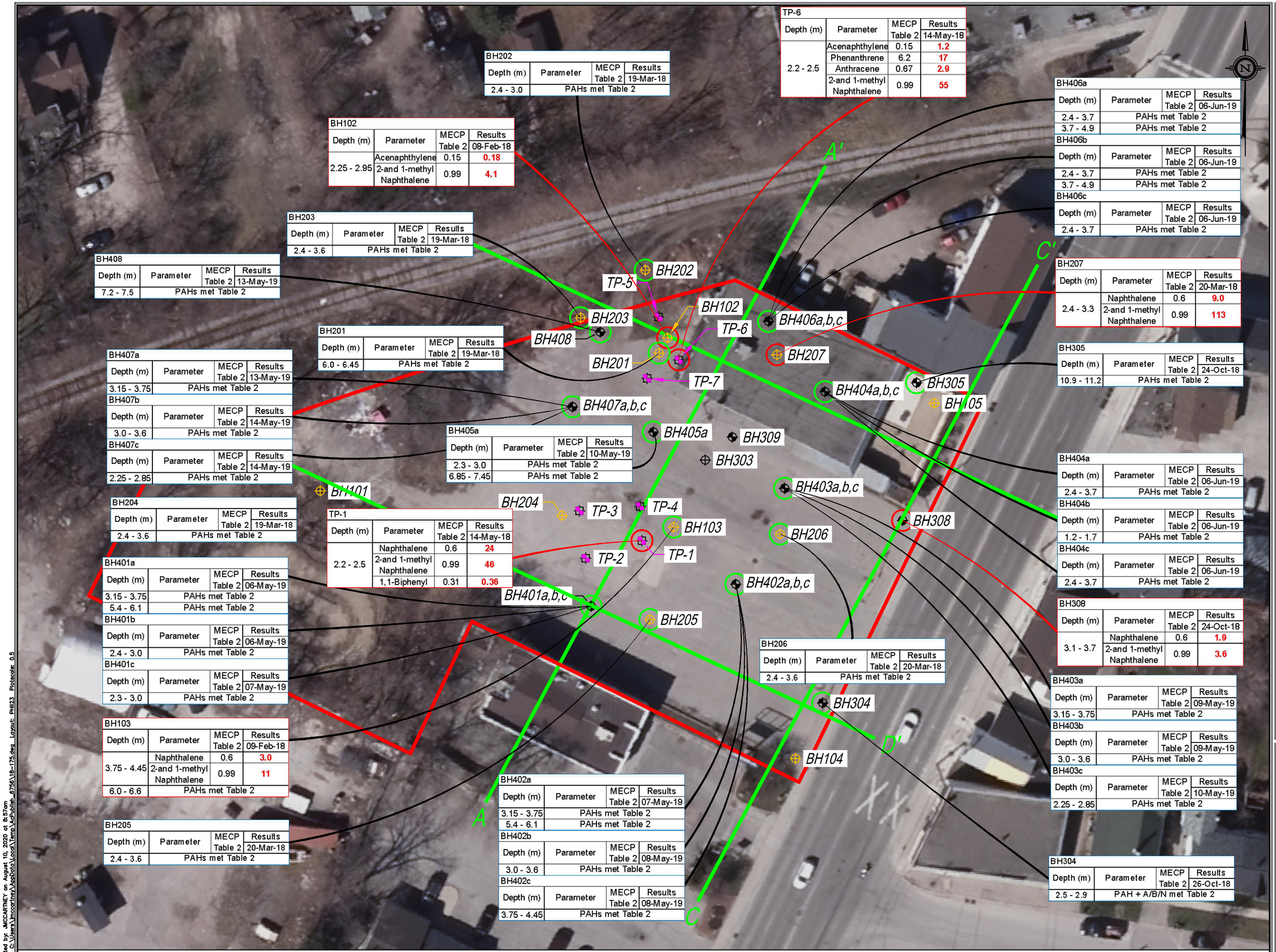
Metals and Inorganic Impacts in Soils
Geological Cross Section D-D'

41 & 43 Essa Rd.,
Barrie, ON

DATE ISSUED:	June 2020	Figure No. 22
CREATED BY:	JLM	
PROJECT NO.:	18-175	
REFERENCE:		

DAYSTAMP: M:\18 Projects\18-175 - 41 Essa - ESA\04.0 - Drafting\18-175.dwg

Plotted by: JMCCARTNEY on August 10, 2020 at 8:57am
File: C:\Users\jmccartney\AppData\Local\Temp\AcPublish_6756\18-175.dwg Layout: PH#22 Plotscale: 0.5



BH202			
Depth (m)	Parameter	MECP Table 2	Results 19-Mar-18
2.4 - 3.0	PAHs met Table 2		

BH102			
Depth (m)	Parameter	MECP Table 2	Results 08-Feb-18
2.25 - 2.95	Acenaphthylene	0.15	0.18
	2-and 1-methyl Naphthalene	0.99	4.1

BH203			
Depth (m)	Parameter	MECP Table 2	Results 19-Mar-18
2.4 - 3.6	PAHs met Table 2		

BH408			
Depth (m)	Parameter	MECP Table 2	Results 13-May-19
7.2 - 7.5	PAHs met Table 2		

BH201			
Depth (m)	Parameter	MECP Table 2	Results 19-Mar-18
6.0 - 6.45	PAHs met Table 2		

BH407a			
Depth (m)	Parameter	MECP Table 2	Results 13-May-19
3.15 - 3.75	PAHs met Table 2		

BH407b			
Depth (m)	Parameter	MECP Table 2	Results 14-May-19
3.0 - 3.6	PAHs met Table 2		

BH407c			
Depth (m)	Parameter	MECP Table 2	Results 14-May-19
2.25 - 2.85	PAHs met Table 2		

BH405a			
Depth (m)	Parameter	MECP Table 2	Results 10-May-19
2.3 - 3.0	PAHs met Table 2		
6.85 - 7.45	PAHs met Table 2		

BH204			
Depth (m)	Parameter	MECP Table 2	Results 19-Mar-18
2.4 - 3.6	PAHs met Table 2		

TP-1			
Depth (m)	Parameter	MECP Table 2	Results 14-May-18
2.2 - 2.5	Naphthalene	0.6	24
	2-and 1-methyl Naphthalene	0.99	46
	1,1-Biphenyl	0.31	0.36

BH401a			
Depth (m)	Parameter	MECP Table 2	Results 06-May-19
3.15 - 3.75	PAHs met Table 2		
5.4 - 6.1	PAHs met Table 2		

BH401b			
Depth (m)	Parameter	MECP Table 2	Results 06-May-19
2.4 - 3.0	PAHs met Table 2		

BH401c			
Depth (m)	Parameter	MECP Table 2	Results 07-May-19
2.3 - 3.0	PAHs met Table 2		

BH103			
Depth (m)	Parameter	MECP Table 2	Results 09-Feb-18
3.75 - 4.45	Naphthalene	0.6	3.0
	2-and 1-methyl Naphthalene	0.99	11
6.0 - 6.6	PAHs met Table 2		

BH205			
Depth (m)	Parameter	MECP Table 2	Results 20-Mar-18
2.4 - 3.6	PAHs met Table 2		

BH402a			
Depth (m)	Parameter	MECP Table 2	Results 07-May-19
3.15 - 3.75	PAHs met Table 2		
5.4 - 6.1	PAHs met Table 2		

BH402b			
Depth (m)	Parameter	MECP Table 2	Results 08-May-19
3.0 - 3.6	PAHs met Table 2		

BH402c			
Depth (m)	Parameter	MECP Table 2	Results 08-May-19
3.75 - 4.45	PAHs met Table 2		

BH206			
Depth (m)	Parameter	MECP Table 2	Results 20-Mar-18
2.4 - 3.6	PAHs met Table 2		

TP-6			
Depth (m)	Parameter	MECP Table 2	Results 14-May-18
2.2 - 2.5	Acenaphthylene	0.15	1.2
	Phenanthrene	6.2	17
	Anthracene	0.67	2.9
	2-and 1-methyl Naphthalene	0.99	55

BH406a			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	PAHs met Table 2		
3.7 - 4.9	PAHs met Table 2		

BH406b			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	PAHs met Table 2		
3.7 - 4.9	PAHs met Table 2		

BH406c			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	PAHs met Table 2		

BH207			
Depth (m)	Parameter	MECP Table 2	Results 20-Mar-18
2.4 - 3.3	Naphthalene	0.6	9.0
	2-and 1-methyl Naphthalene	0.99	113

BH305			
Depth (m)	Parameter	MECP Table 2	Results 24-Oct-18
10.9 - 11.2	PAHs met Table 2		

BH404a			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	PAHs met Table 2		

BH404b			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
1.2 - 1.7	PAHs met Table 2		

BH404c			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	PAHs met Table 2		

BH308			
Depth (m)	Parameter	MECP Table 2	Results 24-Oct-18
3.1 - 3.7	Naphthalene	0.6	1.9
	2-and 1-methyl Naphthalene	0.99	3.6

BH403a			
Depth (m)	Parameter	MECP Table 2	Results 09-May-19
3.15 - 3.75	PAHs met Table 2		

BH403b			
Depth (m)	Parameter	MECP Table 2	Results 09-May-19
3.0 - 3.6	PAHs met Table 2		

BH403c			
Depth (m)	Parameter	MECP Table 2	Results 10-May-19
2.25 - 2.85	PAHs met Table 2		

BH304			
Depth (m)	Parameter	MECP Table 2	Results 26-Oct-18
2.5 - 2.9	PAH + A/B/N met Table 2		

LEGEND:

- Approx. Property Boundary
- Cross-Section Locations
- Borehole Locations
- Well Locations
- Test Pit Locations
- G2S Monitoring Well Locations
- Sample Locations that are below detection Table 2 SCS criteria
- Sample Locations that are above detection Table 2 SCS criteria

Note:
Standards from Table 2 Residential/Parkland/Institutional Property Use, coarse grained soil guidelines
Unless noted otherwise, all values presented within inset tables are reported in µg/g.

5m 0 15m

HORIZONTAL SCALE 1:500

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

PAH and Acid/Base/Neutral Impacts in Soils Plan View

41 & 43 Essa Rd.,
Barrie, ON

DATE ISSUED:	June 2020	Figure No. 23
CREATED BY:	JLM	
PROJECT NO.:	18-175	
REFERENCE:	Simcoe County Maps	

DAYSTAMP: M:\18 Projects\18-175 - 41 Essa - ESA\04.0 - Drafting\18-175.dwg

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File: C:\Users\Jmccartney\AppData\Local\Temp\AcPublish_6756\18-175.dwg Layout: PH#23 Plotscale: 0.5

Section A-A'

A

A'

Elevation (masl)

Distance (m)

BH204			
Depth (m)	Parameter	MECP Table 2	Results 19-Mar-18
2.4 - 3.6	PAHs met Table 2		

BH201			
Depth (m)	Parameter	MECP Table 2	Results 19-Mar-18
6.0 - 6.45	PAHs met Table 2		

BH203			
Depth (m)	Parameter	MECP Table 2	Results 19-Mar-18
2.4 - 3.6	PAHs met Table 2		

TP-6			
Depth (m)	Parameter	MECP Table 2	Results 14-May-18
2.2 - 2.5	Acenaphthylene	0.15	1.2
	Phenanthrene	6.2	17
	Anthracene	0.67	2.9
	2-and 1-methyl Naphthalene	0.99	55

BH202			
Depth (m)	Parameter	MECP Table 2	Results 19-Mar-18
2.4 - 3.0	PAHs met Table 2		

BH401a			
Depth (m)	Parameter	MECP Table 2	Results 06-May-19
3.15 - 3.75	PAHs met Table 2		
5.4 - 6.1	PAHs met Table 2		

BH401b			
Depth (m)	Parameter	MECP Table 2	Results 06-May-19
2.4 - 3.0	PAHs met Table 2		

BH401c			
Depth (m)	Parameter	MECP Table 2	Results 07-May-19
2.3 - 3.0	PAHs met Table 2		

BH406a			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	PAHs met Table 2		
3.7 - 4.9	PAHs met Table 2		

BH406b			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	PAHs met Table 2		
3.7 - 4.9	PAHs met Table 2		

BH406c			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	PAHs met Table 2		

BH404a			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	PAHs met Table 2		

BH404b			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
1.2 - 1.7	PAHs met Table 2		

BH404c			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	PAHs met Table 2		

BH102			
Depth (m)	Parameter	MECP Table 2	Results 08-Feb-18
2.25 - 2.95	Acenaphthylene	0.15	0.18
	2-and 1-methyl Naphthalene	0.99	4.1

BH408			
Depth (m)	Parameter	MECP Table 2	Results 13-May-19
7.2 - 7.5	PAHs met Table 2		

BH407a			
Depth (m)	Parameter	MECP Table 2	Results 13-May-19
3.15 - 3.75	PAHs met Table 2		

BH407b			
Depth (m)	Parameter	MECP Table 2	Results 14-May-19
3.0 - 3.6	PAHs met Table 2		

BH407c			
Depth (m)	Parameter	MECP Table 2	Results 14-May-19
2.25 - 2.85	PAHs met Table 2		

BH405a			
Depth (m)	Parameter	MECP Table 2	Results 10-May-19
2.3 - 3.0	PAHs met Table 2		
6.85 - 7.45	PAHs met Table 2		

Bedrock Contact @115masl

LEGEND:

- G2S Monitoring Well Locations
- Azimuth Well Locations
- Test Pit Locations
- Sand
- Clay
- Silt
- Silty Sand
- Fill
- Asphalt
- Concrete
- Water Table
- Well Screen
- Sample Locations that are below detection Table 2 SCS criteria
- Sample Locations that are above detection Table 2 SCS criteria

Notes:

1. Standards from Table 2 Residential/Parkland/Institutional Property Use, coarse grained soil guidelines.
2. Unless noted otherwise, all values presented within inset tables are reported in µg/g.
3. Bed rock elevation at 124 mbgs.
4. Bedrock contact reported from Oak Ridges Moraine Ground Water Program, 2019
5. Average ground water table displayed from monitoring all on-Site wells on June 5th, 2020.

Not to Scale
5x Vertical Exaggeration

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

PAH and Acid/Base/Neutral Impacts in Soils Geological Cross Section A-A'

41 & 43 Essa Rd.,
Barrie, ON

DATE ISSUED:	June 2020	Figure No. 24
CREATED BY:	JLM	
PROJECT NO.:	18-175	
REFERENCE:		

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File: C:\Users\jmccartney\AppData\Local\Temp\AcPublish_6756\18-175.dwg Layout: Phill24 Plotscale: 0.5

Section B-B'

B

B'

Elevation (masl)

Distance (m)

Bedrock Contact @115masl

BH203 BH408 BH407a,b,c BH202 TP-5 TP-7 BH201 BH102 TP-6 BH405a BH406a,b,c BH303 BH309 BH207 BH404a,b,c BH403a,b,c BH105 BH308

Concrete Fill Asphalt Silty Sand Silty Sand with Silt Sand Silt w/trace Sand Silt w/trace clay Clayey Silt Clay Sandy Silt

BH308			
Depth (m)	Parameter	MECP Table 2	Results 24-Oct-18
3.1 - 3.7	Naphthalene	0.6	1.9
	2-and 1-methyl Naphthalene	0.99	3.6

BH408			
Depth (m)	Parameter	MECP Table 2	Results 13-May-19
7.2 - 7.5	PAHs met Table 2		

BH403a			
Depth (m)	Parameter	MECP Table 2	Results 09-May-19
3.15 - 3.75	PAHs met Table 2		

BH403b			
Depth (m)	Parameter	MECP Table 2	Results 09-May-19
3.0 - 3.6	PAHs met Table 2		

BH403c			
Depth (m)	Parameter	MECP Table 2	Results 10-May-19
2.25 - 2.85	PAHs met Table 2		

BH407a			
Depth (m)	Parameter	MECP Table 2	Results 13-May-19
3.15 - 3.75	PAHs met Table 2		

BH407b			
Depth (m)	Parameter	MECP Table 2	Results 14-May-19
3.0 - 3.6	PAHs met Table 2		

BH407c			
Depth (m)	Parameter	MECP Table 2	Results 14-May-19
2.25 - 2.85	PAHs met Table 2		

BH405a			
Depth (m)	Parameter	MECP Table 2	Results 10-May-19
2.3 - 3.0	PAHs met Table 2		
6.85 - 7.45	PAHs met Table 2		

BH406a			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	PAHs met Table 2		
3.7 - 4.9	PAHs met Table 2		

BH406b			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	PAHs met Table 2		
3.7 - 4.9	PAHs met Table 2		

BH406c			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	PAHs met Table 2		

BH404a			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	PAHs met Table 2		

BH404b			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
1.2 - 1.7	PAHs met Table 2		

BH404c			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	PAHs met Table 2		

LEGEND:

- G2S Monitoring Well Locations
- Azimuth Well Locations
- Test Pit Locations
- Sand
- Clay
- Silt
- Silty Sand
- Fill
- Asphalt
- Concrete
- Water Table
- Well Screen
- Sample Locations that are below detection Table 2 SCS criteria
- Sample Locations that are above detection Table 2 SCS criteria

Notes:

1. Standards from Table 2 Residential/Parkland/Institutional Property Use, coarse grained soil guidelines.
2. Unless noted otherwise, all values presented within inset tables are reported in µg/g.
3. Bed rock elevation at 124 mbgs.
4. Bedrock contact reported from Oak Ridges Moraine Ground Water Program, 2019
5. Average ground water table displayed from monitoring all on-Site wells on June 5th, 2020.

Not to Scale
5x Vertical Exaggeration

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

PAH and Acid/Base/Neutral Impacts in Soils
Geological Cross Section B-B'

41 & 43 Essa Rd.,
Barrie, ON

DATE ISSUED:	June 2020	Figure No. 25
CREATED BY:	JLM	
PROJECT NO.:	18-175	
REFERENCE:		

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File: C:\Users\jmccartney\AppData\Local\Temp\AcPublish_6756\18-175.dwg Layout: Phil25 Plotscale: 0.5

Section C-C'

C

C'

Elevation (masl)

Distance (m)

BH104 · BH402a,b,c · BH206 · BH403a,b,c · BH308 · BH404a,b,c · BH105

Concrete · Asphalt · Fill · Silty Sand · Sand · Clay

Bedrock Contact @115masl

BH308			
Depth (m)	Parameter	MECP Table 2	Results 24-Oct-18
3.1 - 3.7	Naphthalene	0.6	1.9
	2-and 1-methyl Naphthalene	0.99	3.6

BH404a			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	PAHs met Table 2		

BH404b			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
1.2 - 1.7	PAHs met Table 2		

BH404c			
Depth (m)	Parameter	MECP Table 2	Results 06-Jun-19
2.4 - 3.7	PAHs met Table 2		

BH402a			
Depth (m)	Parameter	MECP Table 2	Results 07-May-19
3.15 - 3.75	PAHs met Table 2		
5.4 - 6.1	PAHs met Table 2		

BH402b			
Depth (m)	Parameter	MECP Table 2	Results 08-May-19
3.0 - 3.6	PAHs met Table 2		

BH402c			
Depth (m)	Parameter	MECP Table 2	Results 08-May-19
3.75 - 4.45	PAHs met Table 2		

BH403a			
Depth (m)	Parameter	MECP Table 2	Results 09-May-19
3.15 - 3.75	PAHs met Table 2		

BH403b			
Depth (m)	Parameter	MECP Table 2	Results 09-May-19
3.0 - 3.6	PAHs met Table 2		

BH403c			
Depth (m)	Parameter	MECP Table 2	Results 10-May-19
2.25 - 2.85	PAHs met Table 2		

LEGEND:

- G2S Monitoring Well Locations
- Azimuth Well Locations
- Test Pit Locations
- Sand
- Clay
- Silt
- Silty Sand
- Fill
- Asphalt
- Concrete
- Water Table
- Well Screen
- Sample Locations that are below detection Table 2 SCS criteria
- Sample Locations that are above detection Table 2 SCS criteria

Notes:

1. Standards from Table 2 Residential/Parkland/Institutional Property Use, coarse grained soil guidelines.
2. Unless noted otherwise, all values presented within inset tables are reported in µg/g.
3. Bed rock elevation at 124 mbgs.
4. Bedrock contact reported from Oak Ridges Moraine Ground Water Program, 2019
5. Average ground water table displayed from monitoring all on-Site wells on June 5th, 2020.

Not to Scale
5x Vertical Exaggeration

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

PAH and Acid/Base/Neutral Impacts in Soils Geological Cross Section C-C'

41 & 43 Essa Rd.,
Barrie, ON

DATE ISSUED:	June 2020	Figure No. 26
CREATED BY:	JLM	
PROJECT NO.:	18-175	
REFERENCE:		

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File: C:\Users\jmccartney\AppData\Local\Temp\AcPublish_6756\18-175.dwg Layout: PH#26 Plotscale: 0.5

Section D-D'

D

D'

Elevation (masl)

Distance (m)

BH103			
Depth (m)	Parameter	MECP Table 2	Results 09-Feb-18
3.75 - 4.45	Naphthalene	0.6	3.0
	2-and 1-methyl Naphthalene	0.99	11
6.0 - 6.6	PAHs met Table 2		

BH204			
Depth (m)	Parameter	MECP Table 2	Results 19-Mar-18
2.4 - 3.6	PAHs met Table 2		

BH205			
Depth (m)	Parameter	MECP Table 2	Results 20-Mar-18
2.4 - 3.6	PAHs met Table 2		

BH401a			
Depth (m)	Parameter	MECP Table 2	Results 06-May-19
3.15 - 3.75	PAHs met Table 2		
5.4 - 6.1	PAHs met Table 2		

BH401b			
Depth (m)	Parameter	MECP Table 2	Results 06-May-19
2.4 - 3.0	PAHs met Table 2		

BH401c			
Depth (m)	Parameter	MECP Table 2	Results 07-May-19
2.3 - 3.0	PAHs met Table 2		

BH402a			
Depth (m)	Parameter	MECP Table 2	Results 07-May-19
3.15 - 3.75	PAHs met Table 2		
5.4 - 6.1	PAHs met Table 2		

BH402b			
Depth (m)	Parameter	MECP Table 2	Results 08-May-19
3.0 - 3.6	PAHs met Table 2		

BH402c			
Depth (m)	Parameter	MECP Table 2	Results 08-May-19
3.75 - 4.45	PAHs met Table 2		

BH206			
Depth (m)	Parameter	MECP Table 2	Results 20-Mar-18
2.4 - 3.6	PAHs met Table 2		

Bedrock Contact @115masl

LEGEND:

- G2S Monitoring Well Locations
- Azimuth Well Locations
- Test Pit Locations
- Sand
- Clay
- Silt
- Silty Sand
- Fill
- Asphalt
- Concrete
- Water Table
- Well Screen
- Sample Locations that are below detection Table 2 SCS criteria
- Sample Locations that are above detection Table 2 SCS criteria

Notes:

1. Standards from Table 2 Residential/Parkland/Institutional Property Use, coarse grained soil guidelines.
2. Unless noted otherwise, all values presented within inset tables are reported in µg/g.
3. Bed rock elevation at 124 mbgs.
4. Bedrock contact reported from Oak Ridges Moraine Ground Water Program, 2019
5. Average ground water table displayed from monitoring all on-Site wells on June 5th, 2020.

Not to Scale
5x Vertical Exaggeration

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

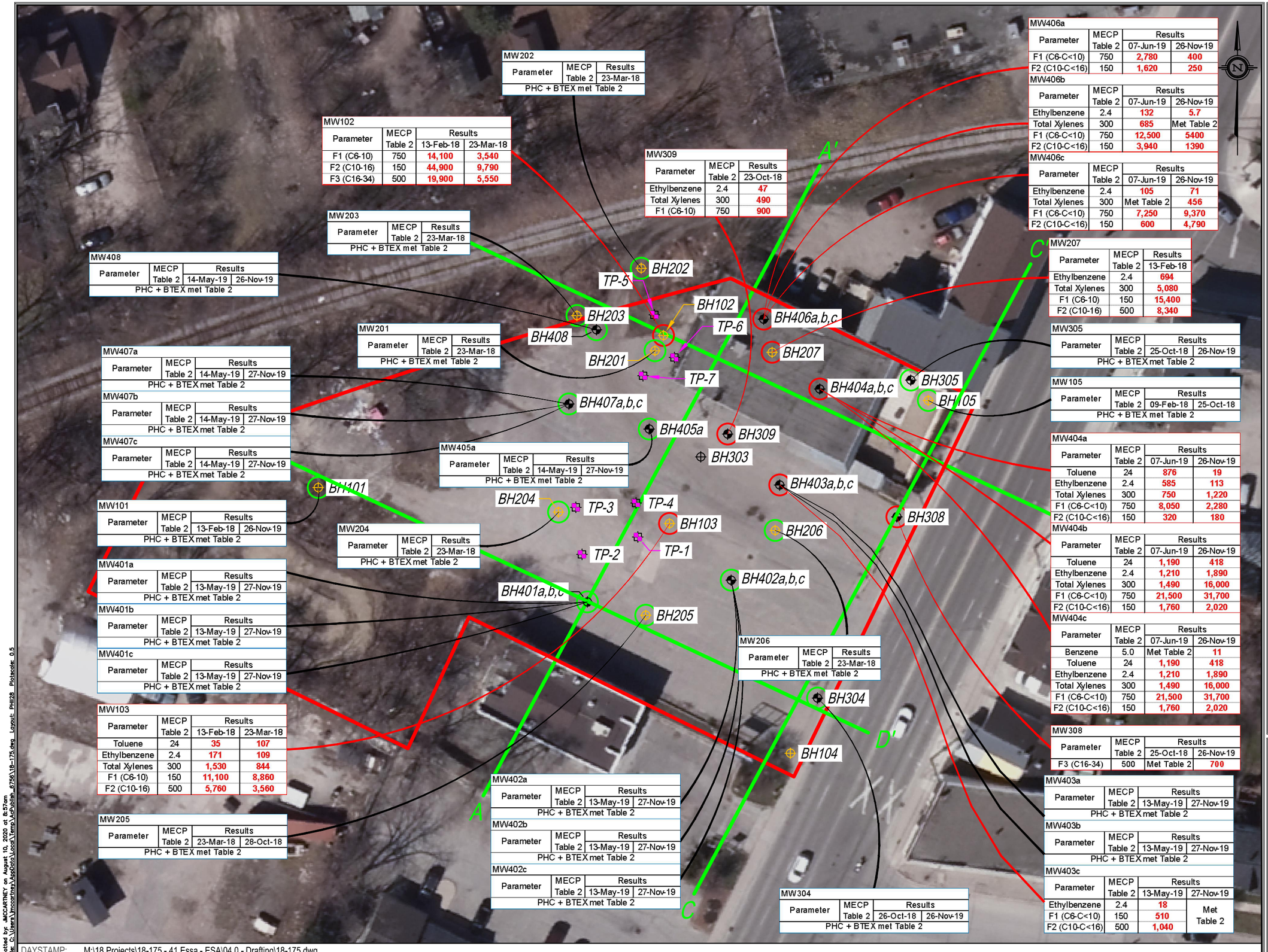
PAH and Acid/Base/Neutral Impacts in Soils
Geological Cross Section D-D'

41 & 43 Essa Rd.,
Barrie, ON

DATE ISSUED:	June 2020	Figure No. 27
CREATED BY:	JLM	
PROJECT NO.:	18-175	
REFERENCE:		

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File: C:\Users\Jmccartney\AppData\Local\Temp\AcPublish_6756\18-175.dwg Layout: PH#27 Plotscale: 0.5



MW102

Parameter	MECP Table 2	Results 13-Feb-18	Results 23-Mar-18
F1 (C6-10)	750	14,100	3,540
F2 (C10-16)	150	44,900	9,790
F3 (C16-34)	500	19,900	5,550

MW202

Parameter	MECP Table 2	Results 23-Mar-18
PHC + BTEX met Table 2		

MW203

Parameter	MECP Table 2	Results 23-Mar-18
PHC + BTEX met Table 2		

MW309

Parameter	MECP Table 2	Results 23-Oct-18
Ethylbenzene	2.4	47
Total Xylenes	300	490
F1 (C6-10)	750	900

MW408

Parameter	MECP Table 2	Results 14-May-19	Results 26-Nov-19
PHC + BTEX met Table 2			

MW201

Parameter	MECP Table 2	Results 23-Mar-18
PHC + BTEX met Table 2		

MW407a

Parameter	MECP Table 2	Results 14-May-19	Results 27-Nov-19
PHC + BTEX met Table 2			

MW407b

Parameter	MECP Table 2	Results 14-May-19	Results 27-Nov-19
PHC + BTEX met Table 2			

MW407c

Parameter	MECP Table 2	Results 14-May-19	Results 27-Nov-19
PHC + BTEX met Table 2			

MW405a

Parameter	MECP Table 2	Results 14-May-19	Results 27-Nov-19
PHC + BTEX met Table 2			

MW101

Parameter	MECP Table 2	Results 13-Feb-18	Results 26-Nov-19
PHC + BTEX met Table 2			

MW204

Parameter	MECP Table 2	Results 23-Mar-18
PHC + BTEX met Table 2		

MW401a

Parameter	MECP Table 2	Results 13-May-19	Results 27-Nov-19
PHC + BTEX met Table 2			

MW401b

Parameter	MECP Table 2	Results 13-May-19	Results 27-Nov-19
PHC + BTEX met Table 2			

MW401c

Parameter	MECP Table 2	Results 13-May-19	Results 27-Nov-19
PHC + BTEX met Table 2			

MW103

Parameter	MECP Table 2	Results 13-Feb-18	Results 23-Mar-18
Toluene	24	35	107
Ethylbenzene	2.4	171	109
Total Xylenes	300	1,530	844
F1 (C6-10)	150	11,100	8,860
F2 (C10-16)	500	5,760	3,560

MW205

Parameter	MECP Table 2	Results 23-Mar-18	Results 28-Oct-18
PHC + BTEX met Table 2			

MW402a

Parameter	MECP Table 2	Results 13-May-19	Results 27-Nov-19
PHC + BTEX met Table 2			

MW402b

Parameter	MECP Table 2	Results 13-May-19	Results 27-Nov-19
PHC + BTEX met Table 2			

MW402c

Parameter	MECP Table 2	Results 13-May-19	Results 27-Nov-19
PHC + BTEX met Table 2			

MW206

Parameter	MECP Table 2	Results 23-Mar-18
PHC + BTEX met Table 2		

MW304

Parameter	MECP Table 2	Results 26-Oct-18	Results 26-Nov-19
PHC + BTEX met Table 2			

MW406a

Parameter	MECP Table 2	Results 07-Jun-19	Results 26-Nov-19
F1 (C6-C<10)	750	2,780	400
F2 (C10-C<16)	150	1,620	250

MW406b

Parameter	MECP Table 2	Results 07-Jun-19	Results 26-Nov-19
Ethylbenzene	2.4	132	5.7
Total Xylenes	300	685	Met Table 2
F1 (C6-C<10)	750	12,500	5400
F2 (C10-C<16)	150	3,940	1390

MW406c

Parameter	MECP Table 2	Results 07-Jun-19	Results 26-Nov-19
Ethylbenzene	2.4	105	71
Total Xylenes	300	Met Table 2	456
F1 (C6-C<10)	750	7,250	9,370
F2 (C10-C<16)	150	600	4,790

MW207

Parameter	MECP Table 2	Results 13-Feb-18
Ethylbenzene	2.4	694
Total Xylenes	300	5,080
F1 (C6-10)	150	15,400
F2 (C10-16)	500	8,340

MW305

Parameter	MECP Table 2	Results 25-Oct-18	Results 26-Nov-19
PHC + BTEX met Table 2			

MW105

Parameter	MECP Table 2	Results 09-Feb-18	Results 25-Oct-18
PHC + BTEX met Table 2			

MW404a

Parameter	MECP Table 2	Results 07-Jun-19	Results 26-Nov-19
Toluene	24	876	19
Ethylbenzene	2.4	585	113
Total Xylenes	300	750	1,220
F1 (C6-C<10)	750	8,050	2,280
F2 (C10-C<16)	150	320	180

MW404b

Parameter	MECP Table 2	Results 07-Jun-19	Results 26-Nov-19
Toluene	24	1,190	418
Ethylbenzene	2.4	1,210	1,890
Total Xylenes	300	1,490	16,000
F1 (C6-C<10)	750	21,500	31,700
F2 (C10-C<16)	150	1,760	2,020

MW404c

Parameter	MECP Table 2	Results 07-Jun-19	Results 26-Nov-19
Benzene	5.0	Met Table 2	11
Toluene	24	1,190	418
Ethylbenzene	2.4	1,210	1,890
Total Xylenes	300	1,490	16,000
F1 (C6-C<10)	750	21,500	31,700
F2 (C10-C<16)	150	1,760	2,020

MW308

Parameter	MECP Table 2	Results 25-Oct-18	Results 26-Nov-19
F3 (C16-34)	500	Met Table 2	700

MW403a

Parameter	MECP Table 2	Results 13-May-19	Results 27-Nov-19
PHC + BTEX met Table 2			

MW403b

Parameter	MECP Table 2	Results 13-May-19	Results 27-Nov-19
PHC + BTEX met Table 2			

MW403c

Parameter	MECP Table 2	Results 13-May-19	Results 27-Nov-19
Ethylbenzene	2.4	18	Met Table 2
F1 (C6-C<10)	150	510	
F2 (C10-C<16)	500	1,040	

LEGEND:

- Approx. Property Boundary
- Cross-Section Locations
- Borehole Locations
- Well Locations
- Test Pit Locations
- G2S Monitoring Well Locations
- Sample Locations that are below detection Table 2 SCS criteria
- Sample Locations that are above detection Table 2 SCS criteria

Note:
Standards from Table 2 Residential/Parkland/Institutional Property Use, coarse grained soil guidelines
Unless noted otherwise, all values presented within inset tables are reported in µg/g.

5m 0 15m

HORIZONTAL SCALE 1:500

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

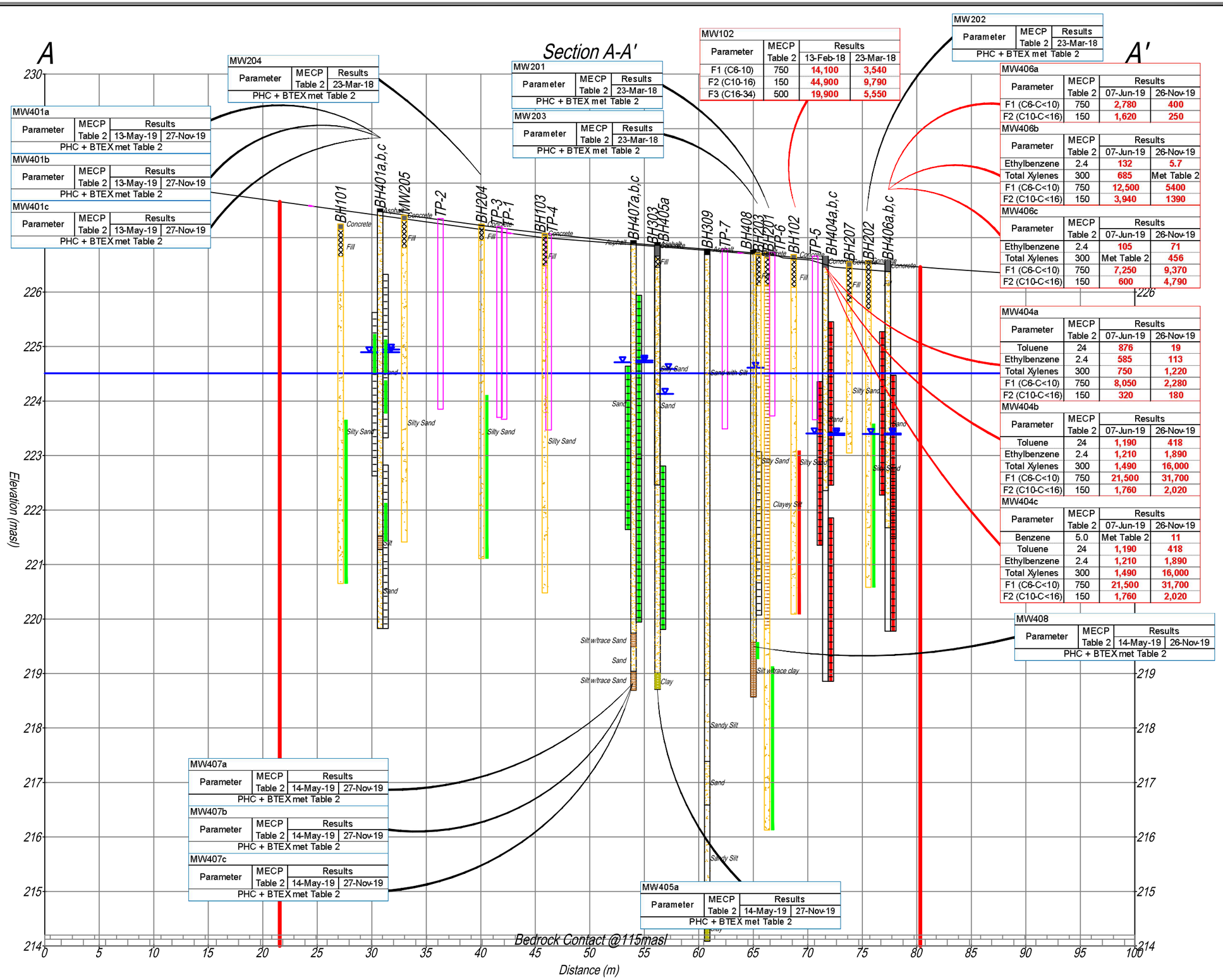
PHC Impacts in Ground Water Plan View

41 & 43 Essa Rd., Barrie, ON

DATE ISSUED:	June 2020	Figure No. 28
CREATED BY:	JLM	
PROJECT NO.:	18-175	
REFERENCE:	Simcoe County Maps	

DAYSTAMP: M:\18 Projects\18-175 - 41 Essa - ESA\04.0 - Drafting\18-175.dwg

Plotted by: JMCCARTNEY on August 10, 2020 at 8:57am
File: C:\Users\jmccartney\AppData\Local\Temp\AcPublish_6756\18-175.dwg Layout: PHI28 Plotscale: 0.5



MW204

Parameter	MECP Table 2	Results 23-Mar-18
PHC + BTEX met Table 2		

MW401a

Parameter	MECP Table 2	Results 13-May-19	Results 27-Nov-19
PHC + BTEX met Table 2			

MW401b

Parameter	MECP Table 2	Results 13-May-19	Results 27-Nov-19
PHC + BTEX met Table 2			

MW401c

Parameter	MECP Table 2	Results 13-May-19	Results 27-Nov-19
PHC + BTEX met Table 2			

MW201

Parameter	MECP Table 2	Results 23-Mar-18
PHC + BTEX met Table 2		

MW203

Parameter	MECP Table 2	Results 23-Mar-18
PHC + BTEX met Table 2		

MW102

Parameter	MECP Table 2	Results 13-Feb-18	Results 23-Mar-18
F1 (C6-10)	750	14,100	3,540
F2 (C10-16)	150	44,900	9,790
F3 (C16-34)	500	19,900	5,550

MW202

Parameter	MECP Table 2	Results 23-Mar-18
PHC + BTEX met Table 2		

MW406a

Parameter	MECP Table 2	Results 07-Jun-19	Results 26-Nov-19
F1 (C6-C<10)	750	2,780	400
F2 (C10-C<16)	150	1,620	250

MW406b

Parameter	MECP Table 2	Results 07-Jun-19	Results 26-Nov-19
Ethylbenzene	2.4	132	5.7
Total Xylenes	300	685	Met Table 2
F1 (C6-C<10)	750	12,500	5400
F2 (C10-C<16)	150	3,940	1390

MW406c

Parameter	MECP Table 2	Results 07-Jun-19	Results 26-Nov-19
Ethylbenzene	2.4	105	71
Total Xylenes	300	Met Table 2	456
F1 (C6-C<10)	750	7,250	9,370
F2 (C10-C<16)	150	600	4,790

MW404a

Parameter	MECP Table 2	Results 07-Jun-19	Results 26-Nov-19
Toluene	24	876	19
Ethylbenzene	2.4	585	113
Total Xylenes	300	750	1,220
F1 (C6-C<10)	750	8,050	2,280
F2 (C10-C<16)	150	320	180

MW404b

Parameter	MECP Table 2	Results 07-Jun-19	Results 26-Nov-19
Toluene	24	1,190	418
Ethylbenzene	2.4	1,210	1,890
Total Xylenes	300	1,490	16,000
F1 (C6-C<10)	750	21,500	31,700
F2 (C10-C<16)	150	1,760	2,020

MW404c

Parameter	MECP Table 2	Results 07-Jun-19	Results 26-Nov-19
Benzene	5.0	Met Table 2	11
Toluene	24	1,190	418
Ethylbenzene	2.4	1,210	1,890
Total Xylenes	300	1,490	16,000
F1 (C6-C<10)	750	21,500	31,700
F2 (C10-C<16)	150	1,760	2,020

MW408

Parameter	MECP Table 2	Results 14-May-19	Results 26-Nov-19
PHC + BTEX met Table 2			

MW407a

Parameter	MECP Table 2	Results 14-May-19	Results 27-Nov-19
PHC + BTEX met Table 2			

MW407b

Parameter	MECP Table 2	Results 14-May-19	Results 27-Nov-19
PHC + BTEX met Table 2			

MW407c

Parameter	MECP Table 2	Results 14-May-19	Results 27-Nov-19
PHC + BTEX met Table 2			

MW405a

Parameter	MECP Table 2	Results 14-May-19	Results 27-Nov-19
PHC + BTEX met Table 2			

LEGEND:

- G2S Monitoring Well Locations
- Azimuth Well Locations
- Test Pit Locations
- Sand
- Clay
- Silt
- Silty Sand
- Fill
- Asphalt
- Concrete
- Water Table
- Well Screen
- Sample Locations that are below detection Table 2 SCS criteria
- Sample Locations that are above detection Table 2 SCS criteria

Notes:

1. Standards from Table 2 Residential/Parkland/Institutional Property Use, coarse grained soil guidelines.
2. Unless noted otherwise, all values presented within inset tables are reported in µg/g.
3. Bed rock elevation at 124 mbgs.
4. Bedrock contact reported from Oak Ridges Moraine Ground Water Program, 2019
5. Average ground water table displayed from monitoring all on-Site wells on June 5th, 2020.

Not to Scale
5x Vertical Exaggeration

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

PHC Impacts in Ground Water
Geological Cross Section A-A'

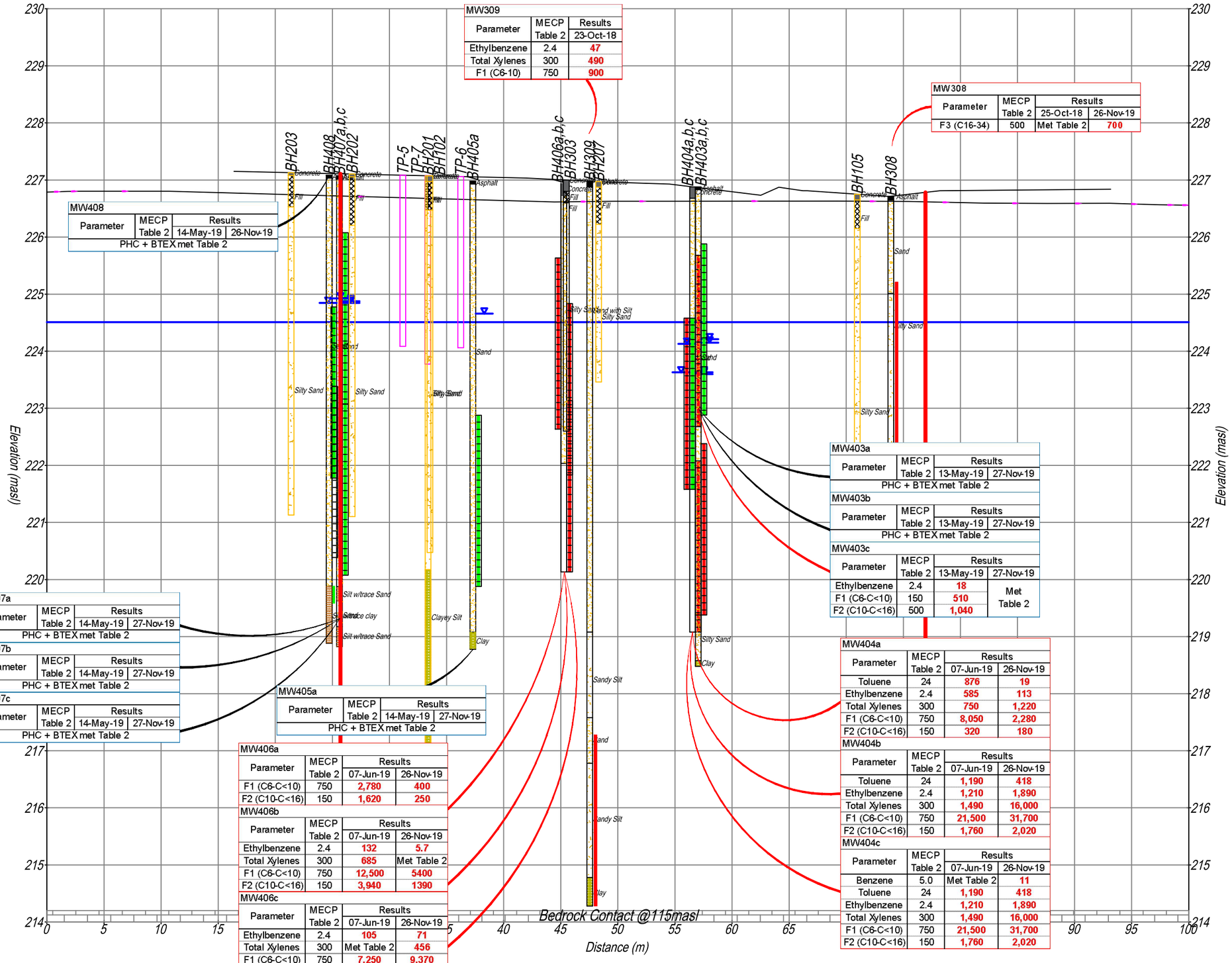
41 & 43 Essa Rd.,
Barrie, ON

DATE ISSUED:	June 2020	Figure No. 28
CREATED BY:	JLM	
PROJECT NO.:	18-175	
REFERENCE:		

DAYSTAMP: M:\18 Projects\18-175 - 41 Essa - ESA\04.0 - Drafting\18-175.dwg

Plotted by: JMCCARTNEY on August 10, 2020 at 8:57am
File: C:\Users\jmccartney\AppData\Local\Temp\AcPublish_6756\18--175.dwg Layout: PHII29 Plotscale: 0.5

Section B-B'



MW309

Parameter	MECP Table 2	Results 23-Oct-18
Ethylbenzene	2.4	47
Total Xylenes	300	490
F1 (C6-10)	750	900

MW308

Parameter	MECP Table 2	Results 25-Oct-18	Results 26-Nov-19
F3 (C16-34)	500	Met Table 2	700

MW408

Parameter	MECP Table 2	Results 14-May-19	Results 26-Nov-19
PHC + BTEX met Table 2			

MW403a

Parameter	MECP Table 2	Results 13-May-19	Results 27-Nov-19
PHC + BTEX met Table 2			

MW403b

Parameter	MECP Table 2	Results 13-May-19	Results 27-Nov-19
PHC + BTEX met Table 2			

MW403c

Parameter	MECP Table 2	Results 13-May-19	Results 27-Nov-19
Ethylbenzene	2.4	18	Met Table 2
F1 (C6-C<10)	150	510	
F2 (C10-C<16)	500	1,040	

MW404a

Parameter	MECP Table 2	Results 07-Jun-19	Results 26-Nov-19
Toluene	24	876	19
Ethylbenzene	2.4	585	113
Total Xylenes	300	750	1,220
F1 (C6-C<10)	750	8,050	2,280
F2 (C10-C<16)	150	320	180

MW404b

Parameter	MECP Table 2	Results 07-Jun-19	Results 26-Nov-19
Toluene	24	1,190	418
Ethylbenzene	2.4	1,210	1,890
Total Xylenes	300	1,490	16,000
F1 (C6-C<10)	750	21,500	31,700
F2 (C10-C<16)	150	1,760	2,020

MW404c

Parameter	MECP Table 2	Results 07-Jun-19	Results 26-Nov-19
Benzene	5.0	Met Table 2	11
Toluene	24	1,190	418
Ethylbenzene	2.4	1,210	1,890
Total Xylenes	300	1,490	16,000
F1 (C6-C<10)	750	21,500	31,700
F2 (C10-C<16)	150	1,760	2,020

MW407a

Parameter	MECP Table 2	Results 14-May-19	Results 27-Nov-19
PHC + BTEX met Table 2			

MW407b

Parameter	MECP Table 2	Results 14-May-19	Results 27-Nov-19
PHC + BTEX met Table 2			

MW407c

Parameter	MECP Table 2	Results 14-May-19	Results 27-Nov-19
PHC + BTEX met Table 2			

MW405a

Parameter	MECP Table 2	Results 14-May-19	Results 27-Nov-19
PHC + BTEX met Table 2			

MW406a

Parameter	MECP Table 2	Results 07-Jun-19	Results 26-Nov-19
F1 (C6-C<10)	750	2,780	400
F2 (C10-C<16)	150	1,620	250

MW406b

Parameter	MECP Table 2	Results 07-Jun-19	Results 26-Nov-19
Ethylbenzene	2.4	132	5.7
Total Xylenes	300	685	Met Table 2
F1 (C6-C<10)	750	12,500	5400
F2 (C10-C<16)	150	3,940	1390

MW406c

Parameter	MECP Table 2	Results 07-Jun-19	Results 26-Nov-19
Ethylbenzene	2.4	105	71
Total Xylenes	300	Met Table 2	456
F1 (C6-C<10)	750	7,250	9,370
F2 (C10-C<16)	150	600	4,790

LEGEND:

- G2S Monitoring Well Locations
- Azimuth Well Locations
- Test Pit Locations
- Sand
- Clay
- Silt
- Silty Sand
- Fill
- Asphalt
- Concrete
- Water Table
- Well Screen
- Sample Locations that are below detection Table 2 SCS criteria
- Sample Locations that are above detection Table 2 SCS criteria

Notes:

1. Standards from Table 2 Residential/Parkland/Institutional Property Use, coarse grained soil guidelines.
2. Unless noted otherwise, all values presented within inset tables are reported in µg/g.
3. Bed rock elevation at 124 mbgs.
4. Bedrock contact reported from Oak Ridges Moraine Ground Water Program, 2019
5. Average ground water table displayed from monitoring all on-Site wells on June 5th, 2020.

Not to Scale
5x Vertical Exaggeration

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

PHC Impacts in Ground Water
Geological Cross Section B-B'

41 & 43 Essa Rd.,
Barrie, ON

DATE ISSUED:	June 2020	Figure No. 30
CREATED BY:	JLM	
PROJECT NO.:	18-175	
REFERENCE:		

DAYSTAMP: M:\18 Projects\18-175 - 41 Essa - ESA\04.0 - Drafting\18-175.dwg

Plotted by: JMCCARTNEY on August 10, 2020 at 8:57am
File: C:\Users\jmccartney\AppData\Local\Temp\AcPublish_6756\18-175.dwg Layout: PH#30 Plotscale: 0.5

Section C-C'

C

C'

Elevation (masl)

Distance (m)

BH104 BH402a,b,c BH206 BH403a,b,c BH308 BH404a,b,c BH105

Concrete
Asphalt
Fill
Sand
Silty Sand
Clay
Bedrock Contact @115masl

MW105			
Parameter	MECP	Results	
	Table 2	09-Feb-18	25-Oct-18
PHC + BTEX met Table 2			

MW404a			
Parameter	MECP	Results	
	Table 2	07-Jun-19	26-Nov-19
Toluene	24	876	19
Ethylbenzene	2.4	585	113
Total Xylenes	300	750	1,220
F1 (C6-C<10)	750	8,050	2,280
F2 (C10-C<16)	150	320	180

MW404b			
Parameter	MECP	Results	
	Table 2	07-Jun-19	26-Nov-19
Toluene	24	1,190	418
Ethylbenzene	2.4	1,210	1,890
Total Xylenes	300	1,490	16,000
F1 (C6-C<10)	750	21,500	31,700
F2 (C10-C<16)	150	1,760	2,020

MW404c			
Parameter	MECP	Results	
	Table 2	07-Jun-19	26-Nov-19
Benzene	5.0	Met Table 2	11
Toluene	24	1,190	418
Ethylbenzene	2.4	1,210	1,890
Total Xylenes	300	1,490	16,000
F1 (C6-C<10)	750	21,500	31,700
F2 (C10-C<16)	150	1,760	2,020

MW402a			
Parameter	MECP	Results	
	Table 2	13-May-19	27-Nov-19
PHC + BTEX met Table 2			

MW402b			
Parameter	MECP	Results	
	Table 2	13-May-19	27-Nov-19
PHC + BTEX met Table 2			

MW402c			
Parameter	MECP	Results	
	Table 2	13-May-19	27-Nov-19
PHC + BTEX met Table 2			

MW403a			
Parameter	MECP	Results	
	Table 2	13-May-19	27-Nov-19
PHC + BTEX met Table 2			

MW403b			
Parameter	MECP	Results	
	Table 2	13-May-19	27-Nov-19
PHC + BTEX met Table 2			

MW403c			
Parameter	MECP	Results	
	Table 2	13-May-19	27-Nov-19
Ethylbenzene	2.4	18	Met Table 2
F1 (C6-C<10)	150	510	
F2 (C10-C<16)	500	1,040	

LEGEND:

- G2S Monitoring Well Locations
- Azimuth Well Locations
- Test Pit Locations
- Sand
- Clay
- Silt
- Silty Sand
- Fill
- Asphalt
- Concrete
- Water Table
- Well Screen
- Sample Locations that are below detection Table 2 SCS criteria
- Sample Locations that are above detection Table 2 SCS criteria

Notes:

1. Standards from Table 2 Residential/Parkland/Institutional Property Use, coarse grained soil guidelines.
2. Unless noted otherwise, all values presented within inset tables are reported in µg/g.
3. Bed rock elevation at 124 mbgs.
4. Bedrock contact reported from Oak Ridges Moraine Ground Water Program, 2019
5. Average ground water table displayed from monitoring all on-Site wells on June 5th, 2020.

Not to Scale
5x Vertical Exaggeration

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

PHC Impacts in Ground Water
Geological Cross Section C-C'

41 & 43 Essa Rd.,
Barrie, ON

DATE ISSUED:	June 2020	Figure No.
CREATED BY:	JLM	31
PROJECT NO.:	18-175	
REFERENCE:		

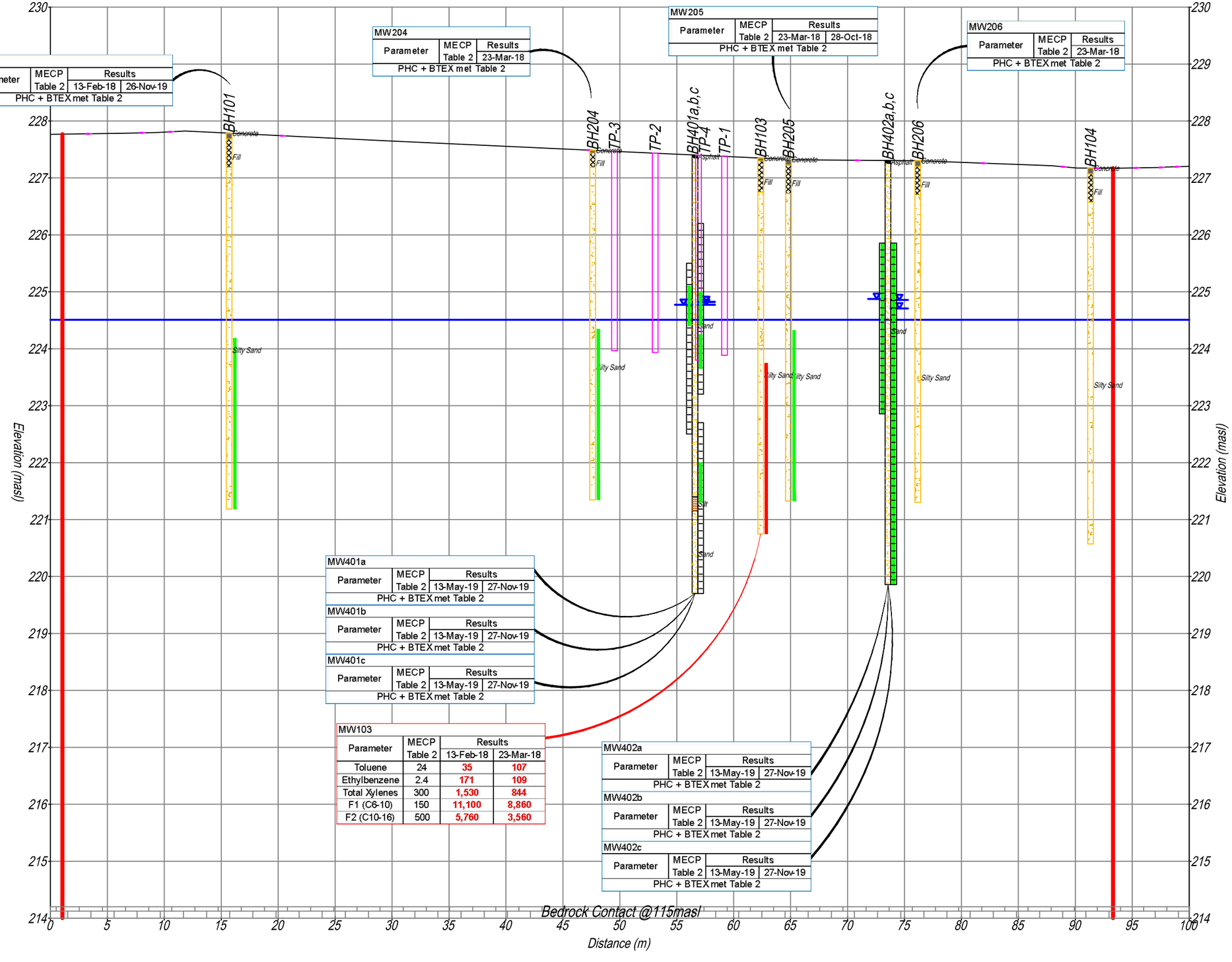
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Plotted by: JMCCARTNEY on August 10, 2020 at 8:57am
File: C:\Users\jmccartney\AppData\Local\Temp\AcePublish_6756\18-175.dwg Layout: PH#31 Plotscale: 0.5

Section D-D'

D

D'



MW101			
Parameter	MECP	Results	
	Table 2	13-Feb-18	26-Nov-19
PHC + BTEX met Table 2			

MW204		
Parameter	MECP	Results
	Table 2	23-Mar-18
PHC + BTEX met Table 2		

MW205			
Parameter	MECP	Results	
	Table 2	23-Mar-18	28-Oct-18
PHC + BTEX met Table 2			

MW206		
Parameter	MECP	Results
	Table 2	23-Mar-18
PHC + BTEX met Table 2		

MW401a			
Parameter	MECP	Results	
	Table 2	13-May-19	27-Nov-19
PHC + BTEX met Table 2			

MW401b			
Parameter	MECP	Results	
	Table 2	13-May-19	27-Nov-19
PHC + BTEX met Table 2			

MW401c			
Parameter	MECP	Results	
	Table 2	13-May-19	27-Nov-19
PHC + BTEX met Table 2			

MW103			
Parameter	MECP	Results	
	Table 2	13-Feb-18	23-Mar-18
Toluene	24	35	107
Ethylbenzene	2.4	171	109
Total Xylenes	300	1,530	844
F1 (C6-10)	150	11,100	8,860
F2 (C10-16)	500	5,760	3,560

MW402a			
Parameter	MECP	Results	
	Table 2	13-May-19	27-Nov-19
PHC + BTEX met Table 2			

MW402b			
Parameter	MECP	Results	
	Table 2	13-May-19	27-Nov-19
PHC + BTEX met Table 2			

MW402c			
Parameter	MECP	Results	
	Table 2	13-May-19	27-Nov-19
PHC + BTEX met Table 2			

LEGEND:

- G2S Monitoring Well Locations
- Azimuth Well Locations
- Test Pit Locations
- Sand
- Clay
- Silt
- Silty Sand
- Fill
- Asphalt
- Concrete
- Water Table
- Well Screen
- Sample Locations that are below detection Table 2 SCS criteria
- Sample Locations that are above detection Table 2 SCS criteria

Notes:

1. Standards from Table 2 Residential/Parkland/Institutional Property Use, coarse grained soil guidelines.
2. Unless noted otherwise, all values presented within inset tables are reported in µg/g.
3. Bed rock elevation at 124 mbgs.
4. Bedrock contact reported from Oak Ridges Moraine Ground Water Program, 2019
5. Average ground water table displayed from monitoring all on-Site wells on June 5th, 2020.

Not to Scale
5x Vertical Exaggeration

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

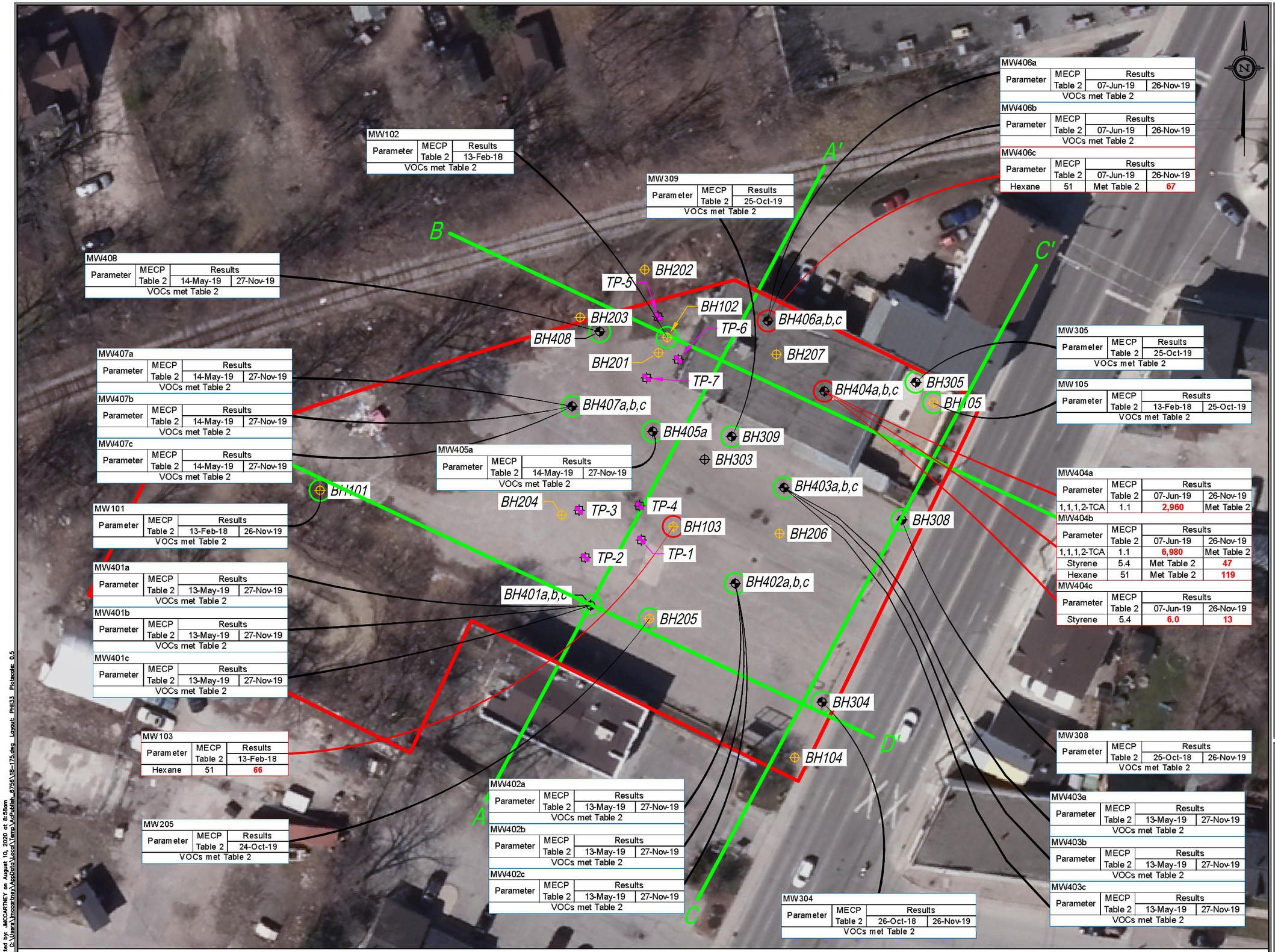
PHC Impacts in Ground Water
Geological Cross Section D-D'

41 & 43 Essa Rd.,
Barrie, ON

DATE ISSUED:	June 2020	Figure No.
CREATED BY:	JLM	32
PROJECT NO.:	18-175	
REFERENCE:		

DAYSTAMP: M:\18 Projects\18-175 - 41 Essa - ESA\04.0 - Drafting\18-175.dwg

Plotted by: JMCCARTNEY on August 10, 2020 at 8:57am
File: C:\Users\jmccartney\AppData\Local\Temp\AcPublish_6756\18--175.dwg Layout: PHIL32 Plotscale: 0.5



LEGEND:

- Approx. Property Boundary
- Cross-Section Locations
- Borehole Locations
- Well Locations
- Test Pit Locations
- G2S Monitoring Well Locations
- Sample Locations that are below detection Table 2 SCS criteria
- Sample Locations that are above detection Table 2 SCS criteria

Note:
Standards from Table 2 Residential/Parkland/Institutional Property Use, coarse grained soil guidelines
Unless noted otherwise, all values presented within inset tables are reported in µg/g.

5m 0 15m
HORIZONTAL SCALE 1:500

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

VOC Impacts in Ground Water Plan View

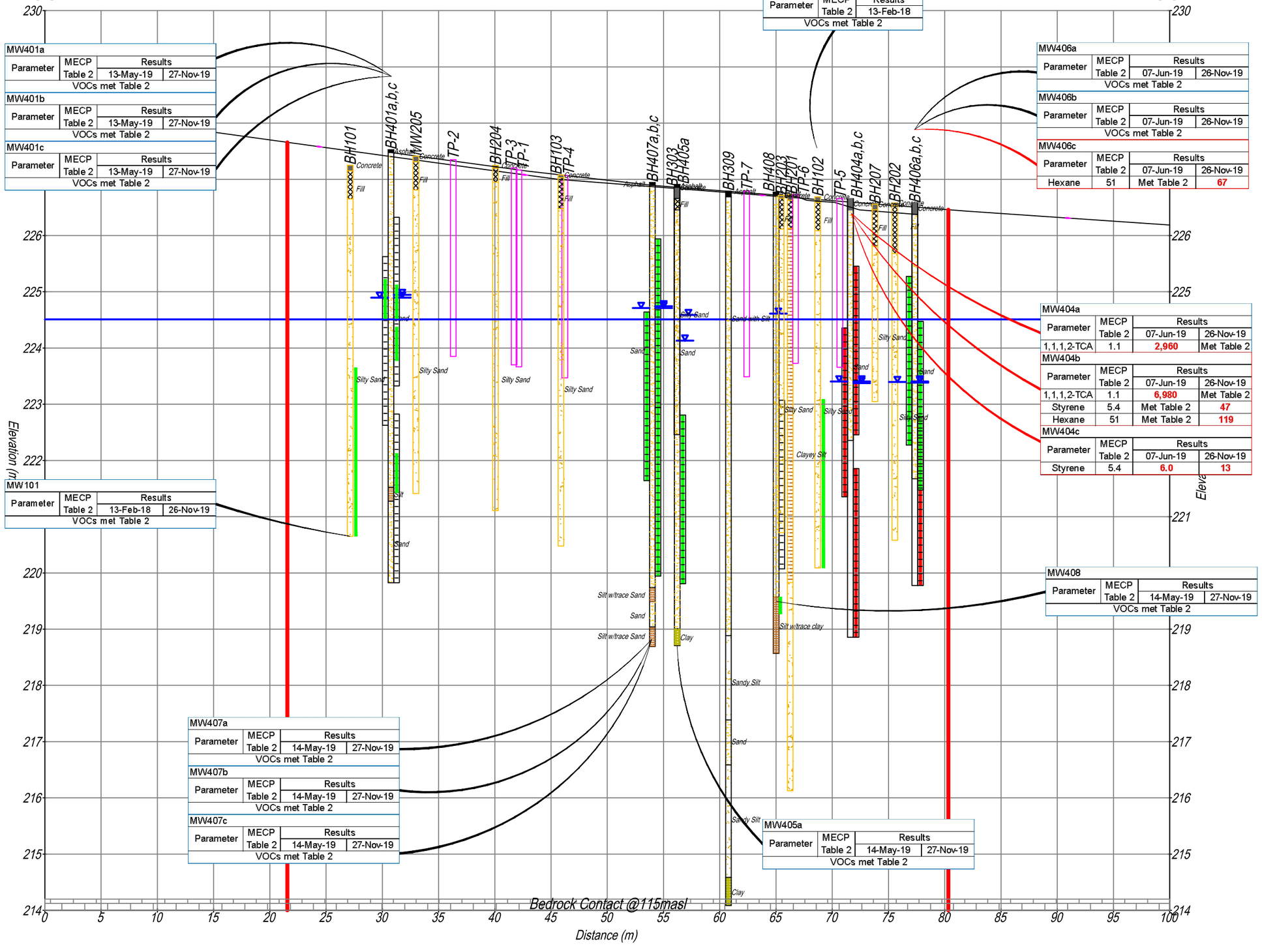
41 & 43 Essa Rd.,
Barrie, ON

DATE ISSUED:	June 2020	Figure No. 33
CREATED BY:	JLM	
PROJECT NO.:	18-175	
REFERENCE:	Simcoe County Maps	

DAYSTAMP: M:\18 Projects\18-175 - 41 Essa - ESA\04.0 - Drafting\18-175.dwg

Plotted by: JMCCARTNEY on August 10, 2020 at 8:58am
File: C:\Users\jmccartney\AppData\Local\Temp\AcPublish_6756\18-175.dwg Layout: PH#33 Plotscale: 0.5

Section A-A'



MW401a

Parameter	MECP Table 2	Results 13-May-19	Results 27-Nov-19
VOCs met Table 2			

MW401b

Parameter	MECP Table 2	Results 13-May-19	Results 27-Nov-19
VOCs met Table 2			

MW401c

Parameter	MECP Table 2	Results 13-May-19	Results 27-Nov-19
VOCs met Table 2			

MW102

Parameter	MECP Table 2	Results 13-Feb-18
VOCs met Table 2		

MW406a

Parameter	MECP Table 2	Results 07-Jun-19	Results 26-Nov-19
VOCs met Table 2			

MW406b

Parameter	MECP Table 2	Results 07-Jun-19	Results 26-Nov-19
VOCs met Table 2			

MW406c

Parameter	MECP Table 2	Results 07-Jun-19	Results 26-Nov-19
Hexane	51	Met Table 2	67

MW404a

Parameter	MECP Table 2	Results 07-Jun-19	Results 26-Nov-19
1,1,1,2-TCA	1.1	2,960	Met Table 2

MW404b

Parameter	MECP Table 2	Results 07-Jun-19	Results 26-Nov-19
1,1,1,2-TCA	1.1	6,980	Met Table 2
Styrene	5.4	Met Table 2	47
Hexane	51	Met Table 2	119

MW404c

Parameter	MECP Table 2	Results 07-Jun-19	Results 26-Nov-19
Styrene	5.4	6.0	13

MW101

Parameter	MECP Table 2	Results 13-Feb-18	Results 26-Nov-19
VOCs met Table 2			

MW408

Parameter	MECP Table 2	Results 14-May-19	Results 27-Nov-19
VOCs met Table 2			

MW407a

Parameter	MECP Table 2	Results 14-May-19	Results 27-Nov-19
VOCs met Table 2			

MW407b

Parameter	MECP Table 2	Results 14-May-19	Results 27-Nov-19
VOCs met Table 2			

MW407c

Parameter	MECP Table 2	Results 14-May-19	Results 27-Nov-19
VOCs met Table 2			

MW405a

Parameter	MECP Table 2	Results 14-May-19	Results 27-Nov-19
VOCs met Table 2			

LEGEND:

- G2S Monitoring Well Locations
- Azimuth Well Locations
- Test Pit Locations
- Sand
- Clay
- Silt
- Silty Sand
- Fill
- Asphalt
- Concrete
- Water Table
- Well Screen
- Sample Locations that are below detection Table 2 SCS criteria
- Sample Locations that are above detection Table 2 SCS criteria

Notes:

1. Standards from Table 2 Residential/Parkland/Institutional Property Use, coarse grained soil guidelines.
2. Unless noted otherwise, all values presented within inset tables are reported in µg/g.
3. Bed rock elevation at 124 mbgs.
4. Bedrock contact reported from Oak Ridges Moraine Ground Water Program, 2019
5. Average ground water table displayed from monitoring all on-Site wells on June 5th, 2020.

Not to Scale
5x Vertical Exaggeration

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

VOC Impacts in Ground Water
Geological Cross Section A-A'

41 & 43 Essa Rd.,
Barrie, ON

DATE ISSUED:	June 2020	Figure No. 34
CREATED BY:	JLM	
PROJECT NO.:	18-175	
REFERENCE:		

DAYSTAMP: M:\18 Projects\18-175 - 41 Essa - ESA\04.0 - Drafting\18-175.dwg

Plotted by: JMCCARTNEY on August 10, 2020 at 8:58am
File: C:\Users\jmccartney\AppData\Local\Temp\AcPublish_6756\18-175.dwg Layout: PH#34 Plotscale: 0.5

Section B-B'

B

B'

Elevation (masl)

Distance (m)

MW102

Parameter	MECP Table 2	Results 13-Feb-18
VOCs met Table 2		

MW309

Parameter	MECP Table 2	Results 25-Oct-19
VOCs met Table 2		

MW105

Parameter	MECP Table 2	Results 13-Feb-18	Results 25-Oct-19
VOCs met Table 2			

MW308

Parameter	MECP Table 2	Results 25-Oct-18	Results 26-Nov-19
VOCs met Table 2			

MW408

Parameter	MECP Table 2	Results 14-May-19	Results 27-Nov-19
VOCs met Table 2			

MW403a

Parameter	MECP Table 2	Results 13-May-19	Results 27-Nov-19
VOCs met Table 2			

MW403b

Parameter	MECP Table 2	Results 13-May-19	Results 27-Nov-19
VOCs met Table 2			

MW403c

Parameter	MECP Table 2	Results 13-May-19	Results 27-Nov-19
VOCs met Table 2			

MW407a

Parameter	MECP Table 2	Results 14-May-19	Results 27-Nov-19
VOCs met Table 2			

MW407b

Parameter	MECP Table 2	Results 14-May-19	Results 27-Nov-19
VOCs met Table 2			

MW407c

Parameter	MECP Table 2	Results 14-May-19	Results 27-Nov-19
VOCs met Table 2			

MW405a

Parameter	MECP Table 2	Results 14-May-19	Results 27-Nov-19
VOCs met Table 2			

MW406a

Parameter	MECP Table 2	Results 07-Jun-19	Results 26-Nov-19
VOCs met Table 2			

MW406b

Parameter	MECP Table 2	Results 07-Jun-19	Results 26-Nov-19
VOCs met Table 2			

MW406c

Parameter	MECP Table 2	Results 07-Jun-19	Results 26-Nov-19
Hexane	51	Met Table 2	67

MW404a

Parameter	MECP Table 2	Results 07-Jun-19	Results 26-Nov-19
1,1,1,2-TCA	1.1	2,960	Met Table 2

MW404b

Parameter	MECP Table 2	Results 07-Jun-19	Results 26-Nov-19
1,1,1,2-TCA	1.1	6,980	Met Table 2
Styrene	5.4	Met Table 2	47
Hexane	51	Met Table 2	119

MW404c

Parameter	MECP Table 2	Results 07-Jun-19	Results 26-Nov-19
Styrene	5.4	6.0	13

Bedrock Contact @115masl

LEGEND:

- G2S Monitoring Well Locations
- Azimuth Well Locations
- Test Pit Locations
- Sand
- Clay
- Silt
- Silty Sand
- Fill
- Asphalt
- Concrete
- Water Table
- Well Screen
- Sample Locations that are below detection Table 2 SCS criteria
- Sample Locations that are above detection Table 2 SCS criteria

Notes:

1. Standards from Table 2 Residential/Parkland/Institutional Property Use, coarse grained soil guidelines.
2. Unless noted otherwise, all values presented within inset tables are reported in µg/g.
3. Bed rock elevation at 124 mbgs.
4. Bedrock contact reported from Oak Ridges Moraine Ground Water Program, 2019
5. Average ground water table displayed from monitoring all on-Site wells on June 5th, 2020.

Not to Scale
5x Vertical Exaggeration

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

VOC Impacts in Ground Water
Geological Cross Section B-B'

41 & 43 Essa Rd.,
Barrie, ON

DATE ISSUED:	June 2020	Figure No. 35
CREATED BY:	JLM	
PROJECT NO.:	18-175	
REFERENCE:		

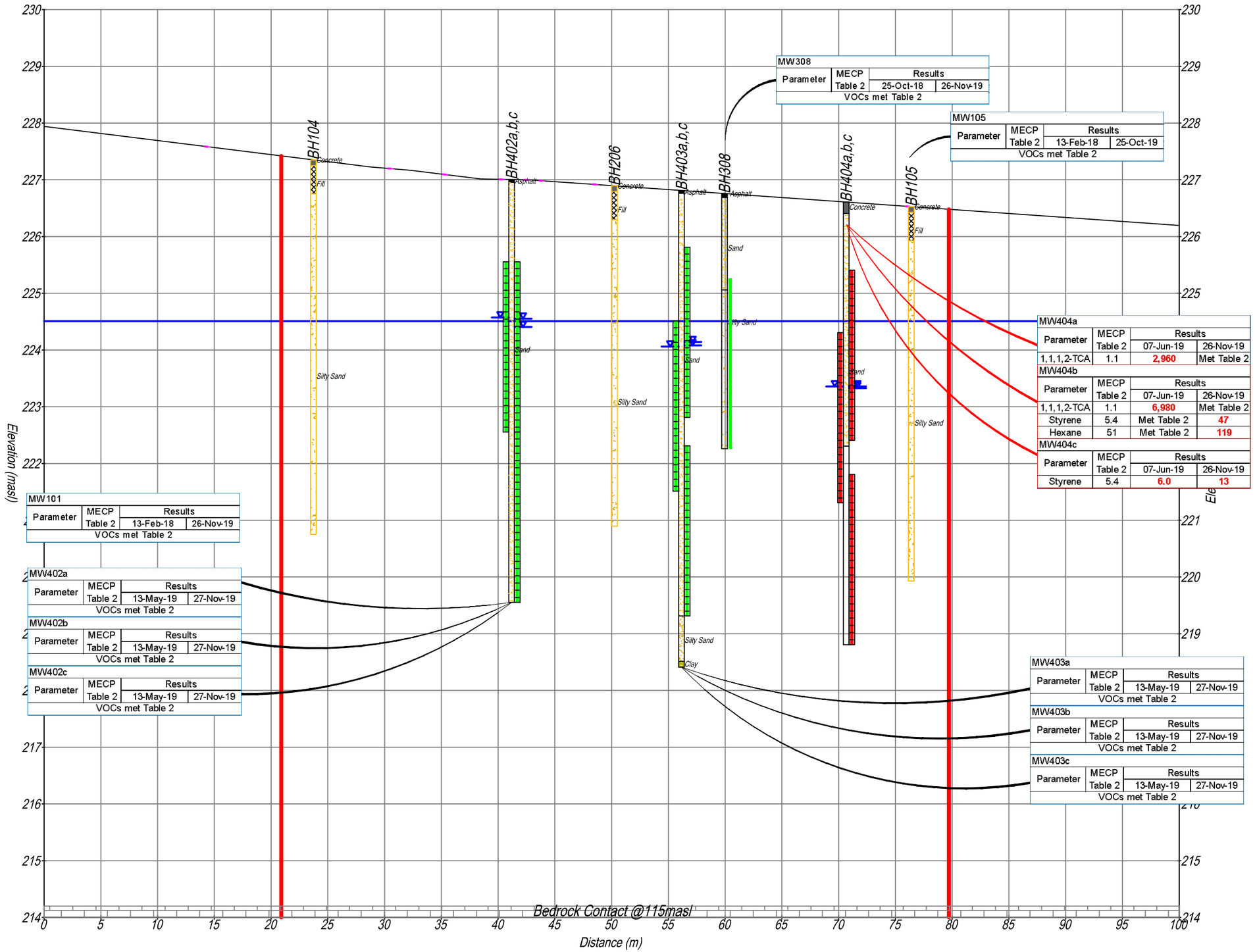
DAYSTAMP: M:\18 Projects\18-175 - 41 Essa - ESA\04.0 - Drafting\18-175.dwg

Plotted by: JMCCARTNEY on August 10, 2020 at 8:58am
File: C:\Users\jmccartney\AppData\Local\Temp\AcPublish_6756\18-175.dwg Layout: PH#35 Plotscale: 0.5

Section C-C'

C

C'



MW308			
Parameter	MECP Table 2	Results 25-Oct-18	Results 26-Nov-19
VOCs met Table 2			

MW105			
Parameter	MECP Table 2	Results 13-Feb-18	Results 25-Oct-19
VOCs met Table 2			

MW404a			
Parameter	MECP Table 2	Results 07-Jun-19	Results 26-Nov-19
1,1,1,2-TCA	1.1	2,960	Met Table 2

MW404b			
Parameter	MECP Table 2	Results 07-Jun-19	Results 26-Nov-19
1,1,1,2-TCA	1.1	6,980	Met Table 2
Styrene	5.4	Met Table 2	47
Hexane	51	Met Table 2	119

MW404c			
Parameter	MECP Table 2	Results 07-Jun-19	Results 26-Nov-19
Styrene	5.4	6.0	13

MW101			
Parameter	MECP Table 2	Results 13-Feb-18	Results 26-Nov-19
VOCs met Table 2			

MW402a			
Parameter	MECP Table 2	Results 13-May-19	Results 27-Nov-19
VOCs met Table 2			

MW402b			
Parameter	MECP Table 2	Results 13-May-19	Results 27-Nov-19
VOCs met Table 2			

MW402c			
Parameter	MECP Table 2	Results 13-May-19	Results 27-Nov-19
VOCs met Table 2			

MW403a			
Parameter	MECP Table 2	Results 13-May-19	Results 27-Nov-19
VOCs met Table 2			

MW403b			
Parameter	MECP Table 2	Results 13-May-19	Results 27-Nov-19
VOCs met Table 2			

MW403c			
Parameter	MECP Table 2	Results 13-May-19	Results 27-Nov-19
VOCs met Table 2			

LEGEND:

- G2S Monitoring Well Locations
- Azimuth Well Locations
- Test Pit Locations
- Sand
- Clay
- Silt
- Silty Sand
- Fill
- Asphalt
- Concrete
- Water Table
- Well Screen
- Sample Locations that are below detection Table 2 SCS criteria
- Sample Locations that are above detection Table 2 SCS criteria

Notes:

1. Standards from Table 2 Residential/Parkland/Institutional Property Use, coarse grained soil guidelines.
2. Unless noted otherwise, all values presented within inset tables are reported in µg/g.
3. Bed rock elevation at 124 mbgs.
4. Bedrock contact reported from Oak Ridges Moraine Ground Water Program, 2019
5. Average ground water table displayed from monitoring all on-Site wells on June 5th, 2020.

Not to Scale
5x Vertical Exaggeration

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

VOC Impacts in Ground Water
Geological Cross Section C-C'

41 & 43 Essa Rd.,
Barrie, ON

DATE ISSUED:	June 2020	Figure No. 36
CREATED BY:	JLM	
PROJECT NO.:	18-175	
REFERENCE:		

DAYSTAMP: M:\18 Projects\18-175 - 41 Essa - ESA\04.0 - Drafting\18-175.dwg

Plotted by: JMCCARTNEY on August 10, 2020 at 8:58am
File: C:\Users\jmccartney\AppData\Local\Temp\AcPublish_6756\18-175.dwg Layout: PH36 Plotscale: 0.5

Section D-D'

D

D'

MW101			
Parameter	MECP Table 2	Results	
		13-Feb-18	26-Nov-19
VOCs met Table 2			

MW103		
Parameter	MECP Table 2	Results 13-Feb-18
Hexane	51	66

MW205		
Parameter	MECP Table 2	Results 24-Oct-19
VOCs met Table 2		

MW401a			
Parameter	MECP Table 2	Results	
		13-May-19	27-Nov-19
VOCs met Table 2			

MW401b			
Parameter	MECP Table 2	Results	
		13-May-19	27-Nov-19
VOCs met Table 2			

MW401c			
Parameter	MECP Table 2	Results	
		13-May-19	27-Nov-19
VOCs met Table 2			

MW402a			
Parameter	MECP Table 2	Results	
		13-May-19	27-Nov-19
VOCs met Table 2			

MW402b			
Parameter	MECP Table 2	Results	
		13-May-19	27-Nov-19
VOCs met Table 2			

MW402c			
Parameter	MECP Table 2	Results	
		13-May-19	27-Nov-19
VOCs met Table 2			

Bedrock Contact @115masl

Elevation (masl)

Distance (m)

LEGEND:

- G2S Monitoring Well Locations
- Azimuth Well Locations
- Test Pit Locations
- Sand
- Clay
- Silt
- Silty Sand
- Fill
- Asphalt
- Concrete
- Water Table
- Well Screen
- Sample Locations that are below detection Table 2 SCS criteria
- Sample Locations that are above detection Table 2 SCS criteria

Notes:

1. Standards from Table 2 Residential/Parkland/Institutional Property Use, coarse grained soil guidelines.
2. Unless noted otherwise, all values presented within inset tables are reported in µg/g.
3. Bed rock elevation at 124 mbgs.
4. Bedrock contact reported from Oak Ridges Moraine Ground Water Program, 2019
5. Average ground water table displayed from monitoring all on-Site wells on June 5th, 2020.

Not to Scale
5x Vertical Exaggeration

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

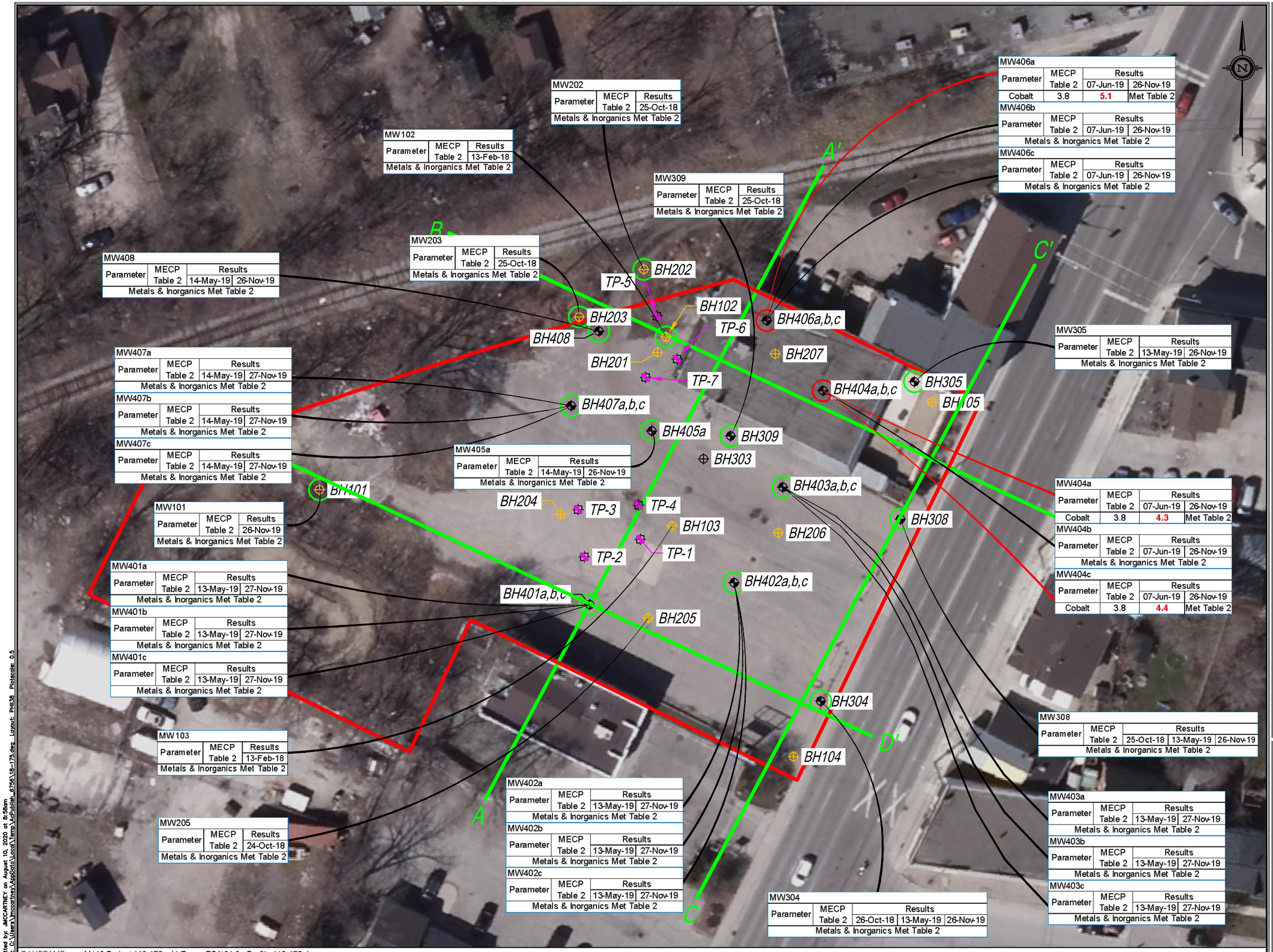
VOC Impacts in Ground Water
Geological Cross Section D-D'

41 & 43 Essa Rd.,
Barrie, ON

DATE ISSUED:	June 2020	Figure No. 37
CREATED BY:	JLM	
PROJECT NO.:	18-175	
REFERENCE:		

DAYSTAMP: M:\18 Projects\18-175 - 41 Essa - ESA\04.0 - Drafting\18-175.dwg

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File: C:\Users\jmccartney\AppData\Local\Temp\AcPublish_6756\18-175.dwg Layout: PHII37 Plotscale: 0.5



LEGEND:

- *Approx. Property Boundary*
- *Cross-Section Locations*
- *Borehole Locations*
- *Well Locations*
- *Test Pit Locations*
- *G2S Monitoring Well Locations*
- *Sample Locations that are below detection Table 2 SCS criteria*
- *Sample Locations that are above detection Table 2 SCS criteria*

Note:

Standards from Table 2
Residential/Parkland/Institutional Property Use, coarse grained soil guidelines
Unless noted otherwise, all values presented within inset tables are reported in µg/g.

5m 0 15m

HORIZONTAL SCALE 1:500

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Metals and Inorganic Parameter Impacts in Ground Water Plan View

41 & 43 Essa Rd.,
Barrie, ON

DATE ISSUED:	*June 2020*	Figure No. 38
CREATED BY:	*JLM*	
PROJECT NO.:	*18-175*	
REFERENCE:	*Simcoe County Maps*	

DAYSTAMP: M:\18 Projects\18-175 - 41 Essa - ESA\04.0 - Drafting\18-175.dwg

Plotted by: JMCCARTNEY on August 10, 2020 at 8:58am
File: C:\Users\jmccartney\AppData\Local\Temp\AcPublish_6756\18-175.dwg Layout: PH#38 Plotscale: 0.5

Section A-A'

A

A'

Elevation (masl)

Distance (m)

MW401a			
Parameter	MECP Table 2	Results 13-May-19	27-Nov-19
Metals & Inorganics Met Table 2			

MW401b			
Parameter	MECP Table 2	Results 13-May-19	27-Nov-19
Metals & Inorganics Met Table 2			

MW401c			
Parameter	MECP Table 2	Results 13-May-19	27-Nov-19
Metals & Inorganics Met Table 2			

MW203		
Parameter	MECP Table 2	Results 25-Oct-18
Metals & Inorganics Met Table 2		

MW102		
Parameter	MECP Table 2	Results 13-Feb-18
Metals & Inorganics Met Table 2		

MW202		
Parameter	MECP Table 2	Results 25-Oct-18
Metals & Inorganics Met Table 2		

MW406a			
Parameter	MECP Table 2	Results 07-Jun-19	26-Nov-19
Cobalt	3.8	5.1	Met Table 2

MW406b			
Parameter	MECP Table 2	Results 07-Jun-19	26-Nov-19
Metals & Inorganics Met Table 2			

MW406c			
Parameter	MECP Table 2	Results 07-Jun-19	26-Nov-19
Metals & Inorganics Met Table 2			

MW404a			
Parameter	MECP Table 2	Results 07-Jun-19	26-Nov-19
Cobalt	3.8	4.3	Met Table 2

MW404b			
Parameter	MECP Table 2	Results 07-Jun-19	26-Nov-19
Metals & Inorganics Met Table 2			

MW404c			
Parameter	MECP Table 2	Results 07-Jun-19	26-Nov-19
Cobalt	3.8	4.4	Met Table 2

MW408			
Parameter	MECP Table 2	Results 14-May-19	26-Nov-19
Metals & Inorganics Met Table 2			

MW407a			
Parameter	MECP Table 2	Results 14-May-19	27-Nov-19
Metals & Inorganics Met Table 2			

MW407b			
Parameter	MECP Table 2	Results 14-May-19	27-Nov-19
Metals & Inorganics Met Table 2			

MW407c			
Parameter	MECP Table 2	Results 14-May-19	27-Nov-19
Metals & Inorganics Met Table 2			

MW405a			
Parameter	MECP Table 2	Results 14-May-19	26-Nov-19
Metals & Inorganics Met Table 2			

Bedrock Contact @115masl

LEGEND:

- G2S Monitoring Well Locations
- Azimuth Well Locations
- Test Pit Locations
- Sand
- Clay
- Silt
- Silty Sand
- Fill
- Asphalt
- Concrete
- Water Table
- Well Screen
- Sample Locations that are below detection Table 2 SCS criteria
- Sample Locations that are above detection Table 2 SCS criteria

Notes:

1. Standards from Table 2 Residential/Parkland/Institutional Property Use, coarse grained soil guidelines.
2. Unless noted otherwise, all values presented within inset tables are reported in µg/g.
3. Bed rock elevation at 124 mbgs.
4. Bedrock contact reported from Oak Ridges Moraine Ground Water Program, 2019
5. Average ground water table displayed from monitoring all on-Site wells on June 5th, 2020.

Not to Scale
5x Vertical Exaggeration

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

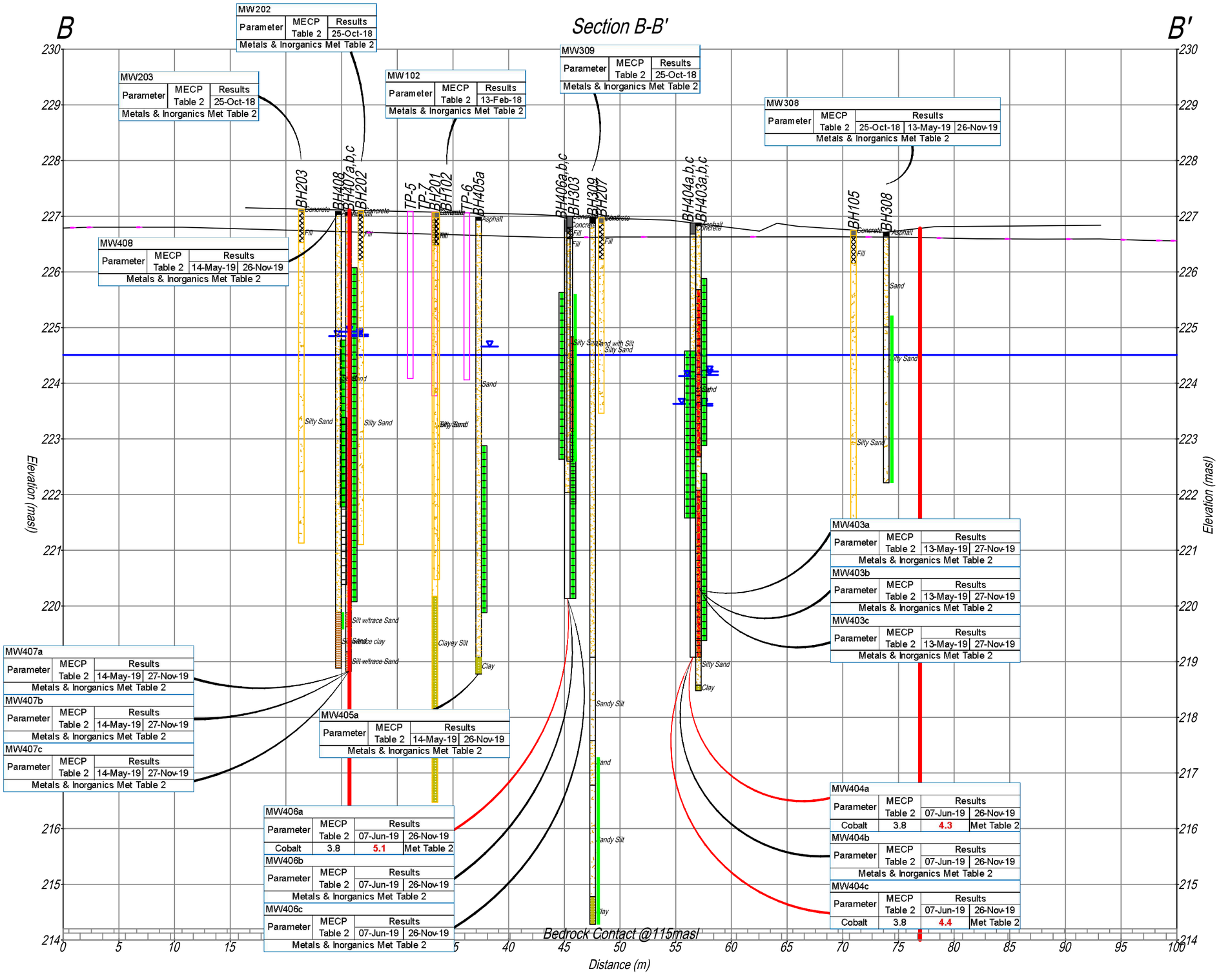
Metals and Inorganic Parameter Impacts in Ground Water Geological Cross Section A-A'

41 & 43 Essa Rd.,
Barrie, ON

DATE ISSUED:	June 2020	Figure No. 39
CREATED BY:	JLM	
PROJECT NO.:	18-175	
REFERENCE:		

DAYSTAMP: M:\18 Projects\18-175 - 41 Essa - ESA\04.0 - Drafting\18-175.dwg

Plotted by: JMCCARTNEY on August 10, 2020 at 8:58am
File: C:\Users\Jmccartney\AppData\Local\Temp\AcPublish_6756\18--175.dwg Layout: PHII39 Plotscale: 0.5



LEGEND:

- G2S Monitoring Well Locations
- Azimuth Well Locations
- Test Pit Locations
- Sand
- Clay
- Silt
- Silty Sand
- Fill
- Asphalt
- Concrete
- Water Table
- Well Screen
- Sample Locations that are below detection Table 2 SCS criteria
- Sample Locations that are above detection Table 2 SCS criteria

Notes:

1. Standards from Table 2 Residential/Parkland/Institutional Property Use, coarse grained soil guidelines.
2. Unless noted otherwise, all values presented within inset tables are reported in µg/g.
3. Bed rock elevation at 124 mbgs.
4. Bedrock contact reported from Oak Ridges Moraine Ground Water Program, 2019
5. Average ground water table displayed from monitoring all on-Site wells on June 5th, 2020.

Not to Scale
5x Vertical Exaggeration

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Metals and Inorganic Parameter Impacts in Ground Water Geological Cross Section B-B'

41 & 43 Essa Rd.,
Barrie, ON

DATE ISSUED:	June 2020	Figure No. 40
CREATED BY:	JLM	
PROJECT NO.:	18-175	
REFERENCE:		

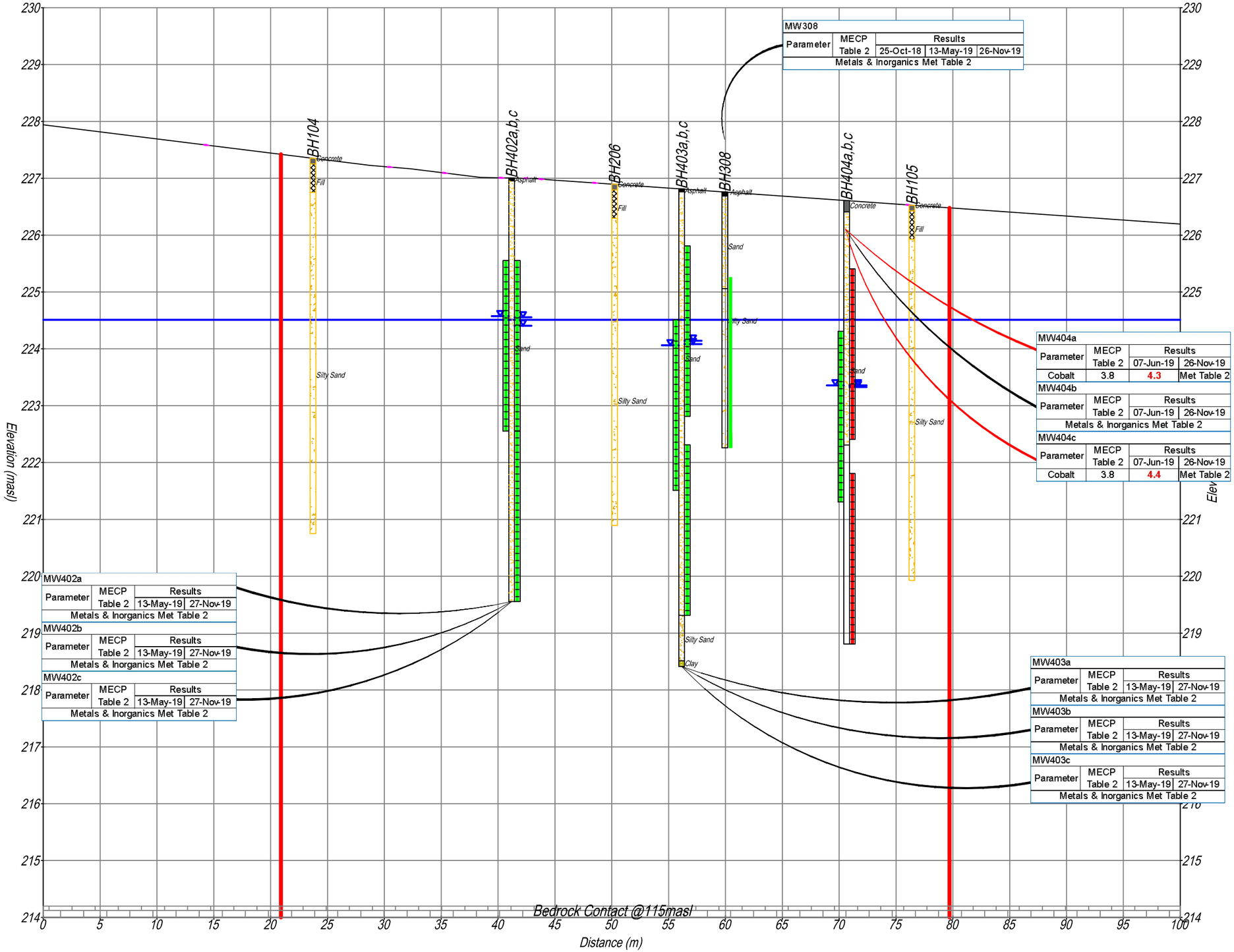
DAYSTAMP: M:\18 Projects\18-175 - 41 Essa - ESA\04.0 - Drafting\18-175.dwg

Plotted by: JMCCARTNEY on August 10, 2020 at 8:58am
File: C:\Users\jmccartney\AppData\Local\Temp\AcPublish_6756\18-175.dwg Layout: PHI40 Plotscale: 0.5

Section C-C'

C

C'



MW308				
Parameter	MECP Table 2	Results		
		25-Oct-18	13-May-19	26-Nov-19
Metals & Inorganics Met Table 2				

MW404a			
Parameter	MECP Table 2	Results	
		07-Jun-19	26-Nov-19
Cobalt	3.8	4.3	Met Table 2

MW404b			
Parameter	MECP Table 2	Results	
		07-Jun-19	26-Nov-19
Metals & Inorganics Met Table 2			

MW404c			
Parameter	MECP Table 2	Results	
		07-Jun-19	26-Nov-19
Cobalt	3.8	4.4	Met Table 2

MW402a			
Parameter	MECP Table 2	Results	
		13-May-19	27-Nov-19
Metals & Inorganics Met Table 2			

MW402b			
Parameter	MECP Table 2	Results	
		13-May-19	27-Nov-19
Metals & Inorganics Met Table 2			

MW402c			
Parameter	MECP Table 2	Results	
		13-May-19	27-Nov-19
Metals & Inorganics Met Table 2			

MW403a			
Parameter	MECP Table 2	Results	
		13-May-19	27-Nov-19
Metals & Inorganics Met Table 2			

MW403b			
Parameter	MECP Table 2	Results	
		13-May-19	27-Nov-19
Metals & Inorganics Met Table 2			

MW403c			
Parameter	MECP Table 2	Results	
		13-May-19	27-Nov-19
Metals & Inorganics Met Table 2			

LEGEND:

- G2S Monitoring Well Locations
- Azimuth Well Locations
- Test Pit Locations
- Sand
- Clay
- Silt
- Silty Sand
- Fill
- Asphalt
- Concrete
- Water Table
- Well Screen
- Sample Locations that are below detection Table 2 SCS criteria
- Sample Locations that are above detection Table 2 SCS criteria

Notes:

1. Standards from Table 2 Residential/Parkland/Institutional Property Use, coarse grained soil guidelines.
2. Unless noted otherwise, all values presented within inset tables are reported in µg/g.
3. Bed rock elevation at 124 mbgs.
4. Bedrock contact reported from Oak Ridges Moraine Ground Water Program, 2019
5. Average ground water table displayed from monitoring all on-Site wells on June 5th, 2020.

Not to Scale
5x Vertical Exaggeration

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Metals and Inorganic Parameter Impacts in Ground Water Geological Cross Section C-C'

41 & 43 Essa Rd.,
Barrie, ON

DATE ISSUED:	June 2020	Figure No.
CREATED BY:	JLM	41
PROJECT NO.:	18-175	
REFERENCE:	Simcoe County Maps	

DAYSTAMP: M:\18 Projects\18-175 - 41 Essa - ESA\04.0 - Drafting\18-175.dwg

Plotted by: JMCCARTNEY on August 10, 2020 at 8:58am
File: C:\Users\jmccartney\AppData\Local\Temp\AcPublish_6756\18--175.dwg Layout: PH#41 Plotscale: 0.5

Section D-D'

D

D'

Elevation (masl)

Distance (m)

MW101		
Parameter	MECP Table 2	Results 26-Nov-19
Metals & Inorganics Met Table 2		

MW103		
Parameter	MECP Table 2	Results 13-Feb-18
Metals & Inorganics Met Table 2		

MW205		
Parameter	MECP Table 2	Results 24-Oct-18
Metals & Inorganics Met Table 2		

MW401a			
Parameter	MECP Table 2	Results 13-May-19	27-Nov-19
Metals & Inorganics Met Table 2			

MW401b			
Parameter	MECP Table 2	Results 13-May-19	27-Nov-19
Metals & Inorganics Met Table 2			

MW401c			
Parameter	MECP Table 2	Results 13-May-19	27-Nov-19
Metals & Inorganics Met Table 2			

MW402a			
Parameter	MECP Table 2	Results 13-May-19	27-Nov-19
Metals & Inorganics Met Table 2			

MW402b			
Parameter	MECP Table 2	Results 13-May-19	27-Nov-19
Metals & Inorganics Met Table 2			

MW402c			
Parameter	MECP Table 2	Results 13-May-19	27-Nov-19
Metals & Inorganics Met Table 2			

LEGEND:

- G2S Monitoring Well Locations
- Azimuth Well Locations
- Test Pit Locations
- Sand
- Clay
- Silt
- Silty Sand
- Fill
- Asphalt
- Concrete
- Water Table
- Well Screen
- Sample Locations that are below detection Table 2 SCS criteria
- Sample Locations that are above detection Table 2 SCS criteria

Notes:

1. Standards from Table 2 Residential/Parkland/Institutional Property Use, coarse grained soil guidelines.
2. Unless noted otherwise, all values presented within inset tables are reported in µg/g.
3. Bed rock elevation at 124 mbgs.
4. Bedrock contact reported from Oak Ridges Moraine Ground Water Program, 2019
5. Average ground water table displayed from monitoring all on-Site wells on June 5th, 2020.

Not to Scale
5x Vertical Exaggeration

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

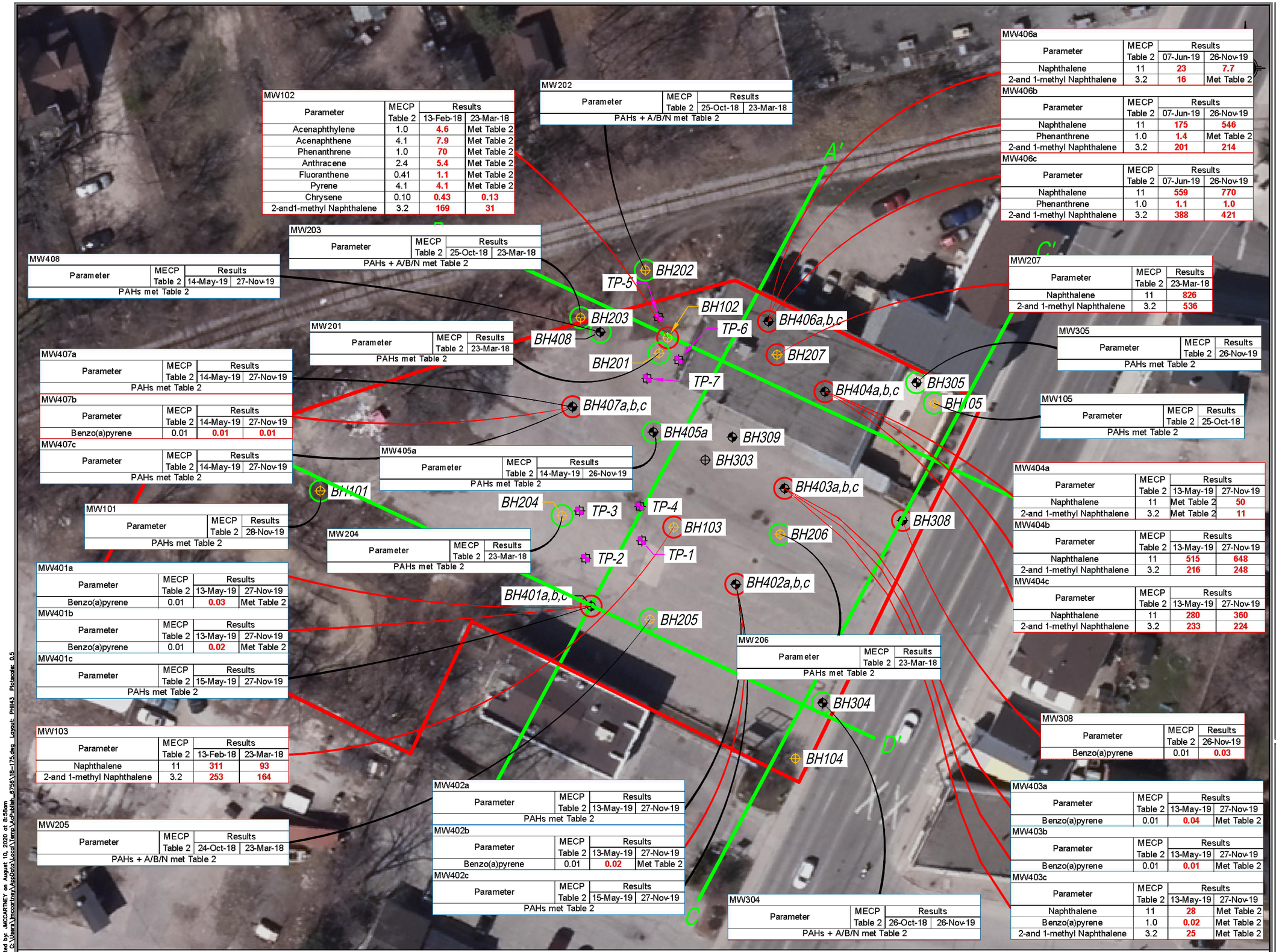
Metals and Inorganic Parameter Impacts in Ground Water Geological Cross Section D-D'

41 & 43 Essa Rd.,
Barrie, ON

DATE ISSUED:	June 2020	Figure No. 42
CREATED BY:	JLM	
PROJECT NO.:	18-175	
REFERENCE:		

DAYSTAMP: M:\18 Projects\18-175 - 41 Essa - ESA\04.0 - Drafting\18-175.dwg

Plotted by: JMCCARTNEY on August 10, 2020 at 8:58am
File: C:\Users\Jmccartney\AppData\Local\Temp\AcPublish_6756\18-175.dwg Layout: PH#42 Plotscale: 0.5



MW102

Parameter	MECP Table 2	Results 13-Feb-18	Results 23-Mar-18
Acenaphthylene	1.0	4.6	Met Table 2
Acenaphthene	4.1	7.9	Met Table 2
Phenanthrene	1.0	70	Met Table 2
Anthracene	2.4	5.4	Met Table 2
Fluoranthene	0.41	1.1	Met Table 2
Pyrene	4.1	4.1	Met Table 2
Chrysene	0.10	0.43	0.13
2-and1-methyl Naphthalene	3.2	169	31

MW202

Parameter	MECP Table 2	Results 25-Oct-18	Results 23-Mar-18
PAHs + A/B/N met Table 2			

MW406a

Parameter	MECP Table 2	Results 07-Jun-19	Results 26-Nov-19
Naphthalene	11	23	7.7
2-and 1-methyl Naphthalene	3.2	16	Met Table 2

MW406b

Parameter	MECP Table 2	Results 07-Jun-19	Results 26-Nov-19
Naphthalene	11	175	546
Phenanthrene	1.0	1.4	Met Table 2
2-and 1-methyl Naphthalene	3.2	201	214

MW406c

Parameter	MECP Table 2	Results 07-Jun-19	Results 26-Nov-19
Naphthalene	11	559	770
Phenanthrene	1.0	1.1	1.0
2-and 1-methyl Naphthalene	3.2	388	421

MW203

Parameter	MECP Table 2	Results 25-Oct-18	Results 23-Mar-18
PAHs + A/B/N met Table 2			

MW408

Parameter	MECP Table 2	Results 14-May-19	Results 27-Nov-19
PAHs met Table 2			

MW207

Parameter	MECP Table 2	Results 23-Mar-18
Naphthalene	11	826
2-and 1-methyl Naphthalene	3.2	536

MW201

Parameter	MECP Table 2	Results 23-Mar-18
PAHs met Table 2		

MW305

Parameter	MECP Table 2	Results 26-Nov-19
PAHs met Table 2		

MW407a

Parameter	MECP Table 2	Results 14-May-19	Results 27-Nov-19
PAHs met Table 2			

MW407b

Parameter	MECP Table 2	Results 14-May-19	Results 27-Nov-19
Benzo(a)pyrene	0.01	0.01	0.01

MW407c

Parameter	MECP Table 2	Results 14-May-19	Results 27-Nov-19
PAHs met Table 2			

MW105

Parameter	MECP Table 2	Results 25-Oct-18
PAHs met Table 2		

MW405a

Parameter	MECP Table 2	Results 14-May-19	Results 26-Nov-19
PAHs met Table 2			

MW404a

Parameter	MECP Table 2	Results 13-May-19	Results 27-Nov-19
Naphthalene	11	Met Table 2	50
2-and 1-methyl Naphthalene	3.2	Met Table 2	11

MW101

Parameter	MECP Table 2	Results 28-Nov-19
PAHs met Table 2		

MW204

Parameter	MECP Table 2	Results 23-Mar-18
PAHs met Table 2		

MW404b

Parameter	MECP Table 2	Results 13-May-19	Results 27-Nov-19
Naphthalene	11	515	648
2-and 1-methyl Naphthalene	3.2	216	248

MW401a

Parameter	MECP Table 2	Results 13-May-19	Results 27-Nov-19
Benzo(a)pyrene	0.01	0.03	Met Table 2

MW404c

Parameter	MECP Table 2	Results 13-May-19	Results 27-Nov-19
Naphthalene	11	280	360
2-and 1-methyl Naphthalene	3.2	233	224

MW401b

Parameter	MECP Table 2	Results 13-May-19	Results 27-Nov-19
Benzo(a)pyrene	0.01	0.02	Met Table 2

MW401c

Parameter	MECP Table 2	Results 15-May-19	Results 27-Nov-19
PAHs met Table 2			

MW206

Parameter	MECP Table 2	Results 23-Mar-18
PAHs met Table 2		

MW308

Parameter	MECP Table 2	Results 26-Nov-19
Benzo(a)pyrene	0.01	0.03

MW103

Parameter	MECP Table 2	Results 13-Feb-18	Results 23-Mar-18
Naphthalene	11	311	93
2-and 1-methyl Naphthalene	3.2	253	164

MW402a

Parameter	MECP Table 2	Results 13-May-19	Results 27-Nov-19
PAHs met Table 2			

MW403a

Parameter	MECP Table 2	Results 13-May-19	Results 27-Nov-19
Benzo(a)pyrene	0.01	0.04	Met Table 2

MW402b

Parameter	MECP Table 2	Results 13-May-19	Results 27-Nov-19
Benzo(a)pyrene	0.01	0.02	Met Table 2

MW403b

Parameter	MECP Table 2	Results 13-May-19	Results 27-Nov-19
Benzo(a)pyrene	0.01	0.01	Met Table 2

MW402c

Parameter	MECP Table 2	Results 15-May-19	Results 27-Nov-19
PAHs met Table 2			

MW403c

Parameter	MECP Table 2	Results 13-May-19	Results 27-Nov-19
Naphthalene	11	28	Met Table 2
Benzo(a)pyrene	1.0	0.02	Met Table 2
2-and 1-methyl Naphthalene	3.2	25	Met Table 2

MW205

Parameter	MECP Table 2	Results 24-Oct-18	Results 23-Mar-18
PAHs + A/B/N met Table 2			

MW304

Parameter	MECP Table 2	Results 26-Oct-18	Results 26-Nov-19
PAHs + A/B/N met Table 2			

LEGEND:

- Approx. Property Boundary
- Cross-Section Locations
- Borehole Locations
- Well Locations
- Test Pit Locations
- G2S Monitoring Well Locations
- Sample Locations that are below detection Table 2 SCS criteria
- Sample Locations that are above detection Table 2 SCS criteria

Note:
Standards from Table 2
Residential/Parkland/Institutional Property Use, coarse grained soil guidelines
Unless noted otherwise, all values presented within inset tables are reported in µg/g.

5m 0 15m

HORIZONTAL SCALE 1:500

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

PAH and A/B/N Impacts in Ground Water Plan View

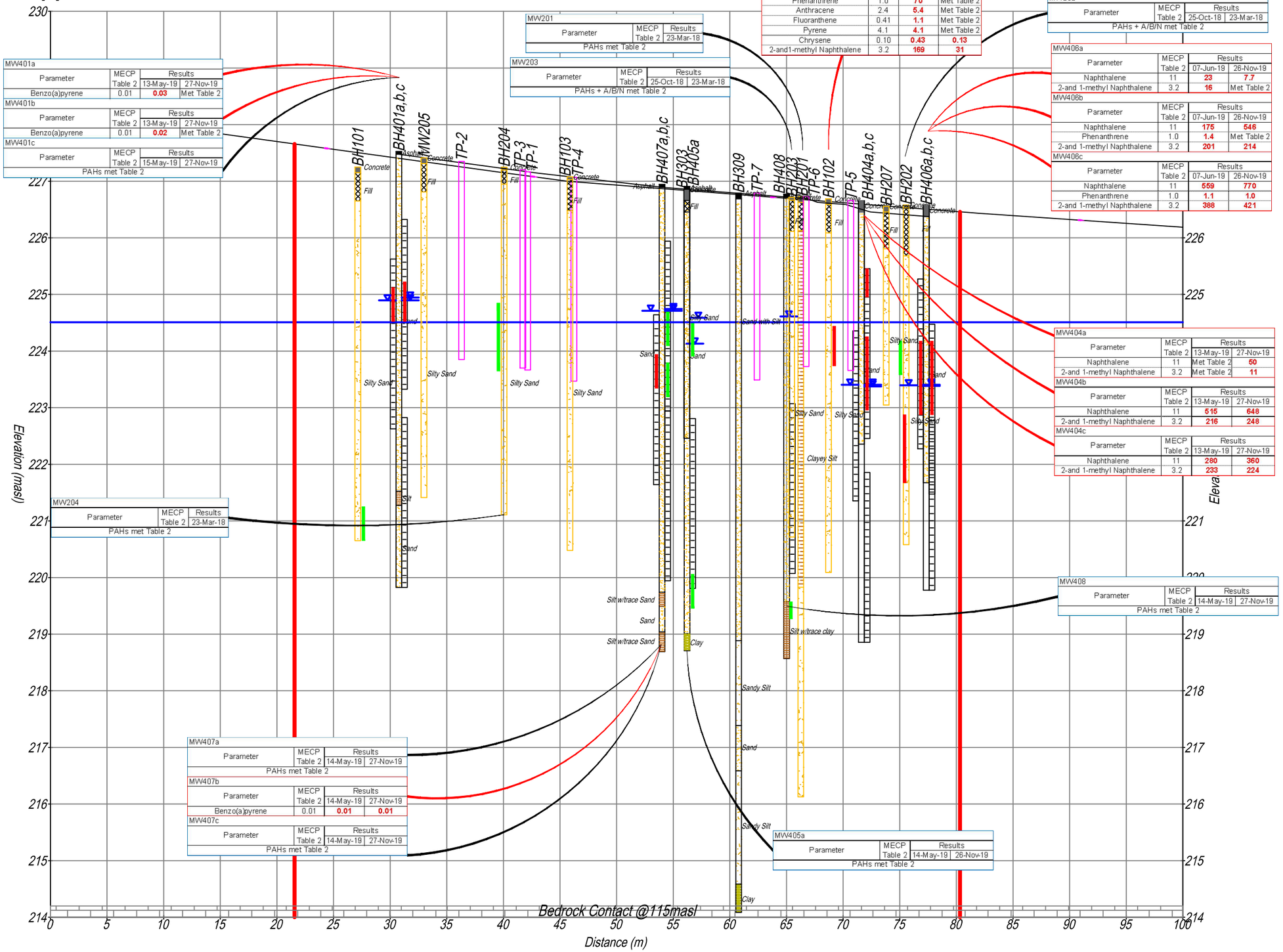
41 & 43 Essa Rd.,
Barrie, ON

DATE ISSUED:	June 2020	Figure No. 43
CREATED BY:	JLM	
PROJECT NO.:	18-175	
REFERENCE:	Simcoe County Maps	

DAYSTAMP: M:\18 Projects\18-175 - 41 Essa - ESA\04.0 - Drafting\18-175.dwg

Plotted by: JMCCARTNEY on August 10, 2020 at 8:58am
File: C:\Users\jmccartney\AppData\Local\Temp\AcPublish_6756\18-175.dwg Layout: PH#43 Plotscale: 0.5

A — Section A-A' — A'



MW401a

Parameter	MECP Table 2	Results 13-May-19	Results 27-Nov-19
Benzo(a)pyrene	0.01	**0.03**	Met Table 2

MW401b

Parameter	MECP Table 2	Results 13-May-19	Results 27-Nov-19
Benzo(a)pyrene	0.01	**0.02**	Met Table 2

MW401c

Parameter	MECP Table 2	Results 15-May-19	Results 27-Nov-19
PAHs met Table 2			

MW204

Parameter	MECP Table 2	Results 23-Mar-18
PAHs met Table 2		

MW201

Parameter	MECP Table 2	Results 23-Mar-18
PAHs met Table 2		

MW203

Parameter	MECP Table 2	Results 25-Oct-18	Results 23-Mar-18
PAHs + A/B/N met Table 2			

MW102

Parameter	MECP Table 2	Results 13-Feb-18	Results 23-Mar-18
Acenaphthylene	1.0	**4.6**	Met Table 2
Acenaphthene	4.1	**7.9**	Met Table 2
Phenanthrene	1.0	**70**	Met Table 2
Anthracene	2.4	**5.4**	Met Table 2
Fluoranthene	0.41	**1.1**	Met Table 2
Pyrene	4.1	**4.1**	Met Table 2
Chrysene	0.10	**0.43**	**0.13**
2-and1-methyl Naphthalene	3.2	**169**	**31**

MW202

Parameter	MECP Table 2	Results 25-Oct-18	Results 23-Mar-18
PAHs + A/B/N met Table 2			

MW406a

Parameter	MECP Table 2	Results 07-Jun-19	Results 26-Nov-19
Naphthalene	11	**23**	**7.7**
2-and 1-methyl Naphthalene	3.2	**16**	Met Table 2

MW406b

Parameter	MECP Table 2	Results 07-Jun-19	Results 26-Nov-19
Naphthalene	11	**175**	**546**
Phenanthrene	1.0	**1.4**	Met Table 2
2-and 1-methyl Naphthalene	3.2	**201**	**214**

MW406c

Parameter	MECP Table 2	Results 07-Jun-19	Results 26-Nov-19
Naphthalene	11	**559**	**770**
Phenanthrene	1.0	**1.1**	**1.0**
2-and 1-methyl Naphthalene	3.2	**388**	**421**

MW404a

Parameter	MECP Table 2	Results 13-May-19	Results 27-Nov-19
Naphthalene	11	Met Table 2	**50**
2-and 1-methyl Naphthalene	3.2	Met Table 2	**11**

MW404b

Parameter	MECP Table 2	Results 13-May-19	Results 27-Nov-19
Naphthalene	11	**515**	**648**
2-and 1-methyl Naphthalene	3.2	**216**	**248**

MW404c

Parameter	MECP Table 2	Results 13-May-19	Results 27-Nov-19
Naphthalene	11	**280**	**360**
2-and 1-methyl Naphthalene	3.2	**233**	**224**

MW408

Parameter	MECP Table 2	Results 14-May-19	Results 27-Nov-19
PAHs met Table 2			

MW407a

Parameter	MECP Table 2	Results 14-May-19	Results 27-Nov-19
PAHs met Table 2			

MW407b

Parameter	MECP Table 2	Results 14-May-19	Results 27-Nov-19
Benzo(a)pyrene	0.01	**0.01**	**0.01**

MW407c

Parameter	MECP Table 2	Results 14-May-19	Results 27-Nov-19
PAHs met Table 2			

MW405a

Parameter	MECP Table 2	Results 14-May-19	Results 26-Nov-19
PAHs met Table 2			

LEGEND:

- G2S Monitoring Well Locations
- Azimuth Well Locations
- Test Pit Locations
- Sand
- Clay
- Silt
- Silty Sand
- Fill
- Asphalt
- Concrete
- Water Table
- Well Screen
- Sample Locations that are below detection Table 2 SCS criteria
- Sample Locations that are above detection Table 2 SCS criteria

Notes:

1. Standards from Table 2 Residential/Parkland/Institutional Property Use, coarse grained soil guidelines.
2. Unless noted otherwise, all values presented within inset tables are reported in µg/g.
3. Bed rock elevation at 124 mbgs.
4. Bedrock contact reported from Oak Ridges Moraine Ground Water Program, 2019
5. Average ground water table displayed from monitoring all on-Site wells on June 5th, 2020.

Not to Scale
5x Vertical Exaggeration

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

PAH and A/B/N Impacts in
Ground Water Geological Cross Section A-A'

41 & 43 Essa Rd.,
Barrie, ON

DATE ISSUED:	June 2020	Figure No. 44
CREATED BY:	JLM	
PROJECT NO.:	18-175	
REFERENCE:		

DAYSTAMP: M:\18 Projects\18-175 - 41 Essa - ESA\04.0 - Drafting\18-175.dwg

Plotted by: JMCCARTNEY on August 10, 2020 at 8:58am
File: C:\Users\jmccartney\AppData\Local\Temp\AcPublish_6756\18--175.dwg Layout: PHill44 Plotscale: 0.5

Section B-B'

B

B'

Elevation (masl)

Distance (m)

Bedrock Contact @115masl

MW202			
Parameter	MECP	Results	
	Table 2	25-Oct-18	23-Mar-18
PAHs + A/B/N met Table 2			

MW203			
Parameter	MECP	Results	
	Table 2	25-Oct-18	23-Mar-18
PAHs + A/B/N met Table 2			

MW201		
Parameter	MECP	Results
	Table 2	23-Mar-18
PAHs met Table 2		

MW207		
Parameter	MECP	Results
	Table 2	23-Mar-18
Naphthalene	11	**826**
2-and 1-methyl Naphthalene	3.2	**536**

MW105		
Parameter	MECP	Results
	Table 2	25-Oct-18
PAHs met Table 2		

MW308		
Parameter	MECP	Results
	Table 2	26-Nov-19
Benzo(a)pyrene	0.01	**0.03**

MW408			
Parameter	MECP	Results	
	Table 2	14-May-19	27-Nov-19
PAHs met Table 2			

MW403a			
Parameter	MECP	Results	
	Table 2	13-May-19	27-Nov-19
Benzo(a)pyrene	0.01	**0.04**	Met Table 2

MW403b			
Parameter	MECP	Results	
	Table 2	13-May-19	27-Nov-19
Benzo(a)pyrene	0.01	**0.01**	Met Table 2

MW403c			
Parameter	MECP	Results	
	Table 2	13-May-19	27-Nov-19
Naphthalene	11	**28**	Met Table 2
Benzo(a)pyrene	1.0	**0.02**	Met Table 2
2-and 1-methyl Naphthalene	3.2	**25**	Met Table 2

MW407a			
Parameter	MECP	Results	
	Table 2	14-May-19	27-Nov-19
PAHs met Table 2			

MW407b			
Parameter	MECP	Results	
	Table 2	14-May-19	27-Nov-19
Benzo(a)pyrene	0.01	**0.01**	**0.01**

MW407c			
Parameter	MECP	Results	
	Table 2	14-May-19	27-Nov-19
PAHs met Table 2			

MW405a			
Parameter	MECP	Results	
	Table 2	14-May-19	26-Nov-19
PAHs met Table 2			

MW406a			
Parameter	MECP	Results	
	Table 2	07-Jun-19	26-Nov-19
Naphthalene	11	**23**	**7.7**
2-and 1-methyl Naphthalene	3.2	**16**	Met Table 2

MW406b			
Parameter	MECP	Results	
	Table 2	07-Jun-19	26-Nov-19
Naphthalene	11	**175**	**546**
Phenanthrene	1.0	**1.4**	Met Table 2
2-and 1-methyl Naphthalene	3.2	**201**	**214**

MW406c			
Parameter	MECP	Results	
	Table 2	07-Jun-19	26-Nov-19
Naphthalene	11	**559**	**770**
Phenanthrene	1.0	**1.1**	**1.0**
2-and 1-methyl Naphthalene	3.2	**388**	**421**

MW404a			
Parameter	MECP	Results	
	Table 2	13-May-19	27-Nov-19
Naphthalene	11	Met Table 2	**50**
2-and 1-methyl Naphthalene	3.2	Met Table 2	**11**

MW404b			
Parameter	MECP	Results	
	Table 2	13-May-19	27-Nov-19
Naphthalene	11	**515**	**648**
2-and 1-methyl Naphthalene	3.2	**216**	**248**

MW404c			
Parameter	MECP	Results	
	Table 2	13-May-19	27-Nov-19
Naphthalene	11	**280**	**360**
2-and 1-methyl Naphthalene	3.2	**233**	**224**

LEGEND:

- G2S Monitoring Well Locations
- Azimuth Well Locations
- Test Pit Locations
- Sand
- Clay
- Silt
- Silty Sand
- Fill
- Asphalt
- Concrete
- Water Table
- Well Screen
- Sample Locations that are below detection Table 2 SCS criteria
- Sample Locations that are above detection Table 2 SCS criteria

Notes:

1. Standards from Table 2 Residential/Parkland/Institutional Property Use, coarse grained soil guidelines.
2. Unless noted otherwise, all values presented within inset tables are reported in µg/g.
3. Bed rock elevation at 124 mbgs.
4. Bedrock contact reported from Oak Ridges Moraine Ground Water Program, 2019
5. Average ground water table displayed from monitoring all on-Site wells on June 5th, 2020.

Not to Scale
5x Vertical Exaggeration

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

PAH and A/B/N Impacts in
Ground Water Geological Cross Section B-B'

41 & 43 Essa Rd.,
Barrie, ON

DATE ISSUED:	June 2020	Figure No. 45
CREATED BY:	JLM	
PROJECT NO.:	18-175	
REFERENCE:		

DAYSTAMP: M:\18 Projects\18-175 - 41 Essa - ESA\04.0 - Drafting\18-175.dwg

Plotted by: JMCCARTNEY on August 10, 2020 at 8:58am
File: C:\Users\jmccartney\AppData\Local\Temp\AcPublish_6756\18-175.dwg Layout: Plot45 Plotscale: 0.5

Section C-C'

C

C'

Elevation (masl)

Distance (m)

MW206		
Parameter	MECP Table 2	Results 23-Mar-18
PAHs met Table 2		

MW308		
Parameter	MECP Table 2	Results 26-Nov-19
Benzo(a)pyrene	0.01	**0.03**

MW105		
Parameter	MECP Table 2	Results 25-Oct-18
PAHs met Table 2		

MW404a			
Parameter	MECP Table 2	Results 13-May-19	27-Nov-19
Naphthalene	11	Met Table 2	**50**
2-and 1-methyl Naphthalene	3.2	Met Table 2	**11**

MW404b			
Parameter	MECP Table 2	Results 13-May-19	27-Nov-19
Naphthalene	11	**515**	**648**
2-and 1-methyl Naphthalene	3.2	**216**	**248**

MW404c			
Parameter	MECP Table 2	Results 13-May-19	27-Nov-19
Naphthalene	11	**280**	**360**
2-and 1-methyl Naphthalene	3.2	**233**	**224**

MW402a			
Parameter	MECP Table 2	Results 13-May-19	27-Nov-19
PAHs met Table 2			

MW402b			
Parameter	MECP Table 2	Results 13-May-19	27-Nov-19
Benzo(a)pyrene	0.01	**0.02**	Met Table 2

MW402c			
Parameter	MECP Table 2	Results 15-May-19	27-Nov-19
PAHs met Table 2			

MW403a			
Parameter	MECP Table 2	Results 13-May-19	27-Nov-19
Benzo(a)pyrene	0.01	**0.04**	Met Table 2

MW403b			
Parameter	MECP Table 2	Results 13-May-19	27-Nov-19
Benzo(a)pyrene	0.01	**0.01**	Met Table 2

MW403c			
Parameter	MECP Table 2	Results 13-May-19	27-Nov-19
Naphthalene	11	**28**	Met Table 2
Benzo(a)pyrene	1.0	**0.02**	Met Table 2
2-and 1-methyl Naphthalene	3.2	**25**	Met Table 2

LEGEND:

- G2S Monitoring Well Locations
- Azimuth Well Locations
- Test Pit Locations
- Sand
- Clay
- Silt
- Silty Sand
- Fill
- Asphalt
- Concrete
- Water Table
- Well Screen
- Sample Locations that are below detection Table 2 SCS criteria
- Sample Locations that are above detection Table 2 SCS criteria

Notes:

1. Standards from Table 2 Residential/Parkland/Institutional Property Use, coarse grained soil guidelines.
2. Unless noted otherwise, all values presented within inset tables are reported in µg/g.
3. Bed rock elevation at 124 mbgs.
4. Bedrock contact reported from Oak Ridges Moraine Ground Water Program, 2019
5. Average ground water table displayed from monitoring all on-Site wells on June 5th, 2020.

Not to Scale
5x Vertical Exaggeration

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

PAH and A/B/N Impacts in Ground Water Geological Cross Section C-C'

41 & 43 Essa Rd., Barrie, ON

DATE ISSUED:	June 2020	Figure No. 46
CREATED BY:	JLM	
PROJECT NO.:	18-175	
REFERENCE:		

DAYSTAMP: M:\18 Projects\18-175 - 41 Essa - ESA\04.0 - Drafting\18-175.dwg

Plotted by: JMCCARTNEY on August 10, 2020 at 8:58am
File: C:\Users\jmccartney\AppData\Local\Temp\AcPublish_6756\18-175.dwg Layout: PH#46 Plotscale: 0.5

Section D-D'

D

D'

Elevation (masl)

Distance (m)

MW101		
Parameter	MECP Table 2	Results 28-Nov-19
PAHs met Table 2		

MW204		
Parameter	MECP Table 2	Results 23-Mar-18
PAHs met Table 2		

MW103			
Parameter	MECP Table 2	Results 13-Feb-18	23-Mar-18
Naphthalene	11	311	93
2-and 1-methyl Naphthalene	3.2	253	164

MW205			
Parameter	MECP Table 2	Results 24-Oct-18	23-Mar-18
PAHs + A/B/N met Table 2			

MW206		
Parameter	MECP Table 2	Results 23-Mar-18
PAHs met Table 2		

MW401a			
Parameter	MECP Table 2	Results 13-May-19	27-Nov-19
Benzo(a)pyrene	0.01	0.03	Met Table 2

MW401b			
Parameter	MECP Table 2	Results 13-May-19	27-Nov-19
Benzo(a)pyrene	0.01	0.02	Met Table 2

MW401c			
Parameter	MECP Table 2	Results 15-May-19	27-Nov-19
PAHs met Table 2			

MW402a			
Parameter	MECP Table 2	Results 13-May-19	27-Nov-19
PAHs met Table 2			

MW402b			
Parameter	MECP Table 2	Results 13-May-19	27-Nov-19
Benzo(a)pyrene	0.01	0.02	Met Table 2

MW402c			
Parameter	MECP Table 2	Results 15-May-19	27-Nov-19
PAHs met Table 2			

LEGEND:

- G2S Monitoring Well Locations
- Azimuth Well Locations
- Test Pit Locations
- Sand
- Clay
- Silt
- Silty Sand
- Fill
- Asphalt
- Concrete
- Water Table
- Well Screen
- Sample Locations that are below detection Table 2 SCS criteria
- Sample Locations that are above detection Table 2 SCS criteria

Notes:

1. Standards from Table 2 Residential/Parkland/Institutional Property Use, coarse grained soil guidelines.
2. Unless noted otherwise, all values presented within inset tables are reported in µg/g.
3. Bed rock elevation at 124 mbgs.
4. Bedrock contact reported from Oak Ridges Moraine Ground Water Program, 2019
5. Average ground water table displayed from monitoring all on-Site wells on June 5th, 2020.

Not to Scale
5x Vertical Exaggeration

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

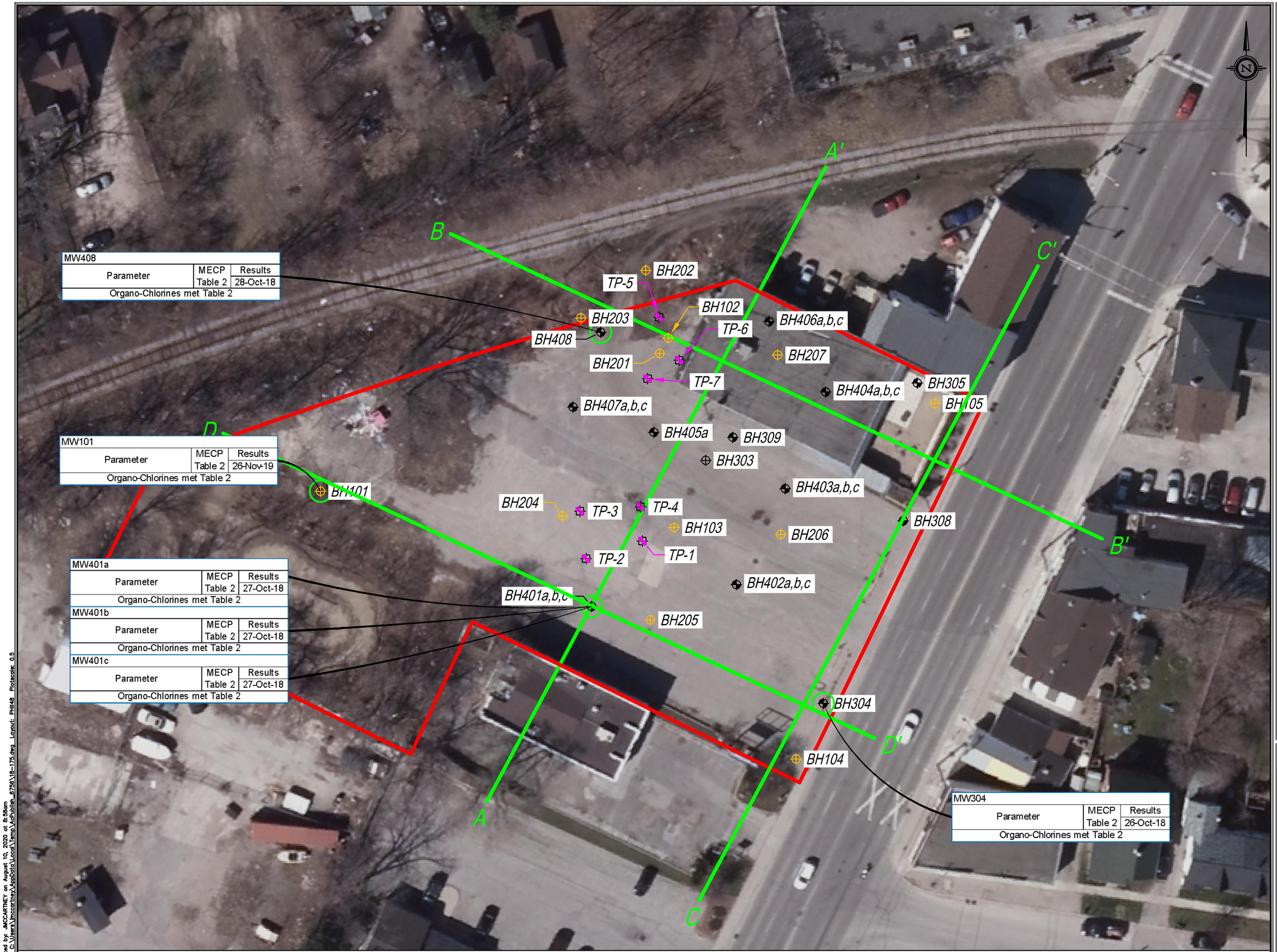
PAH and A/B/N Impacts in
Ground Water Geological Cross Section D-D'

41 & 43 Essa Rd.,
Barrie, ON

DATE ISSUED:	June 2020	Figure No. 47
CREATED BY:	JLM	
PROJECT NO.:	18-175	
REFERENCE:		

DAYSTAMP: M:\18 Projects\18-175 - 41 Essa - ESA\04.0 - Drafting\18-175.dwg

Plotted by: JMCCARTNEY on August 10, 2020 at 8:58am
File: C:\Users\jmccartney\AppData\Local\Temp\AcPublish_6756\18-175.dwg Layout: PH#47 Plotscale: 0.5



LEGEND:

- *Approx. Property Boundary*
- *Cross-Section Locations*
- *Borehole Locations*
- *Well Locations*
- *Test Pit Locations*
- *G2S Monitoring Well Locations*
- *Sample Locations that are below detection Table 2 SCS criteria*
- *Sample Locations that are above detection Table 2 SCS criteria*

Note:
Standards from Table 2
Residential/Parkland/Institutional Property Use, coarse grained soil guidelines
Unless noted otherwise, all values presented within inset tables are reported in µg/g.

5m 0 15m

HORIZONTAL SCALE 1:500

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Organo-Chlorine Impacts in Ground Water Plan View

41 & 43 Essa Rd.,
Barrie, ON

DATE ISSUED:	June 2020	Figure No. 48
CREATED BY:	JLM	
PROJECT NO.:	18-175	
REFERENCE:	Simcoe County Maps	

DAYSTAMP: M:\18 Projects\18-175 - 41 Essa - ESA\04.0 - Drafting\18-175.dwg

Plotted by: JMCCARTNEY on August 10, 2020 at 8:58am
File: C:\Users\jmccartney\AppData\Local\Temp\AcPublish_6756\18-175.dwg Layout: PH48 Plotscale: 0.5

Section A-A'

A

A'

MW401a		
Parameter	MECP Table 2	Results 27-Oct-18
Organo-Chlorines met Table 2		

MW401b		
Parameter	MECP Table 2	Results 27-Oct-18
Organo-Chlorines met Table 2		

MW401c		
Parameter	MECP Table 2	Results 27-Oct-18
Organo-Chlorines met Table 2		

MW101		
Parameter	MECP Table 2	Results 26-Nov-19
Organo-Chlorines met Table 2		

MW408		
Parameter	MECP Table 2	Results 28-Oct-18
Organo-Chlorines met Table 2		

Elevation (masl)

Distance (m)

Bedrock Contact @115masl

LEGEND:

- G2S Monitoring Well Locations
- Azimuth Well Locations
- Test Pit Locations
- Sand
- Clay
- Silt
- Silty Sand
- Fill
- Asphalt
- Concrete
- Water Table
- Well Screen
- Sample Locations that are below detection Table 2 SCS criteria
- Sample Locations that are above detection Table 2 SCS criteria

Notes:

1. Standards from Table 2 Residential/Parkland/Institutional Property Use, coarse grained soil guidelines.
2. Unless noted otherwise, all values presented within inset tables are reported in µg/g.
3. Bed rock elevation at 124 mbgs.
4. Bedrock contact reported from Oak Ridges Moraine Ground Water Program, 2019
5. Average ground water table displayed from monitoring all on-Site wells on June 5th, 2020.

Not to Scale
5x Vertical Exaggeration

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Organo-Chlorine Impacts in
Ground Water Geological Cross Section A-A'

41 & 43 Essa Rd.,
Barrie, ON

DATE ISSUED:	June 2020	Figure No. 49
CREATED BY:	JLM	
PROJECT NO.:	18-175	
REFERENCE:		

DAYSTAMP: M:\18 Projects\18-175 - 41 Essa - ESA\04.0 - Drafting\18-175.dwg

Plotted by: JMCCARTNEY on August 10, 2020 at 8:58am
File: C:\Users\Jmccartney\AppData\Local\Temp\AcPublish_6756\18--175.dwg Layout: PH#49 Plotscale: 0.5

Section B-B'

B

B'

MW408		
Parameter	MECP Table 2	Results 28-Oct-18
Organo-Chlorines met Table 2		

BH203 BH408 BH407a,b,c BH202 TP-5 TP-7 BH201 BH102 TP-6 BH405a BH406a,b,c BH303 BH309 BH207 BH404a,b,c BH403a,b,c BH105 BH308

Concrete
Fill
Asphalt
Silty Sand
Sand
Silt w/trace Sand
Silt w/trace clay
Clayey Silt
Clay
Sandy Silt
Bedrock Contact @115masl

Elevation (masl)

Distance (m)

LEGEND:

- G2S Monitoring Well Locations
- Azimuth Well Locations
- Test Pit Locations
- Sand
- Clay
- Silt
- Silty Sand
- Fill
- Asphalt
- Concrete
- Water Table
- Well Screen
- Sample Locations that are below detection Table 2 SCS criteria
- Sample Locations that are above detection Table 2 SCS criteria

Notes:

1. Standards from Table 2 Residential/Parkland/Institutional Property Use, coarse grained soil guidelines.
2. Unless noted otherwise, all values presented within inset tables are reported in µg/g.
3. Bed rock elevation at 124 mbgs.
4. Bedrock contact reported from Oak Ridges Moraine Ground Water Program, 2019
5. Average ground water table displayed from monitoring all on-Site wells on June 5th, 2020.

Not to Scale
5x Vertical Exaggeration

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

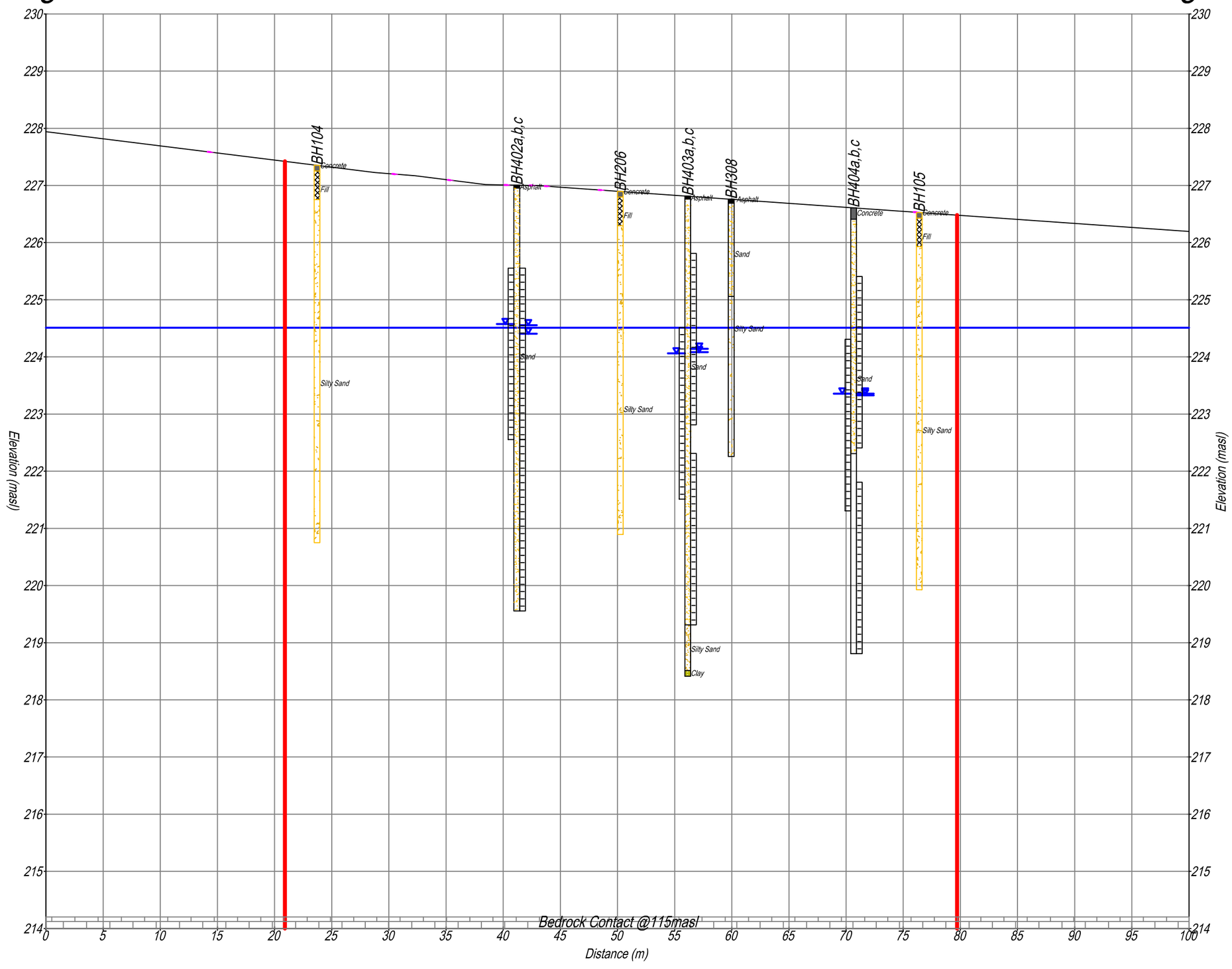
Organo-Chlorine Impacts in
Ground Water Geological Cross Section B-B'

41 & 43 Essa Rd.,
Barrie, ON

DATE ISSUED:	June 2020	Figure No. 50
CREATED BY:	JLM	
PROJECT NO.:	18-175	
REFERENCE:		

DAYSTAMP: M:\18 Projects\18-175 - 41 Essa - ESA\04.0 - Drafting\18-175.dwg

Plotted by: JMCCARTNEY on August 10, 2020 at 8:58am
File: C:\Users\jmccartney\AppData\Local\Temp\AcPublish_6756\18--175.dwg Layout: PHill50 Plotscale: 0.5



LEGEND:

- G2S Monitoring Well Locations
- Azimuth Well Locations
- Test Pit Locations
- Sand
- Clay
- Silt
- Silty Sand
- Fill
- Asphalt
- Concrete
- Water Table
- Well Screen
- Sample Locations that are below detection Table 2 SCS criteria
- Sample Locations that are above detection Table 2 SCS criteria

Notes:

1. Standards from Table 2 Residential/Parkland/Institutional Property Use, coarse grained soil guidelines.
2. Unless noted otherwise, all values presented within inset tables are reported in µg/g.
3. Bed rock elevation at 124 mbgs.
4. Bedrock contact reported from Oak Ridges Moraine Ground Water Program, 2019
5. Average ground water table displayed from monitoring all on-Site wells on June 5th, 2020.

Not to Scale
5x Vertical Exaggeration

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Organo-Chlorine Impacts in
Ground Water Geological Cross Section C-C'

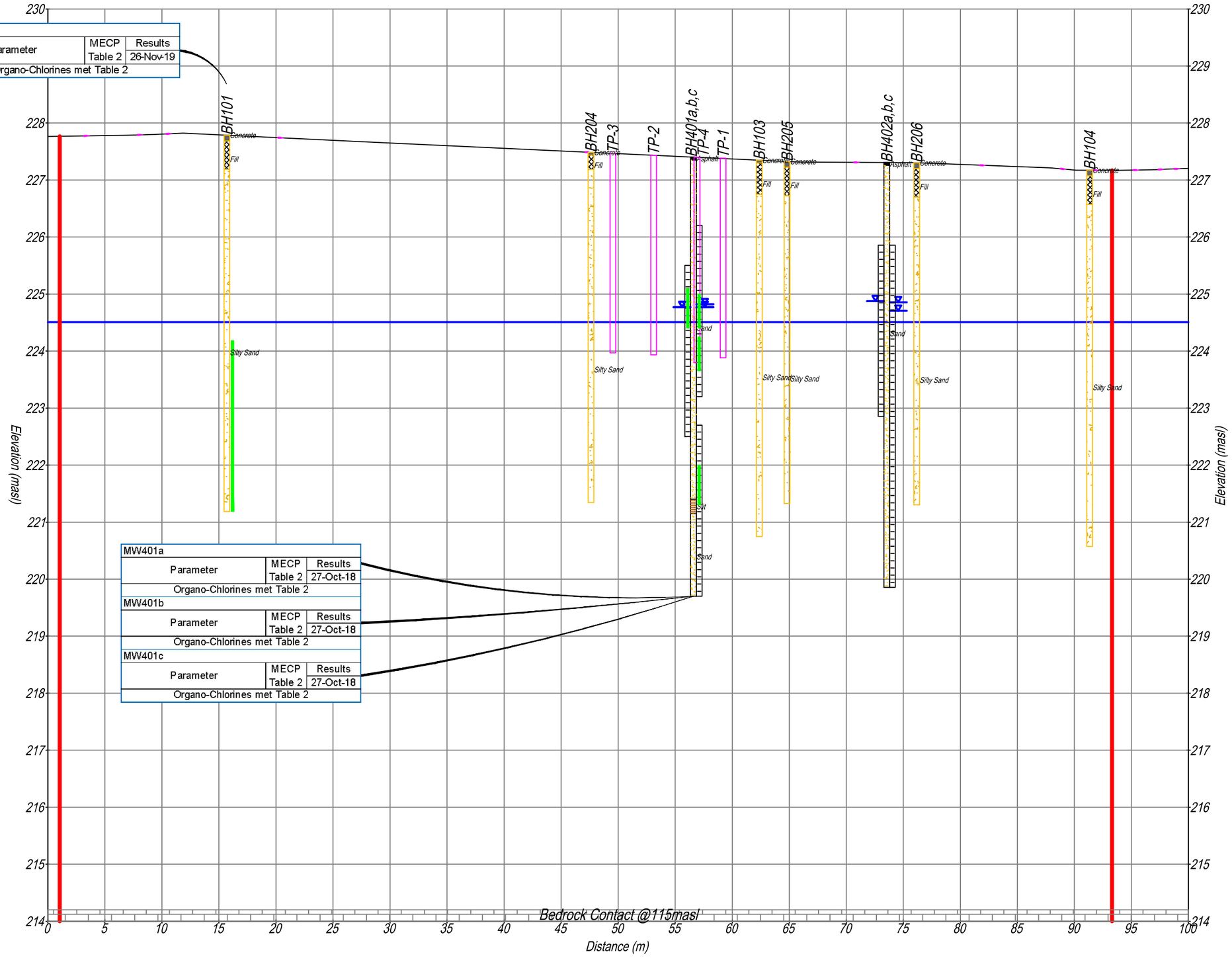
41 & 43 Essa Rd.,
Barrie, ON

DATE ISSUED:	June 2020	Figure No.
CREATED BY:	JLM	51
PROJECT NO.:	18-175	
REFERENCE:		

DAYSTAMP: M:\18 Projects\18-175 - 41 Essa - ESA\04.0 - Drafting\18-175.dwg

Plotted by: JMCCARTNEY on August 10, 2020 at 8:58am
File: C:\Users\jmccartney\AppData\Local\Temp\AcPublish_6756\18-175.dwg Layout: Phill51 Plotscale: 0.5

Section D-D'



MW101		
Parameter	MECP Table 2	Results 26-Nov-19
Organo-Chlorines met Table 2		

MW401a		
Parameter	MECP Table 2	Results 27-Oct-18
Organo-Chlorines met Table 2		

MW401b		
Parameter	MECP Table 2	Results 27-Oct-18
Organo-Chlorines met Table 2		

MW401c		
Parameter	MECP Table 2	Results 27-Oct-18
Organo-Chlorines met Table 2		

LEGEND:

- G2S Monitoring Well Locations
- Azimuth Well Locations
- Test Pit Locations
- Sand
- Clay
- Silt
- Silty Sand
- Fill
- Asphalt
- Concrete
- Water Table
- Well Screen
- Sample Locations that are below detection Table 2 SCS criteria
- Sample Locations that are above detection Table 2 SCS criteria

Notes:

1. Standards from Table 2 Residential/Parkland/Institutional Property Use, coarse grained soil guidelines.
2. Unless noted otherwise, all values presented within inset tables are reported in µg/g.
3. Bed rock elevation at 124 mbgs.
4. Bedrock contact reported from Oak Ridges Moraine Ground Water Program, 2019
5. Average ground water table displayed from monitoring all on-Site wells on June 5th, 2020.

Not to Scale
5x Vertical Exaggeration

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Organo-Chlorine Impacts in
Ground Water Geological Cross Section D-D'

41 & 43 Essa Rd.,
Barrie, ON

DATE ISSUED:	June 2020	Figure No. 52
CREATED BY:	JLM	
PROJECT NO.:	18-175	
REFERENCE:		

DAYSTAMP: M:\18 Projects\18-175 - 41 Essa - ESA\04.0 - Drafting\18-175.dwg

Plotted by: JMCCARTNEY on August 10, 2020 at 8:58am
File: C:\Users\jmccartney\AppData\Local\Temp\AcPublish_6756\18-175.dwg Layout: PHIS2 Plotscale: 0.5

APPENDIX B

Sampling and Analysis Plans

SAMPLING AND ANALYSIS PLAN

The Sampling and Analysis Plan (SAP) for the current investigation was developed according to the requirements of the client (George Dangerfield), and in response to the information acquired in a field level Site inspection evaluation to advance the property towards Record of Site Condition (RSC) status.

This investigation is advantaged by a recently completed a field-level investigation to assess "*areas of potential environment concern* (APECs)" that were associated with the site operations. This reconnaissance-level work confirmed the presence of three PCAs present on the RSC Property. To-date the Phase One ESA has not yet been reviewed. The unique circumstances with these detections were that lighter end PHCs were detected as opposed to heavier end compounds. Residual PHC contamination is typically associate with the latter compound as opposed to the former compounds.

According to the client, a former underground fuel storage tank (UST) was removed in 1986 which had been located in proximity to the original building at that central location. The UST was reported to have contain gasoline. The client indicated that at the time of the tank removal no obvious contaminated was discovered. It is not known if this tank released product into the surrounding soils.

At a second detection location, infrastructure associated with a buried home heating oil tank was located along the north end of the RSP Property boundary, behind the current structure on-Site.

The purpose of this investigation is to delineate potential vertical and horizontal contamination within the vicinity of the above mentioned APECs for the purpose of estimating total volume for site remediation works.

Review of the hydrological regime surrounding the RSC Property indicates that the regional ground water flow direction would be northeast towards Lake Simcoe.

The scope of work proposed for this reconnaissance evaluation included the following:

- using soil test pits at the RSC Property and assuming a advancement depth of 3 to 5 meters below ground surface (mbgs) which correlates to the depth to water table; attempt to delineate each APEC;

- test pits will be advanced in a northeast - southwest direction which is roughly the assumed ground water flow direction. In general, test pits should be excavated on 3 to 5 m centres to penetrate down to the water table (i.e., where the PHCs would be migrating laterally) from the current observed concrete pad located within the vicinity of the former underground gasoline fuel tank. ;

- test pits will be advanced along the north RSC Property boundary within the vicinity of the buried furnace oil tank infrastructure to determine whether a tank remains to this location. Care will be taken to unearth the traced infrastructure to its obvious terminus point;

- The number of test pits have been estimated. If more than ten (10) test pits are required to delineate the APECs, then more will be advanced to ensure that delineation has been met. If the depth to water is greater than the ability of the equipment to reach it, then the program could be curtailed.

Quality Control

- Grab samples of the soil will be field screened for volatiles especially in proximity to the water table;

- Soil samples, if collected, would be gathered 0.5 m beyond the last detected COC encountered; and

- The analytical work for the Phase Two Property will include analysis for petroleum hydrocarbons (PHC).

The client has indicated that the goal would be to remediate the Site to RSC standards; but this evaluation would not conform to the RSC requirements. Thus once completed, it is recognized that additional confirmatory sampling using a drilling rig would be required to conform to Phase Two ESA standards as outlined in O.Reg. 153/04.

This SAP assumes that the ground water table is present within the 3 – 4 m depth. Un-impacted soils excavated during this program will be returned back to the test pit.

Soil Sampling Plan

For all of the soil test pits, field screening measured would be performed to evaluate the soil profile. The field screening activities would include assessing the soil vapour profile with an organic vapour analyzer (OVA), as well as a visual and olfactory inspection. For OVA analysis soil samples were collected by hand and stored in sealed plastic bags. The

OVA was used to measure air in headspace of the bags, in order to test for the presence of flammable organic vapours.

If it was determined that the potential existed for soil impacts then soil samples were collected in the appropriate laboratory provided containers. The sampling at each location would be based on a professional assessment of the contaminants of concern (COCs). The soil sampling program will be conducted in accordance with the requirements of O.Reg. 153/04, Schedule E, Table 2.<<ed comment: doesn't matter because test pitting represents disturbed soil sampling and the MOECC will not accept soil samples collected in this manner>>

For review/discussion only



SAMPLING AND ANALYSIS PLAN
– 41 & 43 ESSA RD, BARRIE, ON

Delineation Risk Assessment Drilling

This *Sampling and Analysis Plan* (SAP) for the current investigation was developed according to the requirements of the client (Barrie Rent-A-Car Ltd.), and in response to the need to address the *risk assessment* (RA) requirements necessary for the filing of a *Records of Site Condition* (RSC) submission. The RSC/RA Property requires lateral and vertical delineation focused on the zone of impact. This evaluation also requires that the maximum concentrations for each COC be identified within the identified zone of impact for the RA process.

Delineation activities must meet the following clause under the Regulations:

The requirements of clause 7(4)(c), Schedule E, which states the following:
"t*he delineation is conducted by assuming the lateral and vertical extent of the area in which a contaminant is present at a concentration greater than the applicable SCS for that contaminant extends laterally or vertically, as the case may be, from a sampling location at which the contaminant is present at a concentration greater than the applicable SCS for the contaminant to the next sampling location at which the concentration of the contaminant is equal to or below the applicable SCS for the contaminant*".

Background Understanding

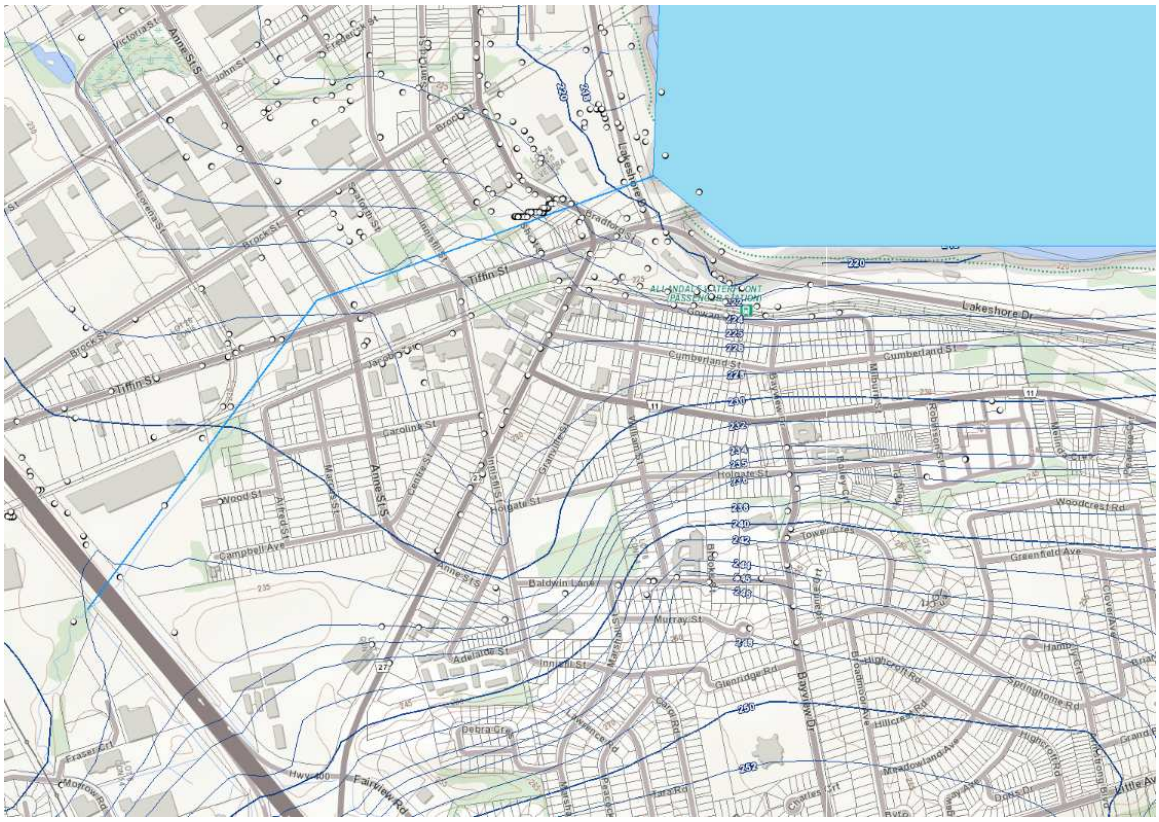
Previously, a Phase One *Environmental Site Assessment* (ESA) was completed by others in February 2018. Previous Phase Two ESA works were also conducted by others in February and March 2018 on the RSC Property. Since May 2018, Azimuth has conducted a preliminary test pitting program (May 2018) and confirmatory drilling program (October 2018).

No off-Site *potential contaminating activities* (PCAs) identified in the Phase One ESA have been found based on the past Phase Two ESA investigations. Two on-Site *areas of potential environmental concern* (APECs) have been identified identified as:

- a former commercial retail gasoline AST, and;
- a former furnace oil AST.

The former gasoline AST was operated years ago when the water table was depressed through municipal drinking water takings. The PHC / PAH impacts are perceived to be at this former water table horizon. This activity has been curtailed in this area of the City and the water table has rebounded as a result. The contaminant plume associated with this release has moved east[1] toward the property boundary and underneath the existing building. It is assumed that the historic ground water flow direction under a municipal pumping influence is roughly similar to the current water table condition. Water table mapping from ORMGP suggests ground water flow toward Kempenfelt Bay (see overleaf graphic).

As well, it is assumed that the majority of the residual contamination is associated with contaminant sorption into lower permeability soil lens. The current contaminant profile has been equated to a mottled contaminant distribution where "lens" of contaminant exist within the soil profile about 2 to 4 m below the current water table.



Source: ORMGP Water Table Mapping

[1] For this discussion it is assumed that Essa Road runs east-west

The former furnace oil AST is situated close to the eastern boundary behind the existing building. The extent of contamination is poorly understood; but a few monitoring wells around the source location did not detect any evidence of contamination (*i.e.,* MW201 to MW203). It is suspected that contaminant migration would be toward the eastern boundary / rail corridor.

This is important since past Site documentation has suggested a more southerly flow direction (G2S, 2018b). This has lead to the possibility that the contamination detected underneath the existing building floor slab (*i.e.,* MW207) could have originated from the furnace oil AST release. There is less certainty with this conclusion with the additional information compiled on the property at the current time.

The initial Site reconnaissance work has led to the conclusion that a *Risk Assessment* (RA) would be required to successfully obtain an RSC acknowledgement from the MECP. This is primarily due to the detection of *polycyclic aromatic hydrocarbons* (PAHs) detected along with the PHCs. The source of the PAHs is poorly understood; but attributed to a possible fire associated with the former garage structure present on the property. This hypothesis has issues since the most diverse PAHs detection is associated with the furnace oil AST release.

Proposed Sample and Analysis Plan

Table 1 (below) reflects our proposed *Drilling and Sampling Program* (SAP) to address the above-noted PCAsand to identify all Potential COCs. In addition, the SAP needs to ensure background Site information has also been obtained (*i.e.,* grain-size analysis, soil pH and fraction of organic carbon).

The underlying goal would be to laterally and vertically delineate the gasoline AST plume to the eastern property boundary and define the extent of contamination associated with the furnace oil AST.

Table 1: Proposed Sample Analysis Plan

Well Name	Location	PCOC[1]	Rationale
BH-401	West portion of Site	PHCs VOCs PAHs metals & inorganics	Upgradient monitoring well to demonstrate western (south-west) extent of Site contamination; If impacts detected then soil sample should be collected and borehole should be curtailed and moved further west;

Table 1: Proposed Sample Analysis Plan

Well Name	Location	PCOC[1]	Rationale
BH-402	BH south of MW103	PHCs VOCs PAHs metals & inorganics	Demonstrate southern extent of impacts and lie between MW205 and MW206; If impacts detected then soil sample should be collected and borehole should be curtailed and moved further south;
BH-403	BH south of MW303 & 309	PHCs VOCs PAHs metals & inorgan	Demonstrate eastern extent of impacts and lie between MW206 and MW305; If impacts detected then soil sample should be collected and borehole should be curtailed and moved further east;
BH-404	BH south of MW207 (inside building)	PHCs VOCs PAHs metals & inorgan	Demonstrate northern- north-east extent of impacts and lie between MW207 and MW305; If impacts detected then soil sample should be collected and borehole should be curtailed and moved further north-east;
BH-405	BH north of MW103	PHCs VOCs PAHs metals & inorgan	Demonstrate western extent of impacts and lie between MW204 and MW201; If impacts detected then soil sample should be collected and borehole should be curtailed and moved further west;
BH-406	BH at east property boundary north of MW207 (inside building)	PHCs VOCs PAHs metals & inorgan	Demonstrate northern extent of impacts and lie between MW202 and MW207; If impacts detected then soil sample should be collected and borehole should be curtailed and moved further north (outside structure);

Notes: [1] TPH: Total Petroleum Hydrocarbons (F_1-F_4) also called PHCs
VOCs: Volatile Organic Compounds
PAHs: Polycyclic Aromatic Hydrocarbons

Scope of Work
The scope of work proposed for the Phase Two ESA included the following:

1. advancement of six (6) nested borehole locations[2], completed as monitoring wells to laterally delineate the potentially deep dissolved phase plume associated with the former gasoline AST release:

- boreholes will be *'nested'* in triplicate (x3) adjacent to the interpreted impact extents as noted in Table 1;
    - monitoring wells are installed as triple to meet MECP requirements of having a) wells screened across the water table as well as b) the former water table (*i.e.*, zone of impact) and finally to c) assess the vertical and lateral extent of the PHC contamination;
- worst case soil samples will be collected at each borehole for petroleum hydrocarbons (PHCs), volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), heavy metals and inorganics parameters;
    - worst case samples will be based upon PID measurements;
- duplicate soil samples will be collected for each 10 samples submitted;
- three soil samples will be collected for pH readings;
- grain size samples will be collected for each soil type observed throughout the soils investigation, with a minimum of two samples submitted. Samples should reflect soils observed within the shallow and deep soil profile;
- shallow ground water monitors will be installed with 3 m screens and across the ground water table. Ground water monitors within the impacted area and below the impacts will be installed with a 3 m screen and not across the water table; and
- ground water samples will be collected from each ground water monitor for PHCs, VOCs, PAHs, heavy metals and inorganics;
- two ground water sampling events will be completed representing ground water conditions of the spring freshet and the fall dry season; and
- additional ground water samples will be collected from ground water monitors MW304, MW305 and MW308 for inorganic parameters to identify salt impacts associated with municipal road salting along Essa road.

If impacts are measured (through PID) or observed (through visual) during the advancement of a borehole, advancement will be cancelled and the borehole will be repositioned back from the source ~2.5 m. Each sampling location is identified on the attached image at the end of this document.

[2] Note: Two nested borehole locations are positioned within the on-Site building. A separate limited access drill rig will be required to access and advance these locations.

Quality Control

Among the quality control protocols to be used are the following:

- duplicate soil samples (worst case) would be collected from boreholes, for each analytical parameter, per 10 samples collected (anticipated 1 or 2 total);
- the analytical work for the Phase Two Property will include analysis for PHCs, VOCs, PAHs, heavy metals and inorganic parameters. The locations for each proposed borehole is presented on the image at the end of this document.

The client stipulated that both the Phase One ESA and Phase Two ESA were intended to be part of a Record of Site Condition submission for the RSC Property. This SAP assumes that the field component can be completed within three weeks or 15 days, and that the ground water table is present between 2.0 and 2.5 mbgs. The drilling has been estimated to be completed in 14 days, and a 15th day to be utilized for ground water sampling. Soils and ground water removed during the drilling and sampling program will be stored in drums and will be the responsibility of the client to dispose.

Soil Sample Screening

For all of the soil boreholes, field screening measured would be performed to evaluate the soil profile. In addition, field screening would be performed at multiple locations for each of the fill locations to evaluate this material. The field screening activities would include assessing the soil vapour profile with an organic vapour analyzer (OVA), as well as a visual and olfactory inspection. For OVA analysis soil samples will be collected by hand and stored in sealed plastic bags. The OVA will be used to measure air in headspace of the bags, in order to test for the presence of flammable organic vapours.

If it is determined that the potential existed for soil impacts then soil samples will be collected in the appropriate laboratory provided containers. The sampling at each location would be based on a professional assessment of the *potential contaminants of concern* (PCoCs). The soil sampling program will be conducted in accordance with the requirements of O.Reg. 153/04, Schedule E, Table 2.

Ground Water Sampling Plan

Each of the ground water monitoring wells is to be purged prior to sampling even though the drilling program does not intend to use drilling water. The purge water will be stored in drums. Ground water samples would be collected from each of the monitoring wells if no measurable drawdown occurs according to the SOP. If drawdown occurs then a day delay in sampling would occur to permit recovery prior to sampling and all samples will be collected at or near the bottom of each monitoring well and across the well screen. Stored water in drums will be the responsibility of the client to dispose.

For review/ discussion only:



APPENDIX C

Historical Environmental Reports

Environmental Consulting Inc.
3370 South Service Road, Suite 107, Burlington, ON L7N 3M6
P 905.331.3735 F 905.642.5999
G2Senvironmental.com

Phase One Environmental Site Assessment



41 & 43 Essa Road, Barrie, Ontario

G2S18006A

Barrie Drive-A-Car (1979) Limited
11 Shoreview Drive
Barrie, Ontario
L4M 1G2

February 6, 2018

Executive Summary

G2S Environmental Consulting Inc. (G2S) was retained by Barrie Drive-A-Car (1979) Limited to complete a Phase One Environmental Site Assessment (ESA) for the properties located at 41 and 43 Essa Road in Barrie, Ontario, hereafter referred to as the 'Site'. The current owner of the property is Barrie Drive-A-Car (1979) Limited. Authorization to proceed with the Phase One ESA was provided by George Dangerfield of Barrie Drive-A-Car (1979) Limited.

The irregular shaped Site is located on the west side of Essa Road, approximately 125 m southwest of the intersection with Tiffin Street and approximately 280 m northeast of the intersection of Essa Road and Innisfil Street (as shown on Drawing 1 and Drawing 2).

The Site is located in a setting consisting generally of commercial land use. Residential areas are located southeast, north, and northwest of the Site. Kempenfelt Bay of Lake Simcoe is located approximately 360 m northeast and a CNR railway line traverses southwest to northeast across the north property boundary of the Site.

The purpose of this Phase One ESA is to determine the potential for impacts on the Site from present or past Site activities or from surrounding properties. The Phase One ESA is required as Barrie Drive-A-Car Ltd. may be pursuing a Record of Site Condition (RSC) for the property. This Phase One ESA was completed in accordance with Ontario Regulation 153/04.

The Phase One ESA identified several Areas of Potential Environmental Concern (APECs) on the property. The potential environmental risks to the property include:

APEC 1: The historical use of the Site as a service station, as an autobody shop, and by Allandale Lumber & Fuel Co Ltd. Fill and vent pipes were observed on the west exterior of the building during the Site visit.

APEC 2: The historical use of the property located north adjacent (35 Essa Road) as a dry cleaner and as an autobody shop. Fill and vent pipes were observed on the west side of the building during the Site visit.

APEC 3: The historical presence of underground storage tanks (USTs), and aboveground storage tanks (ASTs) on the property located southwest adjacent (259-273 Innisfil Street). The current use of the property is an autobody shop with presence of ASTs.

APEC 4: The historical use of the property located approximately 20 m south (49 Essa Road) by Allandale Lumber, Fuel & Construction Co. Ltd., including historical presence of ASTs.

APEC 5: The historical use of the properties located approximately 20 m east (34 Essa Road & 40 Essa Road) for storage of oil, including historical presence of a UST.

APEC 6: The historical use of the property located approximately 20 m east (48 Essa Road) as an autobody shop, including historical presence of a UST.

Further investigation is recommended to investigate potential environmental impacts in soil and groundwater, resulting from the identified APECs.

There is the potential for the presence of ACMs, ODS-containing materials, lead based paints, PCBs, and mercury. Should renovation or demolition be planned in the building, a designated substances survey should be performed in accordance with Ministry of Labour regulations.

A Phase Two ESA is required before a Record of Site Condition (RSC) can be filed due to the APECs identified. Numerous PCAs were identified within the Study Area, and therefore further environmental investigation is required.

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1. Introduction

G2S Environmental Consulting Inc. (G2S) was retained by Barrie Drive-A-Car (1979) Limited to complete a Phase One Environmental Site Assessment (ESA) for the properties located at 41 and 43 Essa Road in Barrie, Ontario, hereafter referred to as the 'Site'. The current owner of the property is Barrie Drive-A-Car (1979) Limited. Authorization to proceed with the Phase One ESA was provided by George Dangerfield of Barrie Drive-A-Car (1979) Limited.

1.1 Phase One Property Information

1.1.1 Site Description

The PIN numbers for the parcels on-Site are:

- PIN 58755-0095
- PIN 58755-0037

The legal descriptions for the property are:

- Lots 3, 4 W/S Essa Road Plan 29, Part Lot 2 W/S Essa Road, Part Lot A Plot 29, Part 1 51R23560; Barrie.
- Lot 3 W/S Essa Road, 4 W/S Essa Road Plan 29 Allandale; Part Lot 2 W/S Essa Road, A E/S Block ST Plan 29 Allandale Part 1 51R23560; Barrie.

1.1.2 Site Location

The irregular shaped Site is located on the west side of Essa Road, approximately 125 m southwest of the intersection with Tiffin Street and approximately 280 m northeast of the intersection of Essa Road and Innisfil Street (as shown on Drawing 1 and Drawing 2).

The Site is located in a setting consisting generally of commercial land use. Residential areas are located southeast, north, and northwest of the Site. Kempenfelt Bay of Lake Simcoe is located approximately 360 m northeast and a CNR railway line traverses southwest to northeast across the north property boundary of the Site.

The Site location is illustrated on Drawing 1 in Appendix A. Photographs of Site and the surrounding properties are included in Appendix B.

1.1.3 Site Occupancy

According to the Site Representative, the Site has been vacant for approximately 2 years and previous occupants have included banquet and catering services, grocery stores, and most recently, Starlight Lounge. According to city directories, Reynold's Supertest Service Station and Reynold's Collision Repair occupied 41 Essa Road in 1962. 43 Essa Road, currently vacant, was last occupied by Barrie Drive-A-Car, Hertz Rent-A-Car, and Horne, E., from 1976-1982.

1.1.4 Site Features

The Site is currently developed with a rectangular single storey, slab on-grade building located along the northeast property line of the Site. The building consists of a large, open lounge space

in the west area, including a stage in the center, a seating bench along the south wall, and a bar in the northeast corner. The east area of the building consists of a kitchen and washroom. The central, south and west areas of the Site are vacant and assumed to be covered in asphalt and/or gravel as ground surface observations were limited due to snow cover. The Site is approximately 0.57 hectares (1.41 acres) in size. Entrance to the Site is accessed via Essa Road.

1.1.5 Surrounding Properties

The Site is primarily surrounded by commercial properties. A two-storey vacant building is located northeast adjacent to the Site. Flooring by Design is located south adjacent to the Site, on the east side towards Essa Road. TSC Villager, a hardware store, Get Moore Auto Service Inc., and The Lifestyle nightclub, are also located south adjacent to the Site, on the west side towards Innisfil Street. A CNR rail line traverses the northern property line of the Site.

2. Scope of Work

The purpose of this Phase One ESA is to determine the potential for impacts on the Site from present or past Site activities or from surrounding properties. The Phase One ESA is required as Barrie Drive-A-Car Ltd. may be pursuing a Record of Site Condition (RSC) for the property.

This Phase One ESA was completed in accordance with Ontario Regulation 153/04.

The scope of work for this Phase One ESA included a review of available historical records, a visual inspection of the Site and surrounding properties, interviews with knowledgeable persons, municipal and provincial agencies and preparation of a report of the findings and any recommendations.

3. Records Review

Available public records were reviewed to determine the land use history of the Site and surrounding properties.

3.1 General

(i) Phase One Study Area Determination

The Phase One Study Area includes the Site and lands that are within approximately 250 metres of the Site, as shown on Drawing 2.

(ii) First Developed Use Determination

Vernon's Directories for the City of Barrie first list the Site address in 1927 as vacant. According to Fire Insurance Plans from 1907, the Site was first developed with an irregularly shaped building, likely a residence, on the west side of 41 Essa Road.

(iii) Fire Insurance Plans

Fire Insurance Plans (FIPs) for Barrie were reviewed online and at the Simcoe County Archives located in Minesing, Ontario. FIPs for Barrie from 1907, 1931, 1946, and 1971 were located and covered the Site and Study Area.

In 1907, an irregularly shaped building is located on the west side of 41 Essa Road. The 1931 and 1946 FIPs show the Site as developed with a small building in the center of 41 Essa Road. 43 Essa Road is occupied by Allandale Lumber & Fuel Co. Ltd., and is developed with a long rectangular building identified as a warehouse on the south area of the Site, and a smaller building towards the west property line. In 1971, a large rectangular building is developed along the north property line of 41 Essa Road, and two large general warehousing buildings are developed at 43 Essa Road.

The following Potentially Contaminating Activities (PCAs) were identified on the FIPs:

Table 1: Fire Insurance Plans, Potentially Contaminating Activities

Address	Direction and Distance from Site	Potentially Contaminating Activity	Description	Years Occupied	Contaminants of Potential Concern
43 Essa Road	Site	Gasoline and Associated Products Storage in Fixed Tanks	Allandale Lumber & Fuel Co. Ltd.	1946	PAHs, PHCs, Metals
35 Essa Road	North adjacent	Operation of Dry Cleaning Equipment	Building identified as Chinese Laundry in 1931 and 1946 and Laundromat in 1971	1931, 1946, 1971	VOCs
259-273 Innisfil Street	Southwest adjacent	Gasoline and Associated Products Storage in Fixed Tanks,	Two aboveground oil storage tanks identified on northwest area; rail line extending onto	1931, 1946	Metals, PAHs, PHCs, VOCs

Address	Direction and Distance from Site	Potentially Contaminating Activity	Description	Years Occupied	Contaminants of Potential Concern
		Rail Yards, Tracks and Spurs	northwest corner of property		
			Four USTs along west-central property line, and two ASTs along north-central property line	1971	
34 Essa Road	~20 m east	Gasoline and Associated Products Storage in Fixed Tanks	Oil Shed indicated towards east property line, UST indicatd on property	1931, 1946	PHCs, BTEX, Metals
37 Essa Road (currently 40 Essa Road)	~20 m east	Gasoline and Associated Products Storage in Fixed Tanks	Oil Storage Building indicated on property	1907	PHCs, BTEX, Metals
46 Essa Road (currently 48 Essa Road)	~20 m east	Commercial Autobody Shop, Gasoline and Associated Products Storage in Fixed Tanks	Property identified as Garage & Auto Repairs; UST identifies on property	1931, 1946	Metals, PHCs, VOCs
49 Essa Road	~20 m south	Gasoline and Associated Products Storage in Fixed Tanks	Property identified as Allandale Lumber, Fuel & Construction Co. Ltd., two fuel oil ASTs indicated	1971	PHCs, BTEX, Metals
45 Gowan Street (currently 5 Gowan Street)	~45 m east	Operation of Dry Cleaning Equipment	Building identified as Chinese Laundry	1907	VOCs
9 Gowan Street	~50 m east	Salvage Yard, including Automobile Wrecking	Building identified as Auto Wreckers	1931	Metals, PHCs, VOCs, PAHs
62 Essa Road (currently 64 Essa Road)	~75 m south	Gasoline and Associated Products Storage in Fixed Tanks, Commercial Autobody Shop	Property identified as Gasoline Service Station; three USTs identified along the south side of the property	1946	Metals, PHCs, BTEX
			Property identified as Auto Service and one UST in the center area of the property	1971	
13 Gowan Street	~90 m east	Commercial Autobody Shop	Building identified as Auto Body Shop	1971	PHCs, Metals, VOCs
87 Tiffin Street (currently 250 Innisfil Street)	~100 m west	Gasoline and Associated Products Storage in Fixed Tanks, Fertilizer Bulk Storage	1971 FIP identifies Oil Warehouse, Fertilizer Storage Warehouse and one UST at the northwest area of the property	1931, 1946, 1971	PHCs, BTEX, Metals, Pesticides

Address	Direction and Distance from Site	Potentially Contaminating Activity	Description	Years Occupied	Contaminants of Potential Concern
17 Gowan Street	~110 m east	Commercial Auto Body Shop, Gasoline and Associated Products Storage in Fixed Tanks	Building identified as Auto Sales & Repairs; UST indicated in the center of the property	1971	Metals, PHCs, BTEX
272 Innisfil Street	~110 m southwest	Gasoline and Associated Products Storage in Fixed Tanks	Building identified as Ontario Hog Producers; one vertical AST identified on property	1971	PHCs, BTEX, Metals
81 Essa Road	~125 m south	Commercial Autobody Shop	Building identified as Car Sales & Repairs	1971	Metals, PHCs, VOCs
84 Tiffin Street	~130 m northwest	Commercial Autobody Shop, Gasoline and Associated Products Storage in Fixed Tanks	Building identified as Auto Service, one UST indicated towards east property line	1971	Metals, PHCs, VOCs
91 Tiffin Street	~130 m west	Gasoline and Associated Products Storage in Fixed Tanks	Property identified as McColl Frontenac Oil Co. Ltd.; four aboveground oil tanks indicated in the centre of the property	1931, 1946	PHCs, BTEX, Metals
			Property occupied by Texaco Canada Ltd.; nine aboveground fuel oil tanks identified on the center of the property, two diesel USTs towards the north area of the property and Oil Warehouse adjacent to the east property line	1971	
252-254 Bradford Street	~150 m northeast	Gasoline and Associated Products Storage in Fixed Tanks	Property identified as Gasoline Service Station; two USTs indicated towards the east property line	1931, 1946	PHCs, BTEX, Metals
280 Innisfil Street	~160 m southwest	Commercial Trucking and Container Terminals, Gasoline and Associated Products Storage in Fixed Tanks	Truck Maintenance, Storage Yard and two diesel USTs indicated on property	1971	Metals, PHCs, BTEX
278 Bradford Street	~160 m northwest	Gasoline and Associated Products Storage in Fixed Tanks	UST identified on southern property line	1971	PHCs
94 Tiffin Street	~180 m northwest	Commercial Autobody Shop	Building identified as Auto Repairs	1971	Metals, PHCs, VOCs

Address	Direction and Distance from Site	Potentially Contaminating Activity	Description	Years Occupied	Contaminants of Potential Concern
232 Bradford Street	~200 m northeast	Commercial Autobody Shop	Property identified as Auto Service	1946	PHCs, VOCs, Metals
235 Bradford Street	~200 m northeast	Gasoline and Associated Products Storage in Fixed Tanks	Building identified as Gasoline Service Station; three USTs identified adjacent to Bradford Street	1931, 1946	PHCs
285 Bradford Street	~210 m northeast	Gasoline and Associated Products Storage in Fixed Tanks	Fuel Oil AST identified towards southern property line	1971	PHCs
113 Tiffin Street	~215 m west	Concrete, Cement and Lime Manufacturing, Gasoline and Associated Products Storage in Fixed Tanks	Property occupied by Simcoe Block Co. Ltd. Concrete Block Manufacturing; one aboveground storage tank identified on southwest area of property	1971	Metals, PHCs, VOCs
224 Bradford Street	~215 m north	Commercial Autobody Shop, Gasoline and Associated Products Storage in Fixed Tanks	Property identified as Auto Service; one UST indicated east of the building	1971	PHCs, VOCs, Metals
226 Bradford Street (currently 224 Bradford Street)	~215 m north	Gasoline and Associated Products Storage in Fixed Tanks, Commercial Autobody Shop	Property identified as Gasoline Service Station; USTs surround the building (eight USTs in 1946, four USTs in 1931)	1931, 1946	PHCs, BTEX, Metals
44 Gowan Street	~250 m east	Operation of Dry Cleaning Equipment	Building identified as Chinese Laundry	1907	VOCs

Notes: PHCs– Petroleum Hydrocarbons
VOCs – Volatile Organic Compounds
PCBs – Polychlorinated Biphenyls
PAHs – Polycyclic Aromatic Hydrocarbons
USTs – Underground Storage Tanks
ASTs – Aboveground Storage Tanks

(iv) Property Ownership

A land title search for the Site was conducted at the Simcoe Land Registry Office located in Barrie, Ontario. The Land Registry document for 41 Essa Road includes all document types and deleted instruments since April 20, 1998 when the Site pin was created. The Land Registry document indicates this parcel of the Site was owned by Dangerfield Holdings Limited from June of 1966 to October of 1977. The Land Registry document for 43 Essa Road includes all document types and deleted instruments since September 24, 2001 when the Site pin was created. This parcel of the Site is owned by Barrie Drive-A-Car (1979) Limited. The Site was leased to National Grocers Co. Ltd. from November, 1965 to February, 1966, and was transferred to Dangerfield Holdings Limited in 1966 until 1977. The parcel was transferred to the current owner in April of 2015. The Land Registry document is included in Appendix D.

(v) Property Use Directories

Vernon's City of Barrie Directory books for the Site and Study Area were available for review at the Barrie Public Library. The Site and Study Area were reviewed in approximately five year increments for the years 1930-1999, when publication was ceased. The table below summarizes the land uses of the Site:

Table 2: Property Use Directories, Site Use

Site		
Address	**Property Use**	**Years Occupied**
41 Essa Road	Aladdin Banquet and Meeting Centre	1996-1999
	Factory Carpets of America	1994
	U Buy Discount Foods	1990
	A&M Super Discount Mart Ltd.	1976-1982
	Red and White Foodmaster	1969
	Reyold's Super Service Station, Reynolds Collision Repair	1963
	Not Listed	<1952
43 Essa Road	Barrie Drive A Car, Barrie Leasing and Drive a Car, Hertz Rent a Car	1976-1982
	Hertz Rent a Car, Barrie Drive a Car Co.	1976-1982
	Horne, E.	1976-1982
	Dangerfield Holdings	1976
	Howden and Forrest Manufacturers	1969
	Cooke Cartage and Storage	1952- 1963
	Badgley, M. F.	1962
	Cooke, L. E. & S. J.	1952
	Sloane, W. H.	1942
	Barnes, G. H.	1937
	Cripps, G.	1930-1933
	Vacant	1927

The land uses for the surrounding properties as described in the reviewed directories, as well as the direction and distance of the surrounding properties to the Site, are included in Appendix C.

Potentially contaminating activities (PCAs) identified within the Study Area based on the property use directories search are summarized in Table 3.

Table 3: Property Use Directories, Potentially Contaminating Activities

Address	Direction and Distance from Site	Potentially Contaminating Activity	Description	Years Occupied	Contaminants of Potential Concern
41 Essa Road	Site	Gasoline and Associated Products Storage in Fixed Tanks	Reynold's Super Service Station	1963	PHCs
		Commercial Autobody Shop	Reynold's Collision Repair	1963	Metals, PHCs
35 Essa Road	North adjacent	Operation of Dry Cleaning Equipment	Wagg's Laundry and Dry Cleaners, Allandale Laundry, Fong Laundry, Lem Bro Laundry	1937-1969	VOCs
		Commercial Autobody Shop	Londry Motors and Used Cars	1952	Metals, PHCs
49 Essa Road	~20 m south	Gasoline and Associated Products Storage in Fixed Tanks	Allandale Lumber Co. Fuel and Construction Co. Ltd.	1942-1976	PHCs
48 Essa Road	~20 m southeast	Commercial Autobody Shop	Pifher Garage, Jenkin's Garage, Hunter JT Garage	1937-1963	Metals, PHCs
21 Essa Road	~40 m northeast	Commercial Autobody Shop	Allandale Motors	1962	Metals, PHCs
9 Gowan Street	~50 m east	Asphalt and Bitumen Manufacturing	Topcoat Asphalt Sealing	1996-1999	Metals, PHCs
		Metals Treatment, Plating, Coating and Finishing	Oil Tech Rust Control Centre, Bikeland Rust Control Centre	1982-1999	Metals, VOCs
		Salvage Yard, including Automobile Wrecking	Allandale Auto Wreckers, Carter Autowreckers	1933-1942	Metals, PHCs
62 Essa Road	~55 m south	Gasoline and Associated Products Storage in Fixed Tanks	Fitzpatrick's Service Centre, McBride's Gulf Service Station, Giles Service Station	1952-1982	PHCs
64 Essa Road	~80 m south	Gasoline and Associated Products Storage in Fixed Tanks	Mustard R. Service Station, Edge Hazen Service Station	1937-1942	PHCs
13 Gowan Street	~85 m east	Commercial Autobody Shop	Carter Body and Fender Shop, Carter, A & N Auto Accessories	1937-1969	Metals, PHCs
272 Innisfil Street	~110 m southwest	Wood Treating and Preservative Facility and Bulk Storage of	No Dip Furniture Stripping and Refinishing	1990-1999	VOCs

Address	Direction and Distance from Site	Potentially Contaminating Activity	Description	Years Occupied	Contaminants of Potential Concern
		Treated and Preserved Wood Products			
		Metal Fabrication	Vespra Valley Heating – Sheet Metal	1982	Metals, VOCs
17 Gowan Street	~110 m east	Commercial Autobody Shop	Autoworks, Huronia Ford Collision Centre, Johnston Kery Motors Ltd., Viau Motors, McKinnon Beswetherick Garage	1952-1999	Metals, PHCs
81 Essa Road	~125 m south	Commercial Autobody Shop	B&K Auto, Auto Service, Huronia Ford, Pierre Motors	1963-1999	Metals, PHCs
91 Tiffin Street	~130 m west	Gasoline and Associated Products Storage in Fixed Tanks	Huronia Fuels, Texaco Canada Ltd.	1976-1982	PHCs
84 Tiffin Street	~130 m northwest	Commercial Autobody Shop	Stroud Motor Garage, B & K Auto Service, Mooney's Auto Glass & Radiator Ltd.	1976-1999	Metals, PHCs
		Gasoline and Associated Products Storage in Fixed Tanks	Texaco Service Station	1969	PHCs,
89 Tiffiin Street	~145 m west	Gasoline and Associated Products Storage in Fixed Tanks	McColl Frontenac Oil Co. Ltd., Baldwin Ernest Marathon Oil Co.	1937-1942	PHCs
91 Essa Road	~150 m south	Gasoline and Associated Products Storage in Fixed Tanks	Mike's Service Centre, Cunnington's Texaco Service, Texaco	1976-1990	PHCs
280 Innisfil Street	~160 southwest	Commercial Autobody Shop	Beatty Automotive Services, Klassy Car, Rennick Auto Centre	1990-1999	Metals, PHCs
230 Innisfil Street	~165 m northwest	Operation of Dry Cleaning Equipment	Wash and Dry Coin Laundry	1996-1999	VOCs
94 Tiffin Street	~195 m northwest	Commercial Autobody Shop	Simcoe Sports Car, Ray Simcoe Motors Ltd.	1963-1976	Metals, PHCs
17 Jacobs Terrace	~195 southwest	Commercial Autobody Shop	No Name Autobody, A-1 Auto Body	1976-1999	Metals, PHCs
100 Tiffin Street	~230 m northwest	Commercial Autobody Shop	A-1 Automotive Service, D&D Auto and Cycle Repair	1990-1999	Metals, PHCs

Address	Direction and Distance from Site	Potentially Contaminating Activity	Description	Years Occupied	Contaminants of Potential Concern
		Gasoline and Associated Products Storage in Fixed Tanks	McColl Frontenac Oil Co. Ltd.	1952	PHCs
123 Tiffin Street	~245 m west	Gasoline and Associated Products Storage in Fixed Tanks	Esso Home Comfort, Four Stars Fuels, Imperial Oil Ltd.	1963-1999	PHCs

Notes: PHCs– Petroleum Hydrocarbons
VOCs – Volatile Organic Compounds

(vi) Official City Plan

The City of Barrie Official Plan, Schedule A – Land Use Plan, was reviewed to determine the land use of the Site and Study Area. The Site and Study Area are classified as 'City Centre'. Areas south of the Study Area are classified as residential, areas west are classified as restricted industrial, and north of the Site is classified as a water treatment centre. Areas northeast along the shore of Kemenfelt Bay are classified as open space.

(vii) Environmental Reports

Previous environmental reports were not provided to G2S**.**

3.2 Environmental Source Information

(i) National Pollutant Release Inventory

The National Pollutant Release Inventory (NPRI) database was searched for records in the vicinity of the Site for the years 1992-2014. The following records were found within the Study Area:

Table 4: NPRI Records

Address	Business Name	Substance Reports
249 Bradford Street ~200 m northeast	The Corporation of the City of Barrie Wastewater Treatment Facility NPRI ID: 5986 Registered from 2001-2016	- Most recent released pollutants from the facility include: o 47 tonnes of on-site releases to the air, 8.3 tonnes of on-site releases to water, and 90 tonnes of off-site disposal of ammonia in 2016. o 223 kg of off-site disposal of arsenic (and its compounds) in 2010. o 0.001 kg of on-site releases to the air and 6.3 kg of off-site disposal of cadmium (and its compounds) in 2012. o 54 tonnes of off-site disposal of copper (and its compounds) in 2010. o 0.001 kg of on-site releases to the air and 140 kg of off-site disposal of lead (and its compounds) in 2016. o 6.6 kg of off-site disposal of mercury (and its compounds) in 2014. o 1,650 tonnes of on-site releases to water of nitrate ion in 2010. o 0.585 tonnes of on-site releases to water and 83 tonnes of off-site disposal of phosphorus in 2016. o 0.640 tonnes of on-site releases to the air of PM10 in 2009.

Address	Business Name	Substance Reports
		○ 0.333 tonnes of on-site releases to the air of PM2.5 in 2007. ○ 5.9 tonnes of on-site releases to the air of toluene in 2009. ○ 22 tonnes of on-site releases to the air of volatile organic compounds in 2016. ○ 1.9 tonnes of on-site releases to the air of xylene in 2009. ○ 41 tonnes of off-site disposal of zinc (and its compounds) in 2010.

(ii) PCB Storage Sites

A search of the Ontario Inventory of PCB Storage Sites (1991 & 1995) was reviewed for records in the vicinity of the Site. No records were located within the Study Area.

(iii) Environmental Registry

The Environmental Bill of Rights Registry was searched for references to the Site and Study Area. The following record was located:

Table 5: Environmental Registry Records

Property address and distance to Site	Site Use	Description
259-273 Innisfil Street Southwest adjacent	**Proponent:** Simcoe District Co-operative Services **Instrument Type:** Not specified	Section 5.2.2 of Liquid Fuels Handling Code requires that at cardlock/keylock facilities the minimum distance between a gasoline and diesel dispenser shall be 7.5 meters. The applicant requested to allow the use of diesel dispenser and gasoline dispenser that are located less than 7.5 meters apart. Approval granted with the condition that the dispensers shall be so interlocked electrically that only one of the dispensers can be operated. (February 2003).
	Proponent: Simcoe District Co-operative Services **Instrument Type:** Approval for discharge into the natural environment other than water (i.e. Air) - EPA s.9	Approval granted for a natural gas fired grain dryer with a rated capacity of 1200 bushels per hour of dried corn. The dryer is clad with an exterior perforated enclosure which retains any emissions from the dryer screens within a settling chamber (January 1998).
249 Bradford Street ~200 m northeast	**Proponent:** The Corporation of the City of Barrie **Instrument Type:** Environmental Compliance Approval (project type: sewage) – EPA Part II.1-sewage	The Ministry of the Environment issued an amended Environmental Compliance Approval for the City of Barrie's municipal sewage treatment works (June 2012) to fulfil the requirements under the Lake Simcoe Protection Plan and related Phosphorus Reduction Strategy. The Appellant appealed all sections of the ECA that were amended from the prior approval. The parties (the MOE and the Appellant) requested that the Environmental Review Tribunal accept a Settlement Agreement, that the Director amend the ECA to the proposed agreement, and dismiss the appeal. The Tribunal accepted. (April, 2013)

(iv) Coal Gasification Maps

A review of the *Inventory of Coal Gasification Plant Waste Sites in Ontario* publication indicated that no coal gasification plants were located within the Study Area.

(v) Coal Tar Sites

The *Inventory of Industrial Sites Producing and Using Coal Tar and Related Tars in Ontario* is included in the Waste Disposal Site Inventory document and was searched for facilities. No coal tar facilities were found within the Study Area.

(vi) Freedom of Information Request

G2S contacted the Freedom of Information and Protection of Privacy Office of the Ministry of the Environment with a request for information pertaining to the Site. Requests generally take several weeks to months to generate a response from the government agency. Should a response from the government agency change the conclusions or recommendations of this report, an addendum letter will be provided along with the information received from the government agency.

(vii) Waste Management Records

The Site and properties within the Study Area were searched by company name in the Hazardous Waste Information Network (HWIN) and the Hazardous Waste Information System (HWIS) databases from 1986-1993 and 2002-2014. Properties within the Study Area were also searched for records currently registered with HWIN. The following records were located:

Table 6: HWIN Records

Address Direction and Distance from Site	Generator Name	Registered Wastes	Contaminants of Potential Concern
259 Innisfil Street Southwest adjacent	Simcoe District Co-operative Service ON0178445 (1988-2004) UPI Inc. ON1446933 (1993-2004)	• Light fuels	PHCs
21 Essa Road ~40 m northeast	Tristar Pharmacies Ltd. ON1838400 (2002-2004)	• Pharmaceuticals	VOCs
9 Gowan Street ~70 m east	Oil-Tech Automotive Rust Control Centre ON7159977 (2016-Current) ON0266100 (1986-2004)	• Oil skimmings & sludges • Other specified inorganics • Detergents/soaps • Aliphatic solvents • Petroleum distillates • Light fuels	Metals, PHCs, VOCs
272 Innisfil Street ~110 m southwest	Frantic Freddy's Ltd. ON0641700 (1986-1993)	• Petroleum distillates • Halogenated solvents	PHCs, VOCs

Address Direction and Distance from Site	Generator Name	Registered Wastes	Contaminants of Potential Concern
91 Tiffin Street ~130 m west	Imperial Oil ON9682631 (2002-Current)	• Light fuels • Waste oils & sludges • Waste oils & lubricants	PHCs
	Texaco Canada ON000526 (1986-1993)	• Light fuels	PHCs
19 Burton Avenue ~130 m southeast	Simcoe County District School Board ON0358154 (2004-2008)	• Acid waste – heavy metals • Alkaline solutions – heavy metals • Paint/pigment/coating residues	Metals, VOCs
242 Bradford Street ~170 m north	Trow Associates Inc. ON5507609 (2008)	• Light fuels	PHCs
94 Tiffin Street ~195 m northwest	Labar Sales & Distribution Ltd. ON9741444 (2014-Current)	• Paint/pigment/coating residues • Waste oils & lubricants • Waste compressed gases	PHCs, VOCs
249 Bradford Street ~200 m northeast	The Corporation of the City of Barrie ON0310601 (1986-Current)	• Waste oils & lubricants • Halogenated solvents • Organic laboratory chemicals • Waste compressed gases • Paint/pigment/coating residues • Acid waste – heavy metals • Organic laboratory chemicals • Petroleum distillates • Other specified inorganics • Detergents/soaps • Aliphatic solvents • Light fuels	Metals, PAHs, PHCs, VOCs
17 Jacobs Terrace ~210 m southwest	No Name Auto Body ON0727300 (1993)	• Petroleum distillates	PHCs
Innisfil Street (No Address)	The Corporation of the City of Barrie ON4117713 (2012-Current)	• Leachates	Metals, PAHs, PCBs, PHCs, VOCs
Tiffin Street (No Address)	The Corporation of the City of Barrie ON7678693	• Halogenated solvents	VOCs

Notes: PHCs– Petroleum Hydrocarbons
VOCs – Volatile Organic Compounds
PAHs – Polycyclic Aromatic Hydrocarbons
PCBs – Polychlorinated Biphenyls

(viii) Other MOECC Reports

Other MOECC reports were not available for the Site or Study Area at the time of this Phase One ESA.

(ix) Retail Fuel Storage Tanks

G2S contacted the Technical Standards and Safety Authority (TSSA) by email on January 17, 2018. G2S requested a search for records of fuel storage on the Site and immediate surrounding properties on Essa Road, and Innisfil Street. A response from the TSSA has not been received at this time. Should a response from the TSSA change the conclusions or recommendations of this report, an addendum letter will be provided along with the information received from the government agency. TSSA records were previously requested for some properties within the Study Area during a 2012 Phase One ESA completed by G2S for a property adjacent to the Site. The following records were found for 259-273 Innisfil Street and are summarized below:

- 259-273 Innisfil Street had a record of nine expired underground tanks, two expired propane tanks, and an incident report.
- Records provided identified an expired card/key lock gas station, an expired full serve gas station, and an expired propane refill centre along with equipment details showing underground fuel storage tank details.
- A letter report addressed to the TSSA from Simcoe District Co-Operative Services indicates that 259-273 Innisfil Street had been operating as a full-service gas bar, as well as a diesel key lock and a propane filler station for more than ten years (as of January 27, 1995). Simcoe District Co-Op was applying to change their gas bar operation from full service to a card lock.
- The full serve gasoline station expired in 2000.
- The card/keylock gasoline station expired in 2000.
- The propane refill centre expired in 2008.
- An inspector's report dated September 29, 2000 indicated tanks on the property included two 22,700 L fibreglass USTs containing regular gasoline, one 22,700 L fibreglass UST containing ethanol, one 22,700 steel UST containing diesel, one 13,600 L steel UST containing premium gasoline, and one 25,000 L steel UST containing diesel. The report indicated that the tanks were installed in 1987.
- Expired fuel tanks identified in the TSSA records include:
    - (i) One 13,600 L steel, liquid fuel single wall UST containing premium gasoline. The tank was installed in 1994 and expired in 2000.
    - (ii) One 22,700 L steel, liquid fuel single wall UST containing diesel. The tank was installed in 1994 and expired in 2000.
    - (iii) One 13,600 L steel, liquid fuel single wall UST containing gasoline. The tank was installed in 1994 and expired in 2000.
    - (iv) One 22,700 L fibreglass, liquid fuel single wall UST containing regular gasoline. The tank was installed in 1994 and expired in 2000.

Five USTs on the property were removed in 2004 under the supervision of Fisher Environmental. There is no current evidence of USTs at 259 Innisfil Street, with the exception of an area which appears to have been excavated. The locations of the tanks removed in 2004 correspond with locations of USTs identified on FIPs available for the Site. The record of expired tanks may include replaced tanks over the years of the gas bar operations. All USTs at the Site (five in total)

were removed during the 2004 excavation, and the original TSSA response indicating nine tanks on the property was incorrect.

(x) Areas of Natural Significance

The Ministry of Natural Resources, Ontario, Natural Heritage Areas database was reviewed. No Natural Heritage Areas were located within the Study Area. Woodland areas are located in the north and west areas of the Site, along the south side of the CNR railway tracks. Woodland areas are also located approximately 100 m north of the Site, west of Short Street.

The City of Barrie Official Plan, Schedule H - Natural Heritage Resources was also reviewed. No areas of Natural Heritage Resources are located within the Study Area.

(xi) Landfills

The Ministry of the Environment publication Waste Disposal Site Inventory, June 1991, was searched for waste disposal facilities located within the Study Area. No records were found within the Study Area. The closest landfill was previously located approximately 320 m northwest of the Site, and was classified as an A5, criteria "humans" waste site, for municipal/domestic wastes in urban areas. The landfill was closed in 1961.

(xii) Notices and Instruments

The Brownfields Environmental Site Registry was searched for references to the Site and surrounding properties. No records were located within the Study Area.

3.3 Physical Setting Sources

(i) Aerial Photographs

Aerial photographs of the Site and Study Area for the years 1954, 1971, 2004, 2006, and 2013 (included as Drawings 4 through 8, respectively, in Appendix A) were reviewed at the York University Scott's Map Library, the City of Barrie Interactive Map website, and at Google Earth. Comments for each photograph are presented in the following table:

Table 7: Aerial Photographs

Year	Site Description	Study Area Description
1954	Due to the scale of the image, it is difficult to depict buildings on the property; however, the Site appears to be developed.	The Study Area is developed and appears to consist of commercial or residential land use. A CNR is located north adjacent to the Site, running east to west, and Lake Simcoe is located approximately 360 m northeast.
1971	The Site is developed with three buildings. A large irregularly shaped building is located towards the northeast property line, at 41 Essa Road. Two buildings are constructed at 43 Essa Road; one square building is located on the central west area of the Site, and one	The north and south adjacent properties are developed with rectangular buildings. Three large buildings occupy the property at 259 Innisfil Street, southwest adjacent to the Site. The north and south sides of Tiffin Street are developed with small residential buildings. A large property with a small

Year	Site Description	Study Area Description
	rectangular building is located on the west area of the Site.	central building is located on the northeast corner of the intersection of Gowan Street and Essa Road.
2004	The buildings at 43 Essa Road on the west area of the Site have been demolished. One rectangular building is developed on the northeast area of the Site.	The building on the south adjacent property has been demolished. The building at the south end of 259 Innisfil Street has been expanded. A very small building has replaced the previously larger rectangular building on the north adjacent property. Large industrial buildings are developed west of the Site.
2007		The building on the west area of 259 Innisfil Street has been demolished. An L-shaped building has been constructed north adjacent to the Site. The development on the north side of Gowan Street has been demolished.
2013	The Site is developed similar to present.	The Study Area is developed similar to present.

(ii) Topography, Hydrology and Geology

Topographic Maps

Topographic maps for the years 1950, 1968, 1986 and 2000 (included as Drawings 9 through 12, respectively, in Appendix A) were reviewed at the York University Library.

The property is located approximately 227 m above sea level. Topographic maps show surface elevation to be decreasing in a north easterly direction. Based on our observations and review, the expected direction of groundwater flow in the immediate area of the Site is northeast following surface topography towards Kempenfelt Bay, located approximately 360 m northeast of the Site.

Table 8: Topographic Maps

Year	Site Description	Study Area Description
1950	A building appears to be indicated towards the northeast area of the Site, adjacent to Essa Road.	The Study Area is developed. A CNR railway line traverses the north property line of the Site. Buildings are depicted west and southwest of the Site, on the east side of Innisfil Street. Small, densely developed buildings are located on the east and west sides of Essa Road, the north and south of Tiffin Street, and the east and west sides of Bradford Street. Kempenfelt Bay is located northeast of the Site, and wetland areas are located along the west shore.
1968	The Site is included in a developed area, buildings are not depicted.	The Study Area is located in a largely residential area. Churches are indicated south of the Site, and towards the southeast of the Study Area.
1986		A large rectangular building is developed south adjacent to the Site at 259 Innisfil Street. A feed mill is indicated west of Innisfil Street. Water sewage is indicated northeast of the Site adjacent to Kempenfelt Bay.
2000		Power transmission stations are indicated west adjacent to the Site.

Soil and Geological Maps

The Palaeozoic Geology of Southern Ontario, Map 2254, Ontario Division of Mines and the Soil Associations of Southern Ontario Soil Map, were available for review online.

The geological maps reviewed indicate that the Site and Study Area are characterized by the Middle Ordovician, Simcoe Group (Trenton- Black River) with limestone from the Lindsay Formation. The soil map identifies the soil in the Study Area to be dominantly course textured loamy sandy soils from the Tioga or Vasey family.

Hydrology and Hydrogeology

Surface water from the Site is expected to run into catch basins located in the centre of the lot on Site.

Topographic maps show surface elevations to be decreasing in a north easterly direction. Kempenfelt Bay of Lake Simcoe is located approximately 360 m northeast. Based on our observations and review, the expected direction of groundwater flow in the immediate area of the Site is northeast, following surface topography towards Kempenfelt Bay.

(iii) Fill Materials

Fill materials are not expected to be present in large quantities.

(iv) Water Bodies and Areas of Natural Significance

The Ministry of Natural Resources, Ontario, Natural Heritage Areas database, and the City of Barrie Official Plan, Schedule H - Natural Heritage Resources were reviewed. No water bodies or areas of natural significance are located within the Study Area.

(v) Well Records

The Ministry of the Environment and Climate Change, Water Well Help Desk, Environmental Monitoring and Reporting Branch website was searched for well records for the Site and surrounding area. Well records are included in Appendix F and the search results are presented below:

- A monitoring well record located on the southwest adjacent property to the Site identified surrounding soil types as brown sand to depths up to 31.0 m below ground surface (bgs), underlain by grey clay between depths of 31.0 and 33.8 m bgs, and brown sand between depths of 33.8 and 82.6 m bgs. Groundwater was encountered at 7.2 m bgs.

- A monitoring well record located approximately 70 m north of the Site identified the surrounding soil types as brown sand to depths up to 4.27 m bgs. The groundwater level was not listed.

- A monitoring well record located approximately 100 m north of the Site identified the surrounding soil types as brown sandy silt to depths up to 7.5 m bgs, underlain by grey sand and silt from depths of 7.5 to 16 m bgs. Fresh groundwater was encountered at 5.2 m bgs.

3.4 Site Operating Records

Site Operating Records were requested by G2S at the time of this Phase One ESA report. The following chart summarizes the availability of the records.

Site Operating Records	
Regulatory Permits and Records	No records provided
Material Safety Data Sheets	No records provided
Underground Utility Drawings	No records provided
Chemical Inventory and Storage	No records provided
Storage Tanks	No records provided
Environmental Monitoring Data	No records provided
Waste Management Records	No records provided
Process, Production and Maintenance Documents	No records provided
Spills and Discharges	No records provided
Emergency Response and Contingency Plans	No records provided
Environmental Audit Reports	No records provided
Facility Site Plans	No records provided

4. Interviews

4.1 Site Personnel

The Site visit was conducted with Site Representative and owner of the property, Mr. George Dangerfield, on January 18, 2018. Mr. Dangerfield completed a Phase One Questionnaire, provided in Appendix H.

4.2 Third Party Individuals

Third party individuals were not available for interview at the time of this Phase One ESA.

4.3 Government Officials

The following government officials were contacted as part of this Phase One ESA:

1. Ministry of the Environment and Climate Change, Freedom of Information and Protection of Privacy Office; and

2. Technical Standards and Safety Authority.

5. Site Reconnaissance

5.1 General Requirements

Ms. Jessica Boelhouwer, B.Sc. and Ms. Dana Haslett, B.A. of G2S conducted a Phase One ESA Site visit at 41 & 43 Essa Road, Barrie, Ontario. The purpose of the Site reconnaissance was to assess the current conditions of the Site, adjacent and surrounding properties to the extent practicable. The following table provides details regarding the Site visit:

Table 9: Site Reconnaissance

Date	January 18, 2018
Time	12:00 p.m.
Length of Site Visit	0.5 hour
Weather	Cloudy, approximately -8° Celsius
Person who conducted the Site visit	Jessica Boelhouwer, B.Sc., Dana Haslett, B.A.
Qualified Person supervising the Site visit	Jacky So, P.Eng.
Facility Operating: Yes/No	No

Observations of the Site, adjacent and surrounding properties were conducted by walking over the Site. Adjacent and surrounding properties were observed from within the Site or by other public means.

(i) Site Limitations

G2S did not encounter any limitations at the time of the Site visit.

(ii) Property Use, Buildings and Structures

The Site is currently developed with a rectangular single storey, slab on-grade building located along the northeast property line of the Site. The building consists of a large, open space in the west area, including a stage in the center, a seating bench along the south wall, and a bar in the northeast corner. The east area of the building consists of a kitchen and washroom. The Site is approximately 0.57 hectares (1.41 acres) in size. Entrance to the Site is accessed via Essa Road.

(iii) Locations of Current and Former Wells

G2S did not identify any wells at the time of our Site visit.

(iv) Sewage Works

The Site is serviced with municipal water and sewer.

(v) Ground Surface

The central, south and west areas of the Site are vacant and assumed to be covered in asphalt and/or gravel as ground surface observations were limited due to snow cover.

(vi) Current or Former Railway Lines or Spurs

No railway lines or spurs were identified on-Site. A CNR rail line traverses southwest to northeast across the northern property line of the Site. No staining was observed near the property line.

(vii) Areas of Stained Soil, Vegetation or Pavement

Areas of stained soil, vegetation or pavement were not observed at the time of the Site visit.

(viii) Stressed Vegetation

Areas of stressed vegetation were not observed at the time of the Site visit.

(ix) Fill and Debris Materials

Fill or debris materials were not observed at the time of the Site visit.

(x) Potentially Contaminating Activities On-Site

Potentially Contaminating Activities were not observed on-Site.

(xi) Unidentified Substances

No unidentified substances were located on-Site.

(xii) Below Ground Structures

Utilities locations have not been identified as part of the Phase One ESA. Fill and vent pipes were observed on the west exterior of the Site building, near the southwest corner.

(xiii) Storage Tanks

Storage tanks were not observed on-Site. The Phase One Questionnaire completed by Site Representative, Mr. Dangerfield, indicated that an underground gasoline tank used to fuel vehicles was located on-Site. According to the Mr. Dangerfield, the tank was removed in 1986.

(xiv) Material Storage

No bulk storage is currently located on-Site.

(xv) Hazardous Materials

No hazardous materials were identified during the Site visit.

(xvi) Potable and Non-Potable Water Sources

Water is supplied to the Site by the City of Barrie.

(xvii) Waste Management

Waste is not currently generated on-Site.

(xviii) Underground Utilities

Records or drawings of underground utilities were not available at the time of this report.

(xix) Interior Building Features

The building is heated with natural gas. Flooring materials throughout the building generally consist of ceramic tile and concrete. Ceilings are comprised of suspended ceiling tile, and walls consist of drywall and concrete block. Fluorescent lighting is found throughout the building.

(xx) Exterior Features

Exterior building materials include concrete block, brick, and metal deck. HVAC equipment was observed on the roof of the building.

(xxi) Surrounding Properties

The following PCAs were identified within the Study Area.

Table 10: Current Surrounding Property Use, Potentially Contaminating Activities

Address	Direction and Distance from Site	Potentially Contaminating Activity	Description	Contaminants of Potential Concern
259-273 Innisfil Street	Southwest adjacent	Commercial Autobody Shop, Gasoline and Associated Products Storage in Fixed Tanks, Transformer Manufacturing, Processing and Use	Get Moore Auto Service Inc.; five ASTs and a transformer were observed on the property	Metals, PHCs, VOCs, PCBs
No Address	North adjacent	Rail Yards, Tracks and Spurs	CNR rail line traverses southwest to northeast	PAHs, PHCs
64 Essa Road	~80 m south	Gasoline and Associated Products Storage in Fixed Tanks	Esso Gas Station	PHCs, BTEX, Metals
57 Essa Road	~50 m south	Operation of Dry Cleaning Equipment	Laundromat	VOCs
9 Gowan Street	~50 m east	Commercial Autobody Shop	Oil Tech Auto Rust Control Centre	Metals, PHCs, VOCs

Address	Direction and Distance from Site	Potentially Contaminating Activity	Description	Contaminants of Potential Concern
250 Innisfil Street	~100 m west	Operation of Dry Cleaning Equipment	Fix Em Up Shoe Repair & Dry Cleaning	VOCs
17 Gowan Street	~110 m east	Commercial Autobody Shop	Craft Auto Repair Service	Metals, PHCs, VOCs
84 Tiffin Street	~125 m northwest	Commercial Autobody Shop	Do It Yourself Garage	Metals, PHCs, VOCs
81 Essa Road	~125 m south	Commercial Autobody Shop	Peacock Auto Service Ltd.	Metals, PHCs, VOCs
280 Innisfil Street	~160 m southwest	Commercial Autobody Shop	Beatty Automotive Services Inc.	Metals, PHCs, VOCs
94 Tiffin Street	~175 m northwest	Paints Manufacturing, Processing and Bulk Storage	California Paints, Para Paints	VOCs
249 Bradford Street	~200 m north	Treatment of Sewage equal to or greater than 10,000 L per day	Wastewater Treatment Facility	Metals, PHCs, PAHs
305 Innisfil Street	~215 m southwest	Commercial Autobody Shop	Peacock Auto Service Ltd.	Metals, PHCs, VOCs
100 Tiffin Street	~230 m northwest	Commercial Autobody Shop	Bent by Kent	Metals, PHCs, VOCs

Notes: PHCs - Petroleum Hydrocarbon
VOCs - Volatile Organic Compounds
PAHs – Polycyclic Aromatic Hydrocarbons

5.2 Enhanced Investigation Property

An enhanced investigation of the Site is necessary when the property is being used for one of the following uses as described in clause 32 (1) (b) of Ontario Regulation 153/04 of the EPA. Clause 32 (1) (b) identifies properties that are being used in whole or in part for:

i. For industrial use
ii. As a garage
iii. As a bulk liquid dispensing facility including gasoline service station
iv. For the operation of dry cleaning equipment.

Due to the historical use of the Site as a garage and as a bulk liquid dispensing facility, an enhanced investigation of the property was completed.

(i) Operations of the Property

The Site is currently occupied by a vacant building. Vernon's Directories for the City of Barrie first list the Site as vacant in 1927. City directories indicate that Reynold's Super Service Station and Reynold's Collision Repair occupied the Site (41 Essa Road) in 1963.

(ii) Products Manufactured

No products are currently being manufactured on-Site.

(iii) By-Products and Wastes

The Site is not currently registered on the Hazardous Waste Information Network (HWIN).

(iv) Raw Materials Handling and Storage Locations

No raw materials are currently stored on-Site.

(v) Drums, Totes, and Bins

No drums, totes, or bins are currently stored on-Site.

(vi) Oil Water Separators

No oil water separators were observed at the time of the Site visit.

(vii) *Vehicle and Equipment Maintenance Areas*

There are currently no designated vehicle and/or equipment maintenance areas on-Site.

(viii) Spills

No areas of staining were observed on-Site.

(ix) Liquid Discharge Points

No liquid discharging points were observed on-Site.

(x) Processing and Manufacturing Equipment used in Property Operations

No processing or manufacturing equipment are used in current property operations of the Site.

(xi) Hydraulic Lift Equipment

No hydraulic lift equipment was observed on-Site.

5.3 Description of Investigation

The investigation included a walkthrough of the Site. No PCAs were identified on-Site.

5.4 Special Attention Items

(i) Polychlorinated Biphenyls

Polychlorinated Biphenyls (PCBs) were widely used for cooling and lubricating electrical equipment from the 1930s to the 1970s. The use of PCBs was prohibited in the late 1970s.

Potential PCB containing equipment observed on-Site includes a refrigerator stored in the kitchen in the east area of the Site building.

(ii) Asbestos Containing Materials

Asbestos is a generic term referring to a group of naturally occurring fibrous mineral silicates. Asbestos was used in many products due to its strength and resistance characteristics. Common uses include boiler and pipe insulation, spray-on fireproofing, floor and ceiling tiles, asbestos-cement products, etc. Legislation banned the use of asbestos-containing materials (ACMs) in the mid to late 1980s.

Due to the age of the building, there is the potential for ACMs to be present in the building materials. Potential ACM-containing building materials include floor and ceiling tiles, and drywall joint compound.

(iii) Lead

Lead is a heavy metal typically found in pipes, batteries, lead solder, cabling, insecticides, paints, glass and as an additive to gasoline. In 1976, the federal government limited the amount of lead for interior paints to 0.5% by weight or 5,000 ppm. The Surface Coating Materials Regulation (SOR/2005-109) dated April 19, 2005, as amended, pursuant to the 2005 Hazardous Products Act, revised the standard to limit the amount of lead in certain paints to 0.06% (600 ppm). In October 2010, this was revised to 0.009 % (90 ppm).

Due to the age of the building, there is the potential for lead based paint to be present on-Site.

(iv) Mercury

Mercury is typically found in a variety of building materials including paints, thermostats and mercury-vapour lamps.

Potential mercury-containing materials may be located on-Site.

(v) Ozone Depleting Substances

Ozone-depleting Substances (ODSs) include any substances containing chlorofluorocarbon ("CFCs"), hydro chlorofluorocarbon ("HCFCs"), halon or any other material capable of destroying ozone in the atmosphere. Federal regulations eliminated the production and import of CFCs by January 1st, 1996 and a freeze on the production and import of HCFC-22 by January 1st, 1996. This regulation also requires the complete replacement of HCFC-22 equipment by the year 2020.

Potential ODS containing equipment may be located on-Site.

(vi) Urea Formaldehyde Foam Insulation

Urea Formaldehyde Insulation (UFFI) was used as an insulation material for existing buildings (commonly houses) from the mid-1970s until its ban in Canada in 1980.

Evidence of UFFI use was not observed on-Site at the time of our Site visit.

(vii) Mould

No areas of mould or potential mould were observed during the Site visit.

6. Review and Evaluation of Information

(i) Current and Past Site Uses

The current and past Site uses are summarized in the following table:

Table 11: Site Uses

Site		
Address	**Property Use**	**Years Occupied**
41 Essa Road	Vacant	~2016-Current
	Spotlight	~2012-~2016
	Aladdin Banquet and Meeting Centre	1996-~2012
	Factory Carpets of America	1994
	U Buy Discount Foods	1990
	A&M Super Discount Mart Ltd.	1976-1982
	Red and White Foodmaster	1969
	Reynold's Super Service Station, Reynold's Collision Repair	1963
	Residential	1907-1946
43 Essa Road	Vacant	Current
	Barrie Drive A Car, Barrie Leasing and Drive a Car, Hertz Rent a Car	1976-1982
	Hertz Rent a Car, Barrie Drive a Car Co.	1976-1982
	Horne, E.	1976-1982
	Dangerfield Holdings	1976
	Howden and Forrest Manufacturers	1969
	Cooke Cartage and Storage	1952- 1963
	Badgley, M. F.	1962
	Cooke, L. E. & S. J.	1952
	Allandale Lumber & Fuel Co. Ltd.	1946
	Sloane, W. H.	1942
	Barnes, G. H.	1937
	Cripps, G.	1930-1933
	Vacant	1927

(ii) Potentially Contaminating Activities

The properties located within the Study Area include residential, commercial, and industrial facilities, several of which pose an environmental risk to the Site. These facilities include the following Potentially Contaminating Activities (PCAs), as defined in the amended O. Reg. 153:

- Asphalt and Bitumen Manufacturing

- Commercial Autobody Shop
- Commercial Trucking and Container Terminals
- Concrete, Cement and Lime Manufacturing
- Fertilizer Bulk Storage
- Garages and Maintenance and Repairs of Railcars, Marine Vehicles and Aviation Vehicles
- Gasoline and Associated Products Storage in Fixed Tanks
- Metal Fabrication
- Operation of Dry Cleaning Equipment (where chemicals are used)
- Paints Manufacturing, Processing, and Bulk Storage
- Rail Yards, Tracks, and Spurs
- Salvage Yard including Automobile Wrecking
- Transformer Manufacturing, Processing and Use
- Treatment of Sewage Equal to of Greater than 10,000 L per day
- Wood Treating and Preservative Facility and Bulk Storage of Treated and Preserved Wood Products

Table 12: Potentially Contaminating Activities – Risk to Site

Address Direction and Distance from Site	Potentially Contaminating Activity	Description	Years Occupied	Contaminant of Potential Concern	PCA - Risk to Site
41 Essa Road Site	Gasoline and Associated Products Storage in Fixed Tanks, Commercial Autobody Shop	City directories list Reynold's Supertest Service Station and Reynold's Collision Repair. Site Rep indicated historical presence of UST.	1963-1984	Metals, PHCs, BTEX, VOCs	High, on-Site activities; use of property as a gasoline service station and as an autobody repair shop
43 Essa Road Site	Gasoline and Associated Products Storage in Fixed Tanks	FIP identifies Allandale Lumber & Fuel Co. Ltd.	1946	PHCs, Metals	High, on-Site activities
35 Essa Road North adjacent	Operation of Dry Cleaning Equipment, Commercial Autobody Shop	1931 and 1946 FIPs identify building as Chinese Laundry and 1971 FIP identifies Laundromat. City directories list Wagg's Laundry and Dry Cleaners, Allandale Laundry, Fong Laundry, Lem Bro Laundry, and Londry Motors and Used Cars. Vent pipe identified on west side of building during Site visit.	1937-1971	Metals, PHCs, VOCs	High, close proximity to Site, long-term use of the property as a dry cleaner with the use of halogenated solvents
259-273 Innisfil Street Southwest adjacent	Gasoline and Associated Products Storage in Fixed Tanks, Commercial Autobody Shop, Rail Yards, Tracks and Spurs, Transformer Manufacturing, Processing and Use	1931 and 1946 FIPs identify two aboveground oil storage tanks on northwest area, and CNR rail line extending onto property, 1971 FIP identifies four USTs along west-central property line, and two ASTs along north-central property line. Sun Oil Co. listed in city directories (HWIN, ER). Property currently occupied by Get Moore Auto Service Inc.; ASTs and transformer located on property.	1931-2004, <2012-Current	Metals, PAHs, PHCs, VOCs, PCBs	High, close proximity to Site, up-gradient with respect to potential groundwater flow, long term use of the property for industrial activities
49 Essa Road ~20 m south	Gasoline and Associated Products Storage in Fixed Tanks, Wood Treating and Preservative Facility and Bulk	FIP identifies property as Allandale Lumber, Fuel & Construction Co. Ltd., two fuel oil ASTs indicated. City directories list Allandale Lumber Co. Fuel and Construction Co. Ltd.	1942-1976	PHCs, BTEX, Metals	High, close proximity to Site, up-gradient with respect to potential groundwater flow, long-term use of oil products on property

Address Direction and Distance from Site	Potentially Contaminating Activity	Description	Years Occupied	Contaminant of Potential Concern	PCA - Risk to Site
	Storage of Treated and Preserved Wood Products				
34 Essa Road ~20 m east	Gasoline and Associated Products Storage in Fixed Tanks	FIPs indicate Oil Shed towards east property line; UST identified west of building on Essa Road on 1931 & 1946 FIPs.	1931-1946	PHCs, BTEX, Metals	Moderate, close proximity to Site, trans-gradient with respect to potential groundwater flow
40 Essa Road (formerly 37 Essa Road) ~20 m east	Gasoline and Associated Products Storage in Fixed Tanks	FIP indicates Oil Storage Building on property.	1907	PHCs, BTEX, Metals	Moderate, close proximity to Site, trans-gradient with respect to potential groundwater flow
48 Essa Road (formerly 46 Essa Road) ~20 m east	Commercial Autobody Shop, Gasoline and Associated Products Storage in Fixed Tanks	FIPs identifies property as Garage & Auto Repairs, and USTs on the road adjacent to property. City directories list Pither Garage, Jenkin's Garage, Hunter JT Garage.	1931-1963	Metals, PHCs, VOCs	Moderate, close proximity to Site, trans-gradient with respect to potential groundwater flow
No Address North adjacent	Rail Yards, Tracks and Spurs	CNR rail line traverses northern property line of Site.	1907-Current	PAHs	Low, close proximity to Site, no staining observed near rail tracks
21 Essa Road ~40 m northeast	Commercial Autobody Shop	City directories list Allandale Motors. Tri-Star Pharmacies listed on HWIN (2002-2004).	1962, 2002-2004	PHCs, Metals, VOCs	Low, short tenure, trans-gradient with respect to potential groundwater flow
5 Gowan Street (formerly 45 Gowan Street) ~45 m east	Operation of Dry Cleaning Equipment	FIP identifies building as Chinese Laundry.	1907	VOCs	Low, moderate distance from Site, short tenure, trans-gradient with respect to potential groundwater flow
9 Gowan Street ~50 m east	Salvage Yard, including Automobile Wrecking, Asphalt and Bitumen Manufacturing, Metal Fabrication, Commercial Autobody Shop	FIP identifies building as Auto Wreckers. City directories list Topcoat Asphalt Sealing, Bikeland Rust Control Centre, Allandale Auto Wreckers, Carter Autowreckers. Property currently occupied by Oil Tech Rust Control Centre (HWIN Records).	1931-Current	Metals, PHCs, VOCs, PAHs	Low, moderate distance from Site, trans-gradient with respect to potential groundwater flow

Address Direction and Distance from Site	Potentially Contaminating Activity	Description	Years Occupied	Contaminant of Potential Concern	PCA - Risk to Site
57 Essa Road ~50 m south	Operation of Dry Cleaning Equipment	Property currently occupied by Laundromat.	Current	VOCs	Low, moderate distance from Site, short tenure
62 Essa Road ~75 m south	Gasoline and Associated Products Storage in Fixed Tanks, Commercial Autobody Shop	1946 FIP identifies property as Gasoline Service Station; three USTs identified along the south side of the property. 1971 FIP identifies property as Auto Service and indicates one UST in the center of the property. City directories list Fitzpatrick's Service Centre, McBride's Gulf Service Station, Giles Service Station.	1946-1982	Metals, PHCs, BTEX	Low, moderate distance from Site, trans-gradient with respect to potential groundwater flow
64 Essa Road (formerly 62 Essa Road) ~80 m south	Gasoline and Associated Products Storage in Fixed Tanks	City directories list Mustard R. Service Station, Edge Hazen Service Station. Property currently occupied by Esso Gas Station.	1937-1942, 1971-Current	PHCs, BTEX, Metals	Low, moderate distance from Site, trans-gradient with respect to potential groundwater flow
13 Gowan Street ~90 m east	Commercial Autobody Shop	FIP identifies building as Auto Body Shop; large coal storage building indicated. City directories list Carter Body and Fender Shop, Carter A&N Auto Accessories.	1907, 1937, 1952-1971	PHCs, Metals, VOCs	Low, moderate distance from Site, trans-gradient with respect to potential groundwater flow.
250 Innisfil Street (formerly 87 Tiffin Street) ~100 m west	Gasoline and Associated Products Storage in Fixed Tanks, Fertilizer Bulk Storage, Operation of Dry Cleaning Equipment	FIP identifies Oil Warehouse, Fertilizer Storage Warehouse and one UST at the northwest area of the property. Property currently occupied by Fix Em Up Shoe Repair & Dry Cleaning.	1931, 1946, 1971, Current	PHCs, BTEX, Metals, Pesticides, VOCs	Low, moderate distance from Site, trans-gradient with respect to potential groundwater flow
17 Gowan Street ~110 m east	Commercial Auto Body Shop, Gasoline and Associated Products in Fixed Storage	FIP identifies building as Auto Sales & Repairs; UST indicated in the center of the property. City directories list Autoworks, Huronia Ford Collision Centre, Johston Kery Motors Ltd., Viau Motors, McKinnon Beswetherick Garage. Property	1952-1999, Current	Metals, PHCs, VOCs	Low, moderate distance from Site, trans-gradient with respect to potential groundwater flow

Address Direction and Distance from Site	Potentially Contaminating Activity	Description	Years Occupied	Contaminant of Potential Concern	PCA - Risk to Site
		currently occupied by Craft Auto Repair Service.			
272 Innisfil Street ~110 m southwest	Gasoline and Associated Products Storage in Fixed Tanks, Wood Treating and Preservative Facility and Bulk Storage of Treated and Preserved Wood Products, Metal Fabrication	FIP identifies building as Ontario Hog Producers; one vertical AST identified on property. City directories list No Dip Furniture Stripping and Refinishing, Vespra Valley Heating – Sheet Metal. Frantic Freddy's listed on HWIN (1986-1993).	1971, 1982-1999	PHCs, VOCs, Metals	Low, large distance from Site, short tenure
81 Essa Road ~125 m south	Commercial Autobody Shop	FIP identifies building as Car Sales & Repairs. City directories list B&K Auto, Auto Serive, Huronia Ford, Pierre Motors. Property currently occupied by Peacock Auto Service Ltd.	1963-Current	Metals, PHCs, VOCs	Low, large distance from Site
84 Tiffin Street ~130 m northwest	Commercial Autobody Shop, Gasoline and Associated Products Storage in Fixed Tanks	FIP identifies building as Auto Service, one UST indicated towards east property line. City directories list Stroud Motor Garage, B&K Auto Service, Mooney's Auto Glass & Radiator Ltd., Texaco Service Station. Property currently occupied by Do It Yourself Garage.	1969-1971, 1999-Current	Metals, PHCs, VOCs, BTEX	Low, large distance from Site
91 Tiffin Street ~130 m west	Gasoline and Associated Products Storage in Fixed Tanks	1931 and 1946 FIPs identify property as McColl Frontenac Oil Co. Ltd.; four aboveground oil tanks indicated in the centre of the property, 1971 FIP identifies property as occupied by Texaco Canada Ltd.; nine aboveground fuel oil tanks identified on the center of the property, two diesel USTs towards the north area of the property and Oil Warehouse	1931-Current	PHCs, BTEX, Metals	Low, large distance from Site

Address Direction and Distance from Site	Potentially Contaminating Activity	Description	Years Occupied	Contaminant of Potential Concern	PCA - Risk to Site
		adjacent to the east property line. City directories list Huronia Fuels, Texaco Canada Ltd. (HWIN Records 1986-1993).			
89 Tiffin Street ~145 m west	Gasoline and Associated Products Storage in Fixed Tanks	City directories list McColl Frontenac Oil Co. Ltd., and Baldwin Ernest Marathon Oil Co.	1937-1942	PHCs, BTEX, Metals	Low, large distance from Site, short tenure
91 Essa Road ~150 m south	Gasoline and Associated Products Storage in Fixed Tanks	City directories list Mike's Service Centre, Cunnington's Texaco Service, and Texaco	1976-1990	PHCs, BTEX, Metals	Low, large distance from Site
252-254 Bradford Street ~150 m northeast	Gasoline and Associated Products Storage in Fixed Tanks	FIPs identify property as Gasoline Service Station; two USTs indicated towards the east property line	1931, 1946	PHCs, BTEX, Metals	Low, large distance from Site, down-gradient with respect to potential groundwater flow
280 Innisfil Street ~160 m southwest	Commercial Trucking and Container Terminals, Gasoline and Associated Products in Fixed Storage, Commercial Autobody Shop	FIP identifies Truck Maintenance, Storage Yard and two diesel USTs on property. City directories list Klassy Car, Rennick Auto Centre. Property currently occupied by Beatty Automotive Services Inc.	1971, 1982-Current	Metals, PHCs, BTEX	Low, large distance from Site
278 Bradford Street ~160 m northeast	Gasoline and Associated Products in Fixed Storage	FIP identifies UST on southern property line	1971	PHCs	Low, large distance from Site, down-gradient with respect to potential groundwater flow
230 Innisfil Street ~165 m northwest	Operation of Dry Cleaning Equipment	City directories list Wash and Dry Coin Laundry.	1996-1999	VOCs	Low, large distance from Site, short tenure
94 Tiffin Street ~180 m northwest	Commercial Autobody Shop, Paints Manufacturing, Processing and Bulk Storage	FIP identifies building as Auto Repairs. City directories list Simcoe Sports Car, Ray Simcoe Motors Ltd. Labar Sales & Distribution listed on HWIN 2014-Current. Property	1963-1976, Current	Metals, PHCs, VOCs	Low, large distance from Site

Address Direction and Distance from Site	Potentially Contaminating Activity	Description	Years Occupied	Contaminant of Potential Concern	PCA - Risk to Site
		currently occupied by California Paints, Para Paints.			
17 Jacobs Terrace ~195 m southwest	Commercial Autobody Shop	City directories list No Name Autobody (HWIN Records 1993), A-1 Auto Body (HWIN Record 1993).	1976-1999	PHCs, VOCs, Metals	Low, large distance from Site
232 Bradford Street ~200 m northeast	Commercial Autobody Shop	FIP identifies property as Auto Service	1946	PHCs, VOCs, Metals	Low, large distance from Site, short tenure, down-gradient with respect to potential groundwater flow
235 Bradford Street ~200 m northeast	Gasoline and Associated Products in Fixed Storage	FIPs identify building as Gasoline Service Station; three USTs identified adjacent to Bradford Street	1931, 1946	PHCs, BTEX, Metals	Low, large distance from Site, short tenure, down-gradient with respect to potential groundwater flow
249 Bradford Street ~200 m northeast	Treatment of Sewage equal to or greater than 10,000 litres per day	Property currently occupied by the Corporation of the City of Barrie Wastewater Treatment Facility (NPRI Registry, EBR Registry, HWIN Records).	2001-Current	Metals, PHCs, PAHs, VOCs	Low, large distance from Site, short tenure, down-gradient with respect to potential groundwater flow
285 Bradford Street ~210 m northeast	Garages and Maintenance and Repairs of Railcars, Marine Vehicles, and Aviation Vehicles	CNR Freight Sales, Via Rail Canada	1982-1990	Metals, PAHs, PHCs	Low, large distance from Site, short tenure, down-gradient with respect to potential groundwater flow
113 Tiffin Street ~215 m west	Concrete, Cement and Lime Manufacturing, Gasoline and Associated Products in Fixed Storage	FIP identifies property occupied by Simcoe Block Co. Ltd. Concrete Block Manufacturing; one aboveground storage tank identified on southwest area of property.	1963-1971	Metals, PHCs, VOCs	Low, large distance from Site, short tenure
224 Bradford Street (formerly 226 Bradford Street) ~215 m north	Gasoline and Associated Products Storage in Fixed Tanks, Commercial Autobody Shop	1931 and 1946 FIPs identify property as Gasoline Service Station; USTs surround the building (eight USTs in 1946, four USTs in 1931), 1971 FIP identifies property	1952-1999	PHCs, BTEX, Metals, VOCs	Low, large distance from Site, short tenure, down-gradient with respect to potential groundwater flow

Address Direction and Distance from Site	Potentially Contaminating Activity	Description	Years Occupied	Contaminant of Potential Concern	PCA - Risk to Site
		as Auto Service; one UST indicated east of the building. City directories list Zietbart Tidy Car, Zietibart Auto Truck Rustproofing, Paul's Sunoco, Sinclair Sunoco Service.			
305 Innisfil Street ~215 m southwest	Commercial Autobody Shop	Property currently occupied by Peacock Auto Service Ltd.	Current	PHCs, VOCs, Metals	Low, large distance from Site, short tenure
100 Tiffin Street ~230 m northwest	Commercial Autobody Shop, Gasoline and Associated Products Storage in Fixed Tanks	City directories list A-1 Automotive Service, D&D Auto and Cycle Repair, McColl Frontenac Oil Co. Ltd. Property currently occupied by Bent by Kent.	1952, 1990-1999, Current	PHCs, BTEX, Metals, VOCs	Low, large distance from Site
123 Tiffin Street (formerly 127 Tiffin Street) ~245 m west	Gasoline and Associated Products Storage in Fixed Tanks	City directories list Esso Home Comfort, Four Stars Fuels, Imperial Oil Ltd.; fuel oil ASTs indicated on property.	1931-1999	PHCs, BTEX, Metals	Low, large distance from Site
44 Gowan Street ~250 m east	Operation of Dry Cleaning Equipment	FIP identifies building as Chinese Laundry.	1907	VOCs	Low, large distance from Site, trans-gradient with respect to potential groundwater flow

Notes: PHCs– Petroleum Hydrocarbons
VOCs – Volatile Organic Compounds
BTEX - Benzene, Toluene, Ethylbenzene, Xylenes
PCBs – Polychlorinated Biphenyls
AST – Aboveground Storage Tank
UST - Underground Storage Tank
PAHs – Polyaromatic Hydrocarbons

(iii) Areas of Potential Environmental Concern

Table 13: Areas of Potential Environmental Concern

APEC		Location of APEC on Phase One Property	Potentially Contaminating Activity	Location of PCA (on-site or off-site)	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater soil and/or sediment)
1	Historical use of the Site as a service station and an autobody shop; indication of historical presence of UST. Fill and vent pipes observed on west side of Site building.	East area of the Site	1a) 10 - Commercial Autobody Shop 1b) 28 - Gasoline and Associated Products Storage in Fixed Tanks	On-Site: 41 Essa Road	Metals, PHCs, BTEX, VOCs	Soil, Groundwater
2	Historical use of the Site by Allandale Lumber & Fuel Co. Ltd.	West area of the Site	2a) 28 – Gasoline and Associated Products Storage in Fixed Tanks	On-Site: 43 Essa Road	Metals PHCs, BTEX, PAHs	Soil, Groundwater
3	Historical use of the property located north adjacent as a dry cleaner and as an autobody shop. Fill and vent pipes observed on the west side of the building.	North portion of the Site	3a) 10 – Commercial Autobody Shop 3b) 37 - Operation of Dry Cleaning Equipment (where chemicals are used)	Off-Site: 35 Essa Road	Metals, PHCs, VOCs	Soil, Groundwater
4	Historical presence of UST and AST storage on the property. Current use of the property as an autobody shop including current presence of ASTs.	Southwest portion of the Site	4a) 10 – Commercial Autobody Shop 4b) 28 – Gasoline and Associated Products Storage in Fixed Tanks	Off-Site: 259-273 Innisfil Street	Metals, PAHs, PHCs, VOCs	Soil, Groundwater
5	Historical use of the property located ~20 m south by Allandale Lumber, Fuel & Construction Co. Ltd., including historical presence of ASTs on the property.	South portion of the Site	5a) 28 – Gasoline and Associated Products Storage in Fixed Tanks	Off-Site: 49 Essa Road	Metals, PHCs, BTEX	Soil, Groundwater

APEC		Location of APEC on Phase One Property	Potentially Contaminating Activity	Location of PCA (on-site or off-site)	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater soil and/or sediment)
7	Historical use of the properties located ~20 m east for oil storage.	East portion of the Site	7a) 28 – Gasoline and Associated Products Storage in Fixed Tanks	Off-Site: 34 Essa Road, 40 Essa Road	Metals, PHCs, BTEX	Soil, Groundwater
8	Historical use of the property located ~20 m east as an autobody shop, and historical presence of USTs on Essa Road adjacent to the property.	East portion of the Site	8a) 10 – Commercial Autobody Shop 8b) 28 – Gasoline and Associated Products Storage in Fixed Tanks	Off-Site: 48 Essa Road	Metals, PHCs, VOCs	Soil, Groundwater

Notes: PHCs– Petroleum Hydrocarbons
VOCs – Volatile Organic Compounds
PAHs - Polycyclic Aromatic Hydrocarbons
UST - Underground Storage Tank
AST - Aboveground Storage Tank
BTEX – Benzene, Toluene, Ethylene, Xylene

7. Phase One Conceptual Site Model

The irregular shaped Site is located on the west side of Essa Road, approximately 125 m southwest of the intersection with Tiffin Street and approximately 280 m northeast of the intersection of Essa Road and Innisfil Street (as shown on Drawing 1). The Site is located in a setting consisting generally of commercial land use. Residential areas are located southeast, north, and northwest of the Site. Kempenfelt Bay of Lake Simcoe is located approximately 360 m northeast, and a CNR railway line traverses southwest to northeast across the north property boundary of the Site.

The Site is currently developed with a rectangular single storey, slab on-grade building located along the northeast property line of the Site. The building consists of a large, open space in the west area, including a stage in the center, a seating bench along the south wall, and a bar in the northeast corner. The east area of the building consists of a kitchen and washroom. The central, south and west areas of the Site are vacant and assumed to be covered in asphalt and/or gravel as ground surface observations were limited due to snow cover. The Site is approximately 0.57 hectares (1.41 acres) in size. Entrance to the Site is accessed via Essa Road.

After review of current and historical use of the Site, PCAs were identified on the property and include commercial autobody shop; and gasoline and associated products storage in fixed tanks. Contaminants of concern from on-Site activities include metals, PHCs including BTEX, VOCs, metals, and PAHs.

Historical review of the surrounding properties within a 250 m radius of the Site identified several PCAs and APECs. High risk activities associated with the properties located to the north include operation of dry cleaning equipment (where chemicals are used); and commercial autobody shop. High risk activities associated with the southwest adjacent property include commercial autobody shop; and gasoline and associated products storage in fixed tanks. High risk activity associated with the south adjacent property includes gasoline and associated products storage in fixed tanks. Medium risk activities associated with the properties east of the Site include gasoline and associated products storage in fixed tanks; and commercial autobody shop. Contaminants of concern from off-Site sources include metals, PHCs, VOCs, PAHs, and BTEX. Contaminants may potentially migrate to the Site through groundwater flow.

The property is located approximately 227 m above sea level. Topographic maps show surface elevation to be decreasing in a north easterly direction. Based on our observations and review, the expected direction of groundwater flow in the immediate area of the Site is northeast following surface topography towards Kempenfelt Bay, located approximately 360 m northeast of the Site.

The geological maps reviewed indicate that the Site and Study Area are characterized by the Middle Ordovician, Simcoe Group (Trenton- Black River) with limestone from the Lindsay Formation. The soil map identifies the soil in the Study Area to be dominantly course textured loamy sandy soils from the Tioga or Vasey family.

Utility records or drawings were not available at the time of this report.

The Phase One ESA identified APECs related to off-Site PCAs that were judged to represent a moderate to high environmental risk to the Site. Further environmental investigation is recommended.

7. Phase Two ESA Required for a Record of Site Condition

A Phase Two ESA is required before a Record of Site Condition (RSC) can be filed due to the APECs identified. Numerous PCAs were identified within the Study Area, and therefore further environmental investigation is required.

8. Record of Site Condition Based on Phase One ESA Alone

An RSC cannot be filed based on the Phase One ESA alone. PCAs identified off-Site have been judged to represent a medium to high environmental risk to the property. A Phase Two ESA is recommended.

9. Conclusions and Recommendations

The Phase One ESA identified several Areas of Potential Environmental Concern (APECs) on the property. The potential environmental risks to the property include:

APEC 1: The historical use of the Site as a service station, as an autobody shop, and by Allandale Lumber & Fuel Co Ltd. Fill and vent pipes were observed on the west exterior of the building during the Site visit.

APEC 2: The historical use of the property located north adjacent (35 Essa Road) as a dry cleaner and as an autobody shop. Fill and vent pipes were observed on the west side of the building during the Site visit.

APEC 3: The historical presence of underground storage tanks (USTs), and aboveground storage tanks (ASTs) on the property located southwest adjacent (259-273 Innisfil Street). The current use of the property is an autobody shop with presence of ASTs.

APEC 4: The historical use of the property located approximately 20 m south (49 Essa Road) by Allandale Lumber, Fuel & Construction Co. Ltd., including historical presence of ASTs.

APEC 5: The historical use of the properties located approximately 20 m east (34 Essa Road & 40 Essa Road) for storage of oil, including historical presence of a UST.

APEC 6: The historical use of the property located approximately 20 m east (48 Essa Road) as an autobody shop, including historical presence of a UST.

Further investigation is recommended to investigate potential environmental impacts in soil and groundwater, resulting from the identified APECs.

There is the potential for the presence of ACMs, ODS-containing materials, lead based paints, PCBs, and mercury. Should renovation or demolition be planned in the building, a designated substances survey should be performed in accordance with Ministry of Labour regulations.

10. Qualifications of the Assessor

This Phase One ESA was conducted by Ms. Jessica Boelhouwer, B Sc. Ms. Boelhouwer is responsible for the successful completion of field work and reporting.

This Phase One ESA was reviewed by Mr. Jacky So, P. Eng. Jacky So is a Senior Engineer for G2S Environmental. Mr. So obtained his Bachelor of Applied Science degree in Environmental Engineering in 2002 from the University of Waterloo in Waterloo, Ontario and received his license with the Professional Engineers Ontario in 2007. Mr. So has over 16 years of professional consulting experience in environmental site assessments and remediation. Mr. So has acted as project manager on several large scale remediation projects in the Greater Toronto Area. His main responsibilities as project manager included contract administrations, cost and timeline control, coordination of interdisciplinary project teams, communication with the clients, attending technical and public meetings, providing technical advice to the project team, conducting technical evaluations and studies. Mr. So is a Qualified Person as defined in Ontario Regulation 153/04 for signing off on Phase One and Two ESAs, remediation reports and filing of Records of Site Condition (RSCs).

11. References and Supporting Documentation

a) Canadian Standards Association. November 2001. *Z768-0 Phase I Environmental Site Assessment.*

b) Occupational Health and Safety Act - Ministry of Labour (MOL).

c) Inventory of Coal Gasification Plant Waste Sites in Ontario. Ontario Ministry if the Environment, April 1987.

d) Waste Disposal Site Inventory. Waste Management Branch Ontario Ministry of the Environment, June 1991.

e) Hazardous Waste Information Network (HWIN, 1986 – 2005), www.hwin.ca.

f) Ministry of the Environment, Brownfields Environmental Site Registry, www.ene.gov.on.ca/environet/BESR/index.

g) National Pollutant Release Inventory, www.ec.gc.ca.

h) Natural Heritage Information System, www.nhic.mnr.gov.on.ca.

i) Ontario's Environmental Registry, www.ebr.gov.on.ca.

j) "Paleozoic Geology of Southern Ontario", Ontario Division of Mines, Map 2254. Scale 1:1,013,760. Published 1972.

k) "Soil Map of Simcoe County, Ontario, South Sheet, Ontario Map No. 29, Soil Survey Report No. 18" Scale 1: 63,360. Experimental Farms Service, Ottawa, 1953.

l) "1971 Barrie Fire Insurance Plan", May 1971, Charles E. Goad. Scale 1:600. Reviewed at Simcoe County Archives.

m) "1946 Barrie Fire Insurance Plan," July 1946, Charles E. Goad. Scale 1:600. Reviewed at Simcoe County Archives.

n) "1931 Barrie Fire Insurance Plan", August 1931, Charles E. Goad. Scale 1:600. Reviewed at Simcoe County Archives.

o) "1907 Barrie Fire Insurance Plan", April 1907, Charles E. Goad. Scale 1:600. Reviewed at Simcoe County Archives.

p) "Barrie, Ontario, Topographic Map," 30 D/5 East Half, 2nd Edition, Army Survey Establishment, R.C.E. Scale 1: 50,000. Published 1950.

q) "Barrie, Ontario, Topographic Map," 30 D/5 East Half, 4th Edition, Mapping and Charting Establishment Department. Scale 1: 50,000. Published 1968.

r) "Barrie, Ontario, Topographic Map," 30 D/5, 6th Edition, Surveys and Mapping Branch, Department of Energy, Mines and Resources. Scale 1:50000. Published 1986.

s) “Barrie, Ontario, Topographic Map,” 30 D/5, 7th Edition. Natural Resources Canada, Centre for Topographic Information. Scale 1:50000. Published 2000.

t) Shot 443793,” 1954/55 Aerial Photograph. Ontario Department of Lands and Forests. Scale 1:63,360.

u) “Barrie Aerial Photo- Flightline 4415, Photo 70” 1971 Aerial Photograph, Ontario Airphoto 1953 Services- Viewed at York University Scott Map Library. Scale 1:30,000

v) “City of Barrie - Interactive Map, 2004 & 2007 Aerial Photography”, Discover Barrie – Interactive City Map (maps.barrie.ca), Viewed Online on April 27, 2012.

w) City of Barrie Official Plan Land Use Plan,” Schedule A, General Land Use Designations. Updated March 2011.

12. Limitations

This report has been prepared for the sole benefit of Barrie Drive-A-Car (1979) Limited, and is intended to provide a Phase One ESA on the Site, 41 & 43 Essa Road in Barrie, Ontario. The report may not be used by any other person or entity without the expressed written consent of Barrie Drive-A-Car (1979) Limited and G2S Environmental Consulting Inc. (G2S). Any use which a third party makes of this report, or any reliance on decisions made based on it, is the responsibility of such third parties. G2S accepts no responsibility for damages, if any suffered by any third party as a result of decisions made or actions based on this report.

The findings in this report are limited to the conditions at the Site at the time of this investigation (January 2018), and supplemented by a historical review and data obtained by G2S as described herein as well as information provided by the Site representative as reported herein. Conclusions presented in this report should not be construed as legal advice.

If Site conditions or applicable standards change or if any additional information becomes available at a future date, changes to the findings, conclusions and recommendations in this report may be necessary.

13. Closing Remarks

We trust this report is satisfactory for your purposes. Should you have any questions, please do not hesitate to contact this office.

Yours truly,

G2S Environmental Consulting Inc.

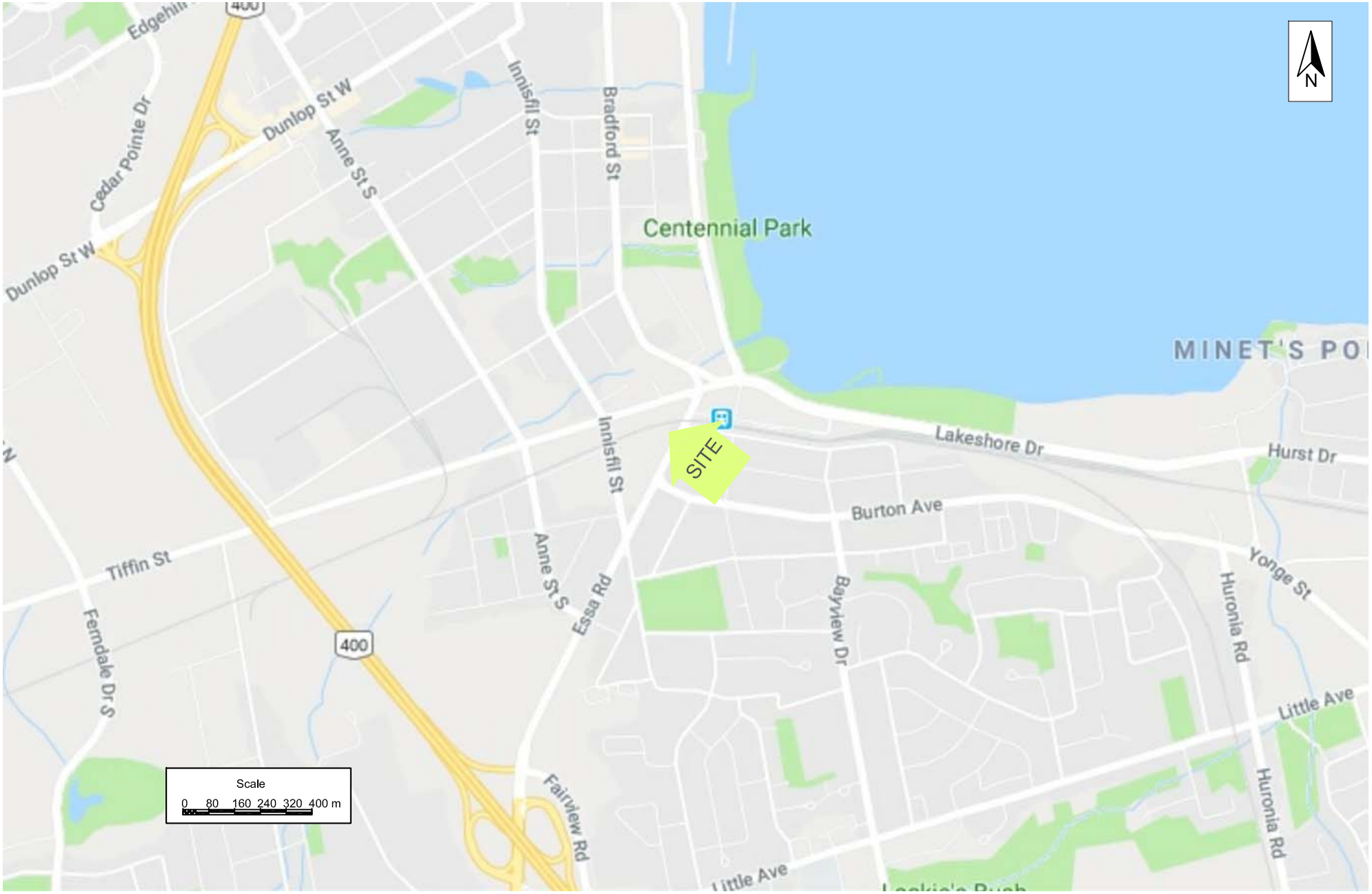


Jessica Boelhouwer, B.Sc.
Environmental Technician



Jacky So, P.Eng.
Senior Engineer

Appendix A:
Drawings



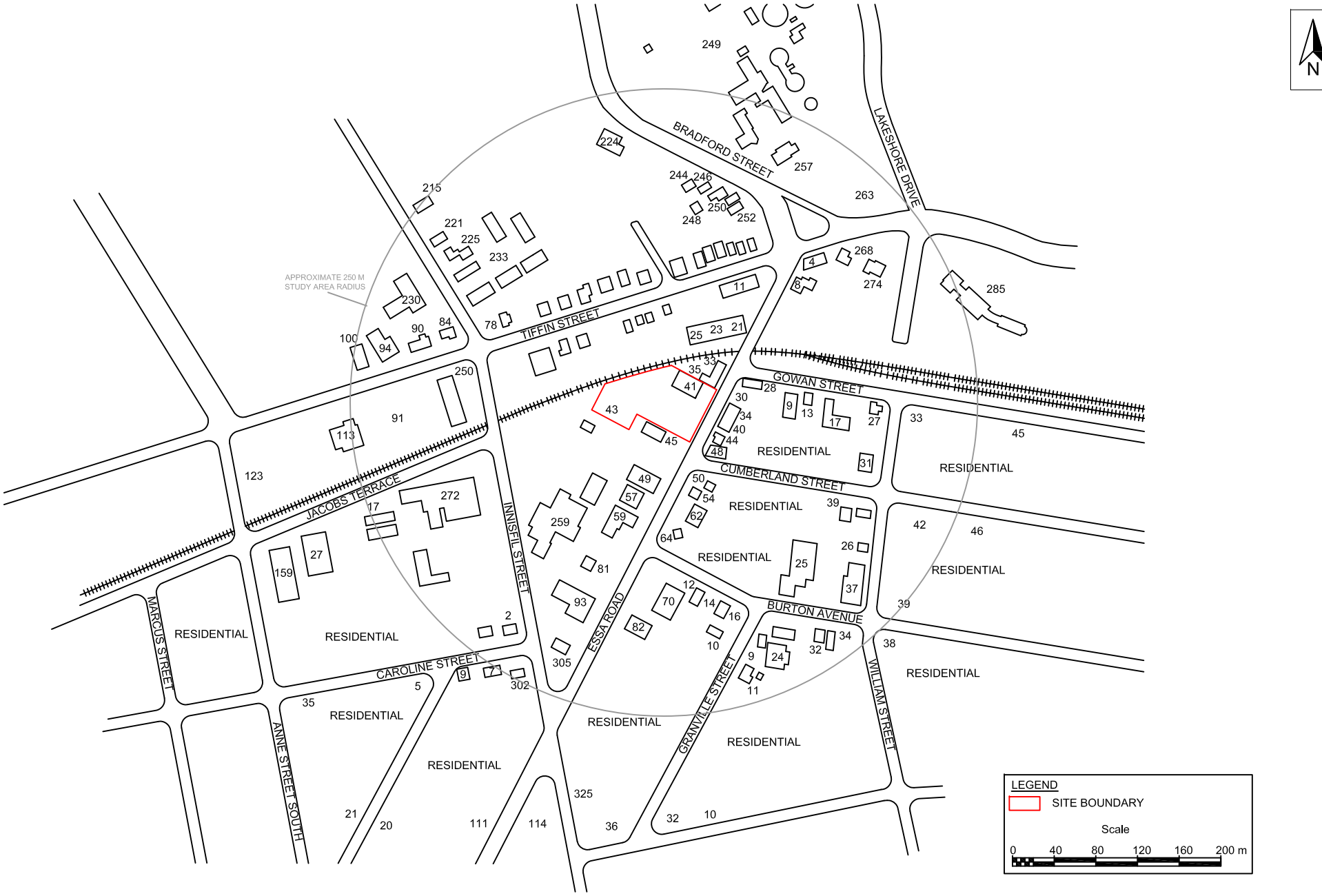
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SITE LOCATION PLAN
41 & 43 ESSA ROAD

BARRIE ONTARIO

G2S Environmental Consulting Inc.

Drawing No. 1



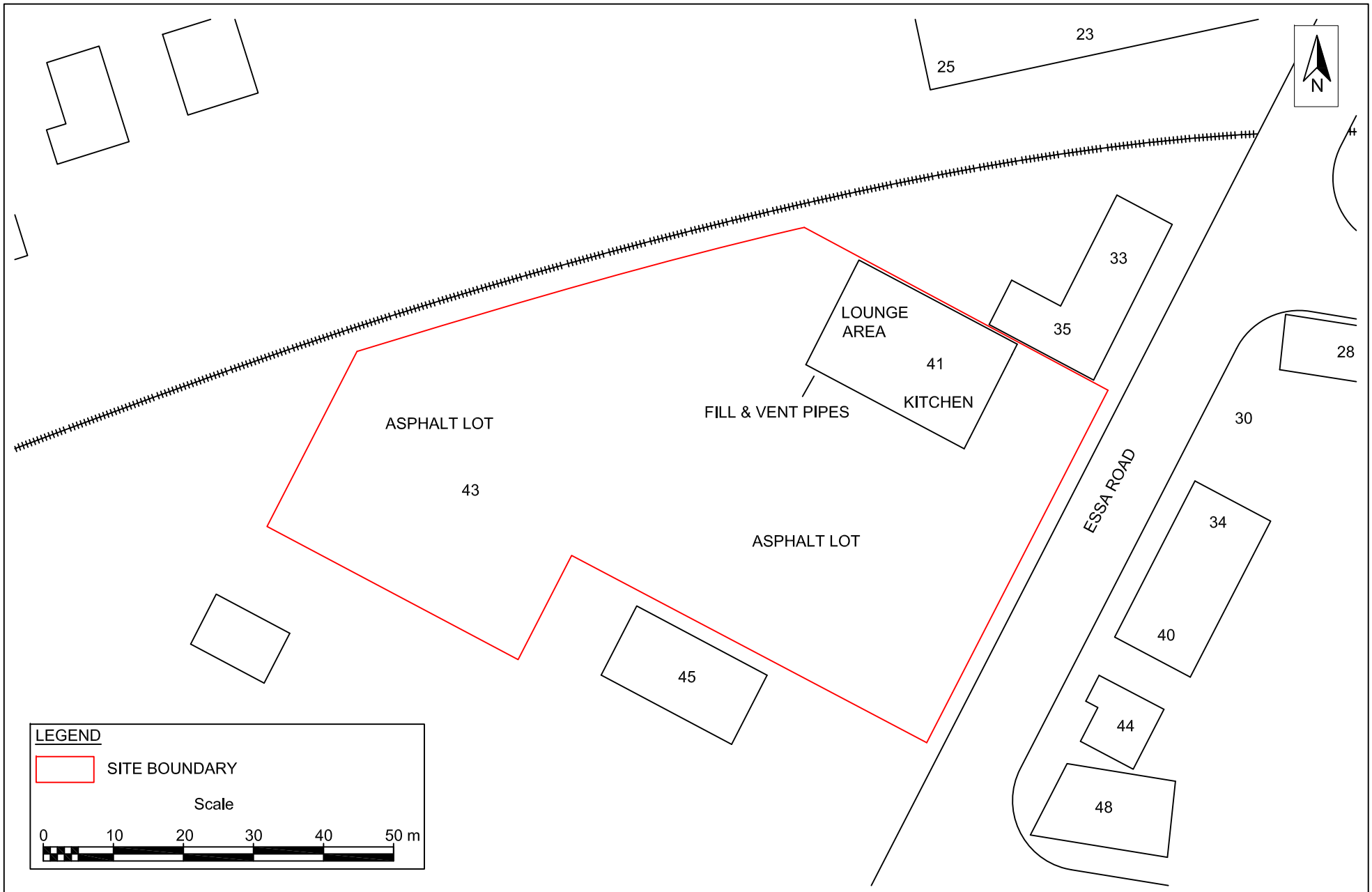
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PHASE ONE ESA STUDY AREA
41 & 43 ESSA ROAD

BARRIE ONTARIO

G2S Environmental Consulting Inc.

Drawing No. 2



Scale: 1:750 Project No.: G2S18006 Date: FEBRUARY 5, 2018 Drawn by: RB/SC File name: 41ESSA.dwg	SITE PLAN 41 & 43 ESSA ROAD BARRIE ONTARIO	G2S Environmental Consulting Inc.	Drawing No. 3



Scale: AS SHOWN Project No.: G2S18006 Date: FEBRUARY 5, 2018 Drawn by: RB/SC File name: 41ESSA.dwg	1954 AERIAL PHOTOGRAPH 41 & 43 ESSA ROAD BARRIE ONTARIO	G2S Environmental Consulting Inc.	Drawing No. 4



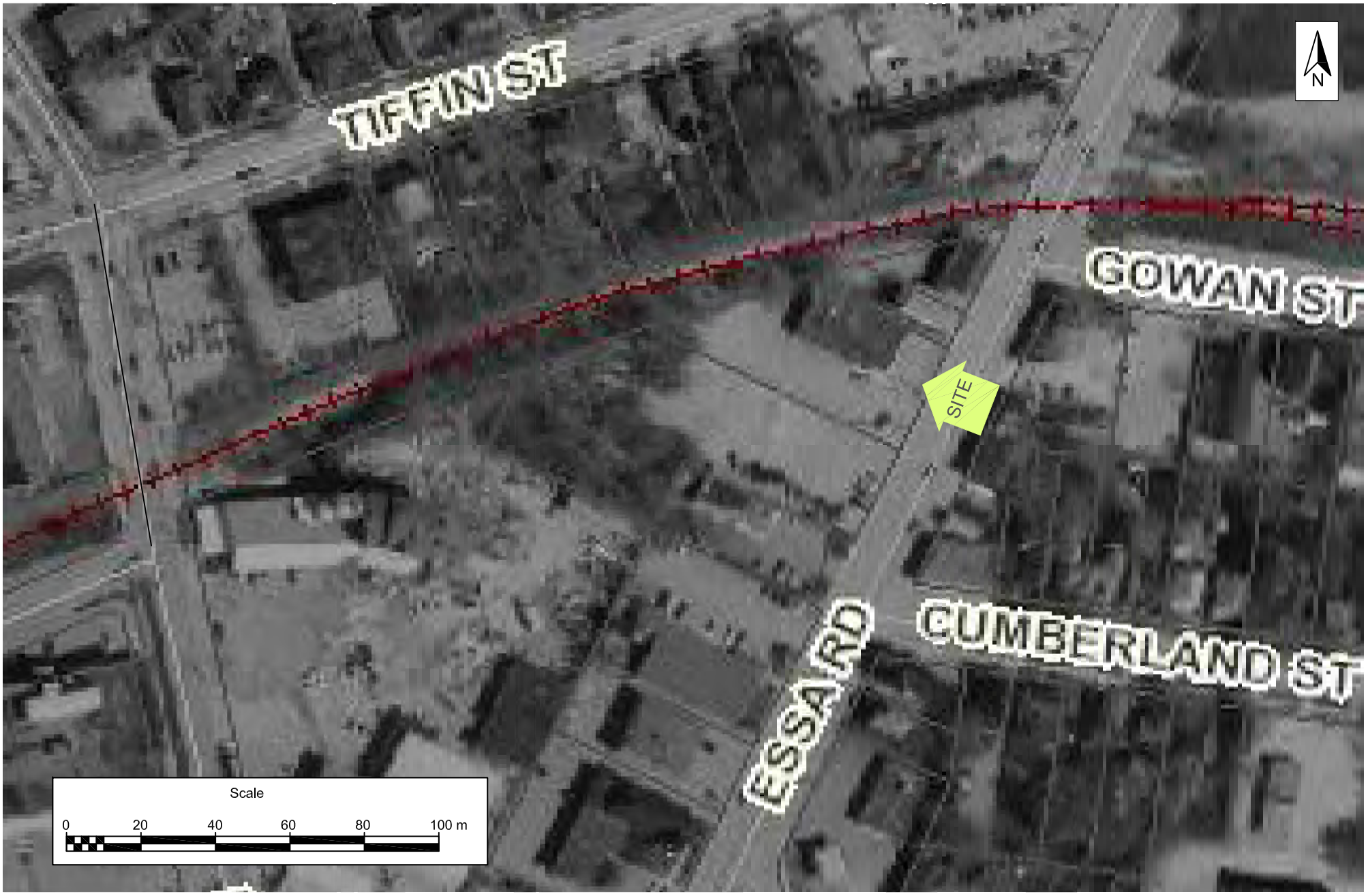
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Date:	FEBRUARY 5, 2018
Drawn by:	RB/SC
File name:	41ESSA.dwg

1971 AERIAL PHOTOGRAPH
41 & 43 ESSA ROAD

BARRIE ONTARIO

G2S Environmental Consulting Inc.

Drawing No. 5



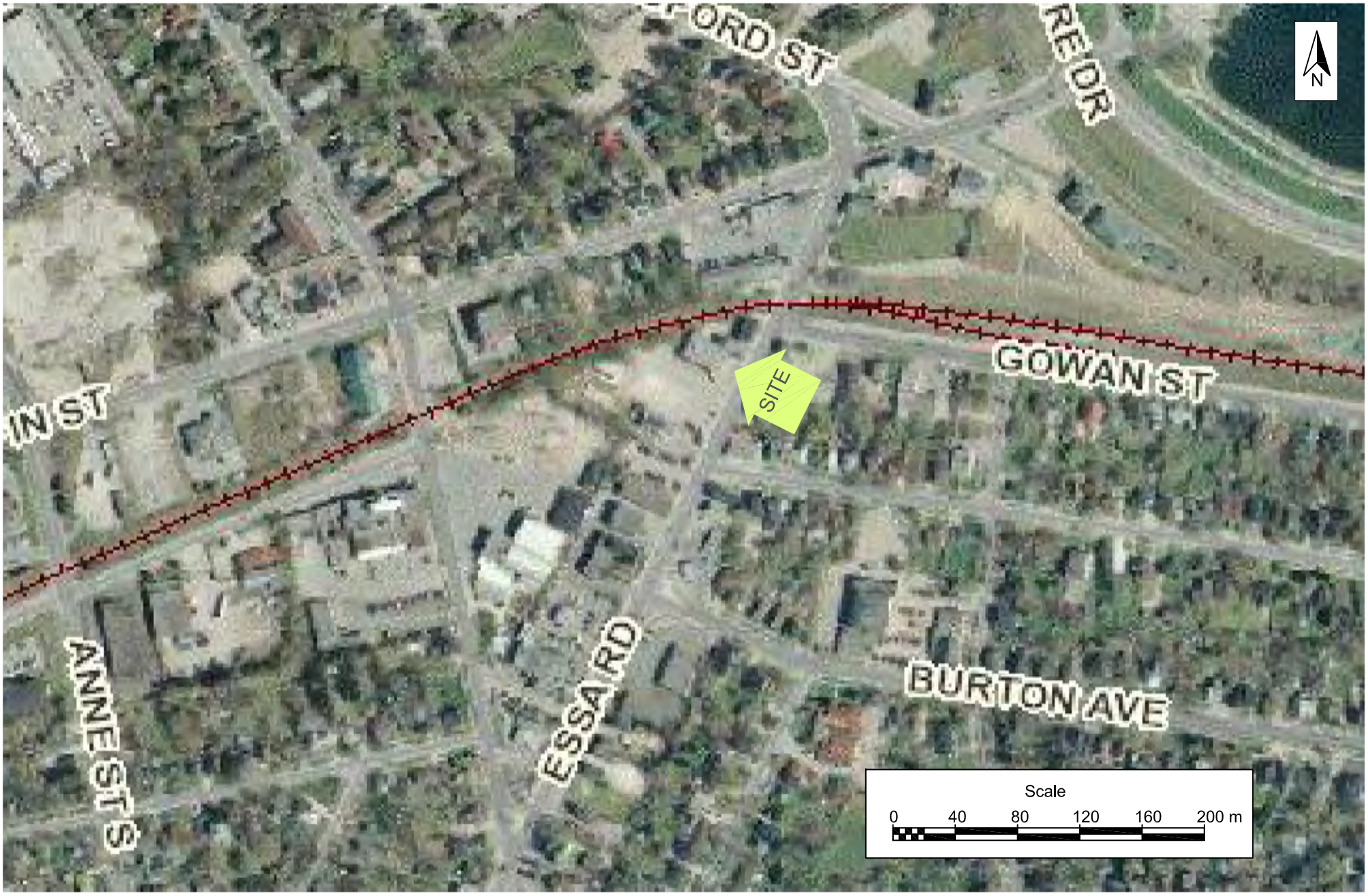
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2004 AERIAL PHOTOGRAPH
41 & 43 ESSA ROAD

BARRIE ONTARIO

G2S Environmental Consulting Inc.

Drawing No. 6



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Drawn by:	RB/SC		
File name:	41ESSA.dwg	BARRIE ONTARIO	G2S Environmental Consulting Inc.



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Project No.:	G2S18006
Date:	FEBRUARY 5, 2018
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File name:	41ESSA.dwg

2013 AERIAL PHOTOGRAPH
41 & 43 ESSA ROAD

BARRIE ONTARIO

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Drawing No. 8



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1950 TOPOGRAPHIC MAP
41 & 43 ESSA ROAD

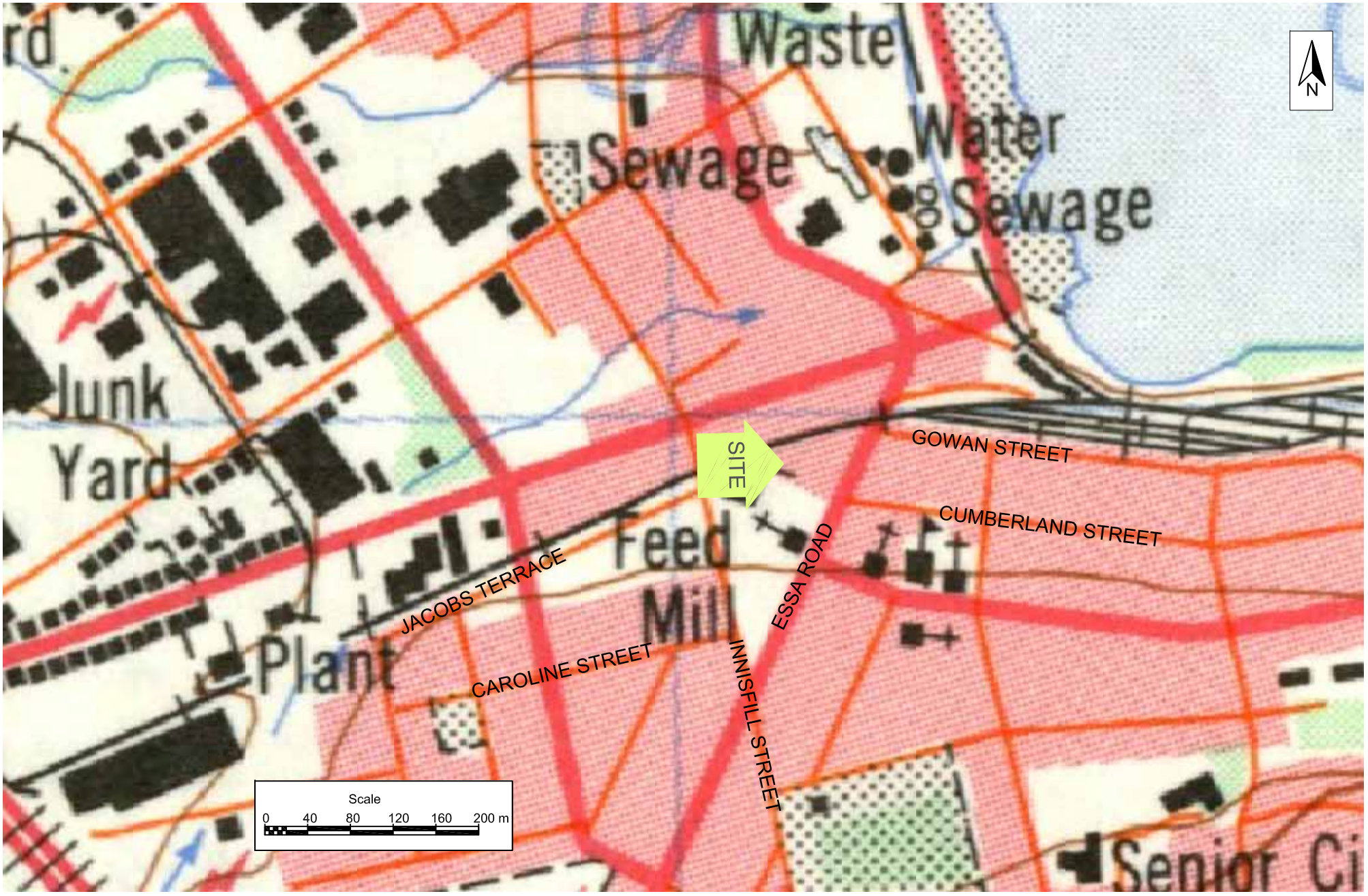
BARRIE ONTARIO

G2S Environmental Consulting Inc.

Drawing No. 9



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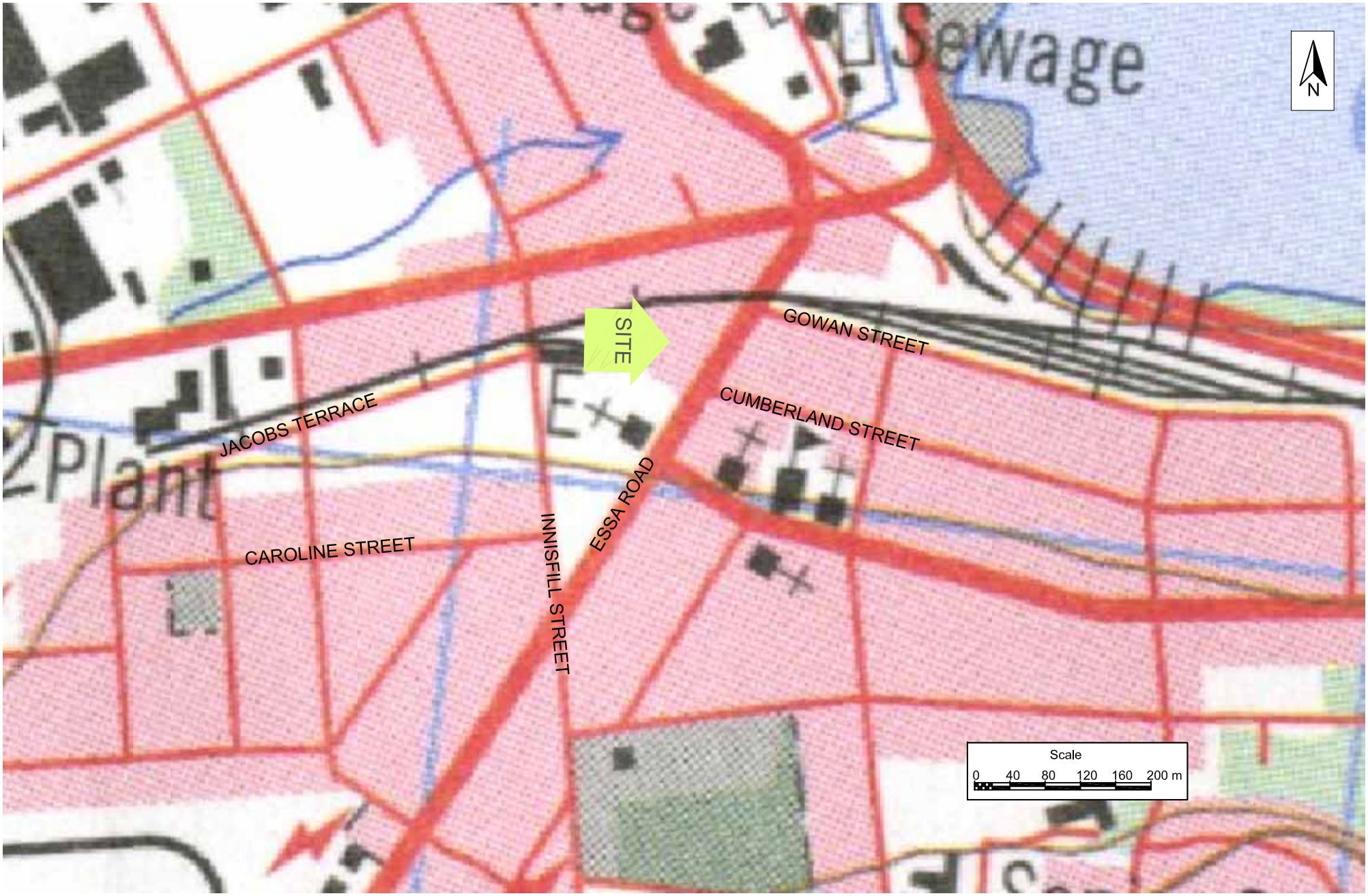
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1986 TOPOGRAPHIC MAP
41 & 43 ESSA ROAD

BARRIE ONTARIO

G2S Environmental Consulting Inc.

Drawing No.
11



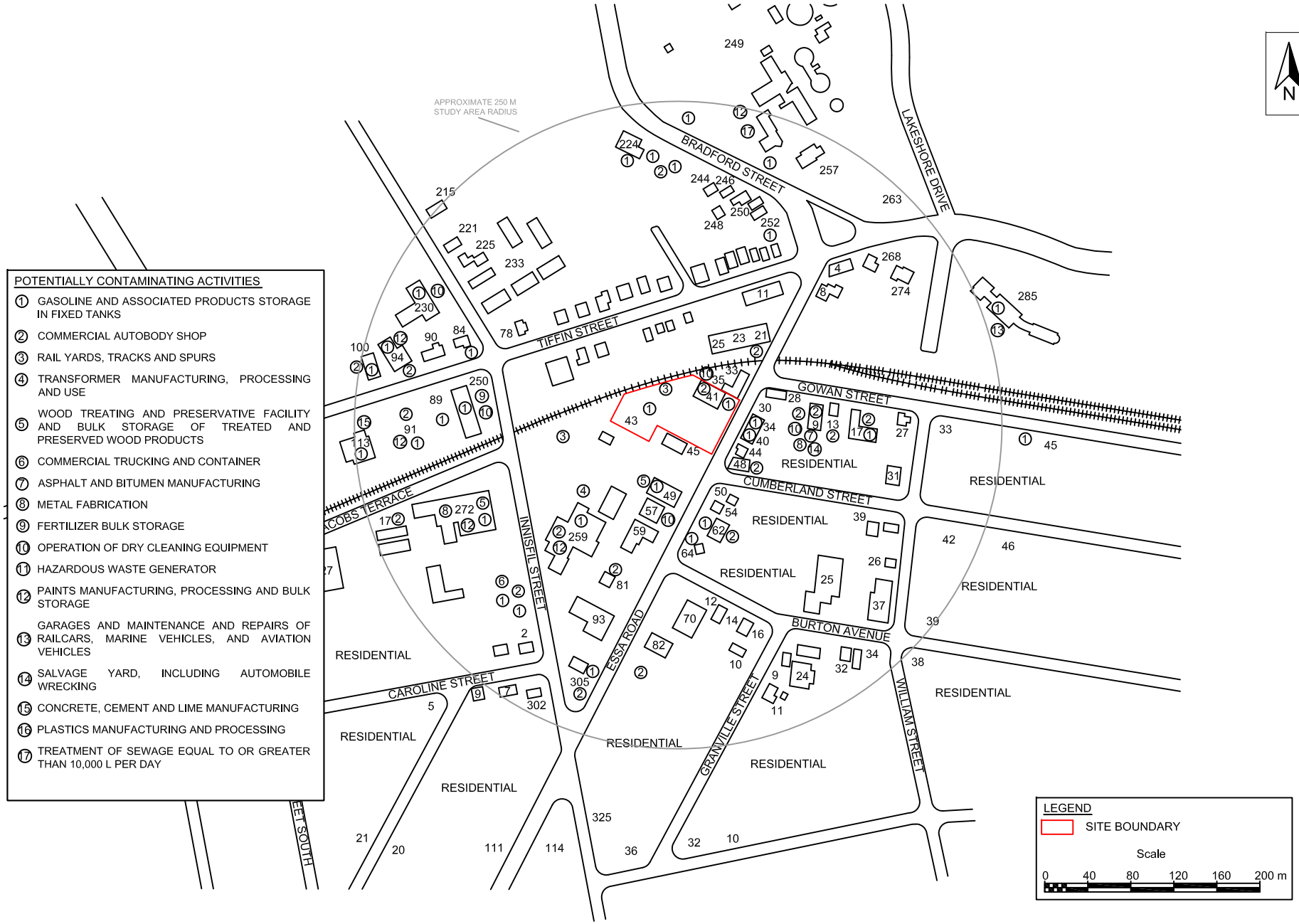
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2000 TOPOGRAPHIC MAP
41 & 43 ESSA ROAD

BARRIE ONTARIO

G2S Environmental Consulting Inc.

Drawing No.
12



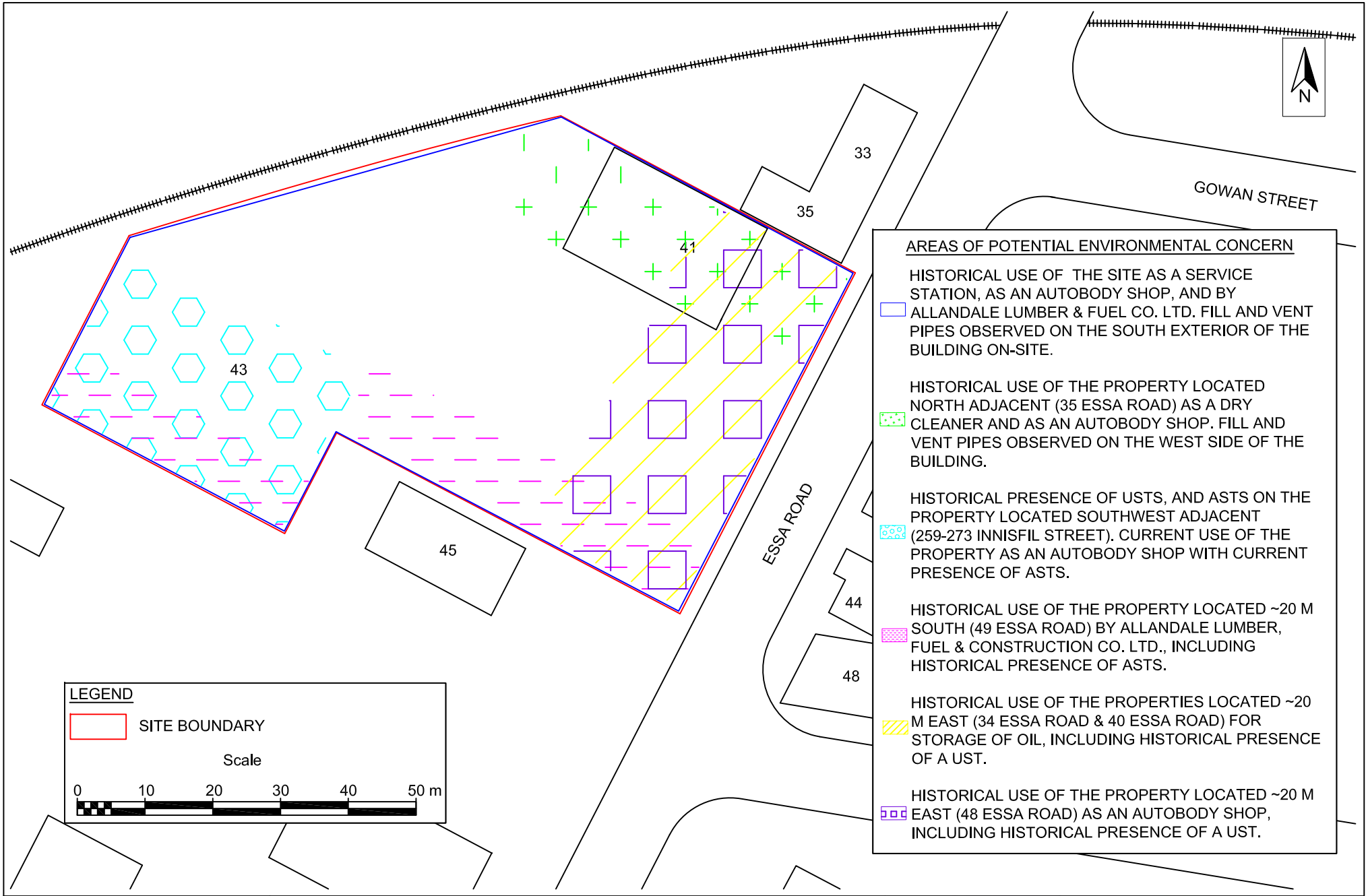
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POTENTIALLY CONTAMINATING ACTIVITIES
41 & 43 ESSA ROAD

BARRIE ONTARIO

G2S Environmental Consulting Inc.

Drawing No. 13



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Project No.:	G2S18006
Date:	FEBRUARY 5, 2018
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AREAS OF POTENTIAL ENVIRONMENTAL CONCERN
41 & 43 ESSA ROAD

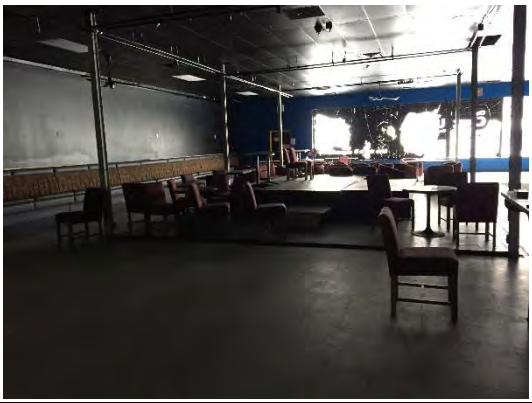
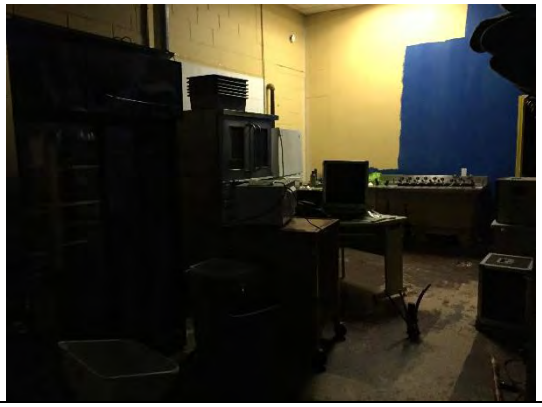
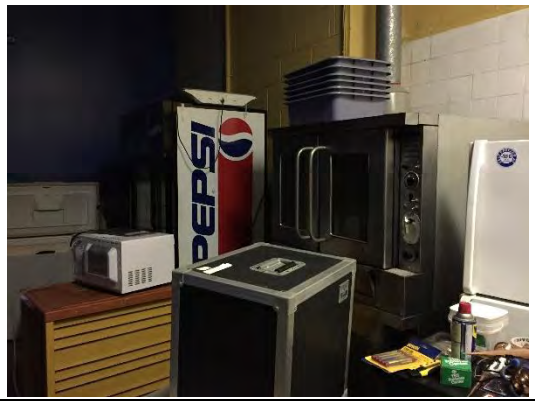
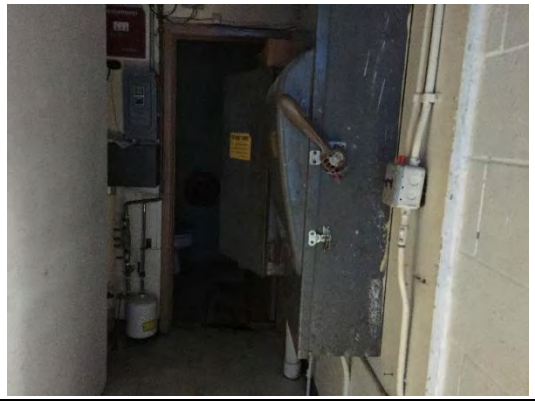
BARRIE ONTARIO

G2S Environmental Consulting Inc.

Drawing No. 14

Appendix B:
Site Photos

Picture and Description	
	
Photo #1: Site building, facing north.	**Photo #2:** East exterior of Site building and north adjacent building, facing north.
	
Photo #3: South exterior of Site building, facing west.	**Photo #4:** Fill and vent pipes on the west exterior of Site building.
	
Photo #5: North exterior of Site building, facing east.	**Photo #6:** Vent pipe on the east exterior of the north adjacent building.

Picture and Description	
	
Photo #7: West area of the interior of the Site building.	**Photo #8:** Bar in the northwest area of the interior of the Site building.
	
Photo #9: Kitchen in the east area of the Site building.	**Photo #10:** Storage items in the kitchen.
	
Photo #11: Washroom in the east area of the building.	**Photo #12:** Mechanical room, west area of the Site building.

Appendix C:
Property Use Directories

Property Use Directories, Surrounding Property Use

Site		
Address	***Property Use***	***Years Occupied***
41 Essa Road	Aladdin's Banquet and Meeting Centre	1996-1996
	U Buy Discount Foods	1990
	A&M Super Discount Food Mart Ltd.	1976-1982
	Red and White Foodmaster	1969
	Reynold's Super Service Station	1963
	Reynold's Collision Repair	1963
	Not listed	<1952
43 Essa Road	Barrie Drive-A-Car	1976-1982
	Hertz Rent-A-Car	1976-1982
	Horne, E.	1976-1982
	Dangerfield Holdings	1976
	Howden and Forrest Manufacturers	1969
	Cooke Cartage and Storage	1952-1963
	Residential	1930-1962
	Vacant	1927

East		
Address	***Property Use***	***Years Occupied***
28-34 Essa Road ~20 m	Allandale House Ware Appliances	1969
	Not listed	<1963
30 Essa Road ~20 m	Country Curtain and Gift Shop	1996-1999
	Visions Gallery	1990
	Gary's Barber Shop	1982
	Barrie Honda	1976
	Johnston's Hardware	1952
	Not listed	<1942
34 Essa Road ~20 m	Alacona Department Store	1982
	Hanna Hardware Store	1937-1942
	Not listed	<1930
38 Essa Road ~20 m	Earth Printing	1982
	Residential	1937-1976
	Not listed	<1930
40 Essa Road ~20 m	The Vintage Place	1999
	Jack's Music Hall	1990
	Hay Lorne Real Estate and Travel Service	1982
	Georgian Sports	1976
	Electronic Service Centre	1969
	Shoe Craft	1963

East		
Address	***Property Use***	***Years Occupied***
	Vacant	1952
	Griffith Margt. Conf.	1942
	Allen Ezekiel Fish and Chips	1937
	Not listed	<1930
44 Essa Road ~20 m	Addies Confectionary	1963-1999
	Addie's Bakery	1952
	Residential	1942
	Not listed	<1942
48 Essa Road ~20 m	Abercrombie Electric Co. Ltd.	1969-1999
	Pfiher Garage	1963
	Pifher Agricultural Implements	1952
	Jenkin's Garage	1942
	Jenkin's Coal	1942
	Hunter JT Garage	1937
	Not listed	<1930
5-46 Cumberland Street ~40 m	Residential	1927-1989
5 Gowan Street ~45 m	House of Bellini	1976
	Residential	1952-1969
	Kendrick Book Store	1937-1942
	Not listed	<1930
9 Gowan Street ~50 m	Oil Tech Rust Control Centre	1982-1999
	Topcoat Asphalt Sealing	1996-1999
	That Car Stereo Place	1996
	Bikeland	1982
	Northern Beauty Supply	1976
	Vacant	1969
	Allandale Hardware Second Hand Store	1963
	Barrie Spring Service	1952
	Allandale Auto Wreckers	1937-1942
13 Gowan Street ~60 m	Bike Land	1976
	Residential	1952-1969
	Carter Body and Fender Shop	1952-1969
	Carter A&N Auto Accessories	1937
	Not listed	<1930
17 Gowan Street ~105 m	BR Heating and Cooling	1996-1999
	Wilson R Graphic Supply Inc.	1996-1999
	SGS Custom	1999
	Autoworks	1999
	Huronia Ford Collision Centre	1990
	Barrie Honda Auto Sales	1982

East		
Address	***Property Use***	***Years Occupied***
	Johnston Kerv. Motors Ltd.	1969-1976
	Viau Motors	1963
	McKinnons Beswetherick Garage	1952
	Not listed	1942
	Vacant	1937
	Not listed	1937

South		
Address	***Property Use***	***Years Occupied***
259-273 Innisfil Street Adjacent	Simcoe District Co-Op Service	1963-1999
	Garden Centre	1982
	Not listed	<1952
45 Essa Road Adjacent	Kentucky Fried Chicken	1976-1999
	Scott's Chicken Villa	1990
	Residential	1963-1969
	Not listed	<1942
49 Essa Road ~25 m	Coldwell Banker Georgian Realty	1996-1999
	Appraisers Canada	1996-1999
	Upper Canada Financial	1999
	Enviro Canada Inc.	1999
	Ontario Federation of Agriculture	1990
	The Cooperatives	1982-1990
	Simcoe County Federation of Agriculture	1990
	Gore and Storrie Ltd.	1982
	Allandale Lumber Co.	1937-1976
	Not listed	<1930
62 Essa Road ~55 m	Mac's Convenience	1990-1999
	Fitzpatrick's Service Centre	1982
	Vacant	1976
56-62 Essa Road ~55 m	McBride's Gulf Service Station	1969
	Giles Al Service Station and Restaurant	1963
	Giles Service Station	1952
57 Essa Road ~65 m	Salon Rinaldi Esthetics	1990-1999
	Ollies Fish and Chips Family Restaurant	1996-1999
	Hobby House	1996-1999
	Barrie Amusement	1990
	Giovanni and Perro	1982-1990
	Lewis Fish and Chips	1990
	Simcoe Clearance Centre	1990
	Apartments	1990
	The Burger Shop	1982

South		
Address	***Property Use***	***Years Occupied***
	Marks Milk	1982
	Residential	1963-1969
	Bessie Hair Dresser	1952
	Essa Road Presbyterian Church	1952
	Spearn Hair Dresser	1942
	Residential	1937
	Not listed	<1930
59 Essa Road ~65 m	Essa Road Presbyterian Church	1937-1999
	Barrie Korean Presbyterian Church	1952-1999
	Not listed	<1930
64 Essa Road ~75 m	Mustard R. Service Station	1942
	Edge Hazen Service Station	1937
	Not listed	<1930
7 Burton Avenue ~85 m	Residential	1969-1990
	Orange Hall	1976
	LOL Hall	1927-1962
81 Essa Road ~115 m	B&K Auto	1999
	Auto Service	1999
	Action All Rent	1996-1999
	Matthew's Equipment Rental	1996
	Huronia Ford	1990
	Allandale AMC Jeep Renault	1982
	Douglas Lincoln Mercury Sales	1976
	Moffat Mercury Sales	1969
	Pierce Motors	1963
	Residential	1942-1952
	Not listed	<1937
70 Essa Road ~120 m	Barrie Pet Centre	1996-1999
	Dragon Restaurant	1996-1999
	Humble Secretarial Services	1996-1999
	Century Rothe Realty	1990
	Not listed	1982
	Douglas Used Cars	1976
	Not listed	1963-1969
	Residential	1942-1952
	McKinny Chiropractic	1937
	Not listed	<1930
91 Essa Road ~150 m	Mike's Service Centre	1990
	Cunnington's Texaco Service	1982
	Texaco	1976
	Residential	1942-1969

South		
Address	***Property Use***	***Years Occupied***
	Not listed	<1937
82 Essa Road ~175 m	Marshall, Will Insurance	1996-1999
	Charles Mitchell Donuts and Submarine	1990
	Not listed	1982
	No Return	1976
	Residential	1937-1963
	Not listed	<1937
305 Innisfil Street ~215 m	Dave Wood Super Used Automotive	1999
	Not listed	<1990
88 Essa Road ~230 m	N&N Used Bikes & Repair	1990-1999
	Residential	1937-1982
	Not listed	<1930

West		
Address	***Property Use***	***Years Occupied***
89 Tiffin Street ~125 m	McColl Frontenac Oil Co. Ltd.	1942
	Baldwin Ernest Marathon Oil Co.	1937
	Not listed	<1930
91 Tiffin Street ~130 m	Huronia Fuels	1982
	Texaco Canada Sales Office	1982
	Vacant	1952
	Not listed	<1942
113 Tiffin Street ~215 m	Simcoe Block Co.	1963-1969
	Residential	1952
	Not listed	<1942

North		
Address	***Property Use***	***Years Occupied***
35 Essa Road Adjacent	Doctors Office	1990-1999
	Goedemondt Lou Real Estate Ltd.	1982
	Maella Fabrics	1976
	Wagg's Laundry and Dry Cleaners	1963-1969
	Allandale Fish and Chips	1952
	Allandale Laundry	1952
	Londry Motors and Used Cars	1952
	Burton Red Restaurant	1942
	Fong Laundry	1942
	Lem Bro Laundry	1937
	Not listed	<1930

North		
Address	*Property Use*	*Years Occupied*
33 Essa Road ~10 m	Goedemondt Real Estate Ltd.	1990-1999
	Hogben Mayhew and Van Lange Lawyers	1982
	Joyne Services	1982
	Start Amusement	1982
	Julie's	1976
	Alice's Beauty Salon	1969
	Eves Beauty Shop	1963
	Allandale Hardware	1952
	Maclachlan Furniture	1942
	Jenkins Coal	1937
	Not listed	<1930
27 Essa Road ~30 m	Henry's Barber Shop	1969
	Cliffs Barbershop	1952
	Collins Ladieswear	1942
	Irene Collings Ladieswear	1937
	Not listed	<1930
25 Essa Road ~45 m	Bank of Nova Scotia	1982
	Corby's Used Car Ltd.	1952
	Not listed	<1942
11 Essa Road ~80 m	Vacant	1996-1999
	Not listed	1990
	Christies IGA	1963-1982
	Blue Taxi	1952
	Allandale Taxi	1942
	Wilson Taxi	1937
	Not listed	<1930
1-3 Short Street ~95 m	Residential	1927-1989
240 Bradford Street ~170 m	Barrie Huronia Motel	1963-1999
	Not listed	<1952
233-235 Bradford Street ~190 m	Not listed	1942-1999
	Flint Service Station	1937
224 Bradford Street ~215 m	Ziebart Auto	1982-1999
	Meier HP Ltd.	1982
	Simcoe Auto Stereo Ltd.	1982
	Paul's Sunoco	1976
	Sinclair Sunoco Service Station	1952-1976
241 Bradford Street ~230 m	The Cabinet Shop	1952
	Not listed	<1942

Southeast		
Address	***Property Use***	***Years Occupied***
50 Essa Road ~30 m	Cotty's Cleaner Depot	1969-1982
	Fleetham Red and White Groceries	1952-1963
	Dobson Grocery	1937-1942
	Not listed	<1930
19 Burton Avenue ~130 m	Kinark Child & Family Services	1990-1994
	King Edward Public School	1927-1989
37 Burton Avenue ~190 m	Burton United Church	1927-1989
30 Burton Avenue ~220 m	St. George's Anglican Church	1930-1994

Northeast		
Address	***Property Use***	***Years Occupied***
28 Essa Road ~25 m	Unicuts	1996-1999
	Deevee Sales	1976-1990
	Douglas Custom Upholstery	1976-1990
21 Essa Road ~50 m	Doctor	1990-1999
	R&J Christie Ltd.	1990-1999
	Jug City	1982-1999
	Allandale Guardian Drugs	1982-1999
	Tim Hortons	1982
	Allandale Drug Company	1982
	Gulf Canada	1982
	Not listed	1969-1972
	Allandale Motors	1962
	Van Koughnet Shoe Repair	1942
	Kirk Shoe Repair	1942
	Hill Shoes	1937
	Not listed	<1930
18 Essa Road ~90 m	The Whistle Shop	1990-1999
	Allandale Leasing and Rentals	1982
	Allandale Taxi, Delivery Service	1969-1976
	Not listed	<1963
8 Essa Road ~120 m	Barrie and District Rape Crisis Line	1996-1999
	Tef Mac Ltd.	1990
	Williams U J Sales	1990
	Goodies Galore	1990
	State Farm Insurance	1990
	Webbs Jewellery	1937-1982
	Allandale Lawn Bowling Club	1969-1976
	Canadian National Institute for the Blind	1963-1969

Northeast		
Address	***Property Use***	***Years Occupied***
	Piano Tuner	1937-1963
32 Tiffin Street ~130 m	New Beginnings By Laurie	1990-1999
	Laurie's Hairstyling	1976-1982
	Pom Pom Hair	1963-1969
	Residential	1952
	Not listed	<1942
4 Essa Road ~140 m	Flowers and Found Objects	1996-1999
	Executive Caterers	1990
	Central Program Register Ltd.	1990
	Barrie Raceway	1990
	United Tote of Canada	1990
	Jesse's Restaurant	1982
	Canadian Sub Post Office	1976
	Allandale Drugs	1963-1976
	Whitty, L.G. Drugs	1937-1952
	Not listed	<1930
285 Bradford Street ~200 m	CNR Freight Sales	1982-1990
	Via Rail Canada	1982-1990
	Not listed	<1976

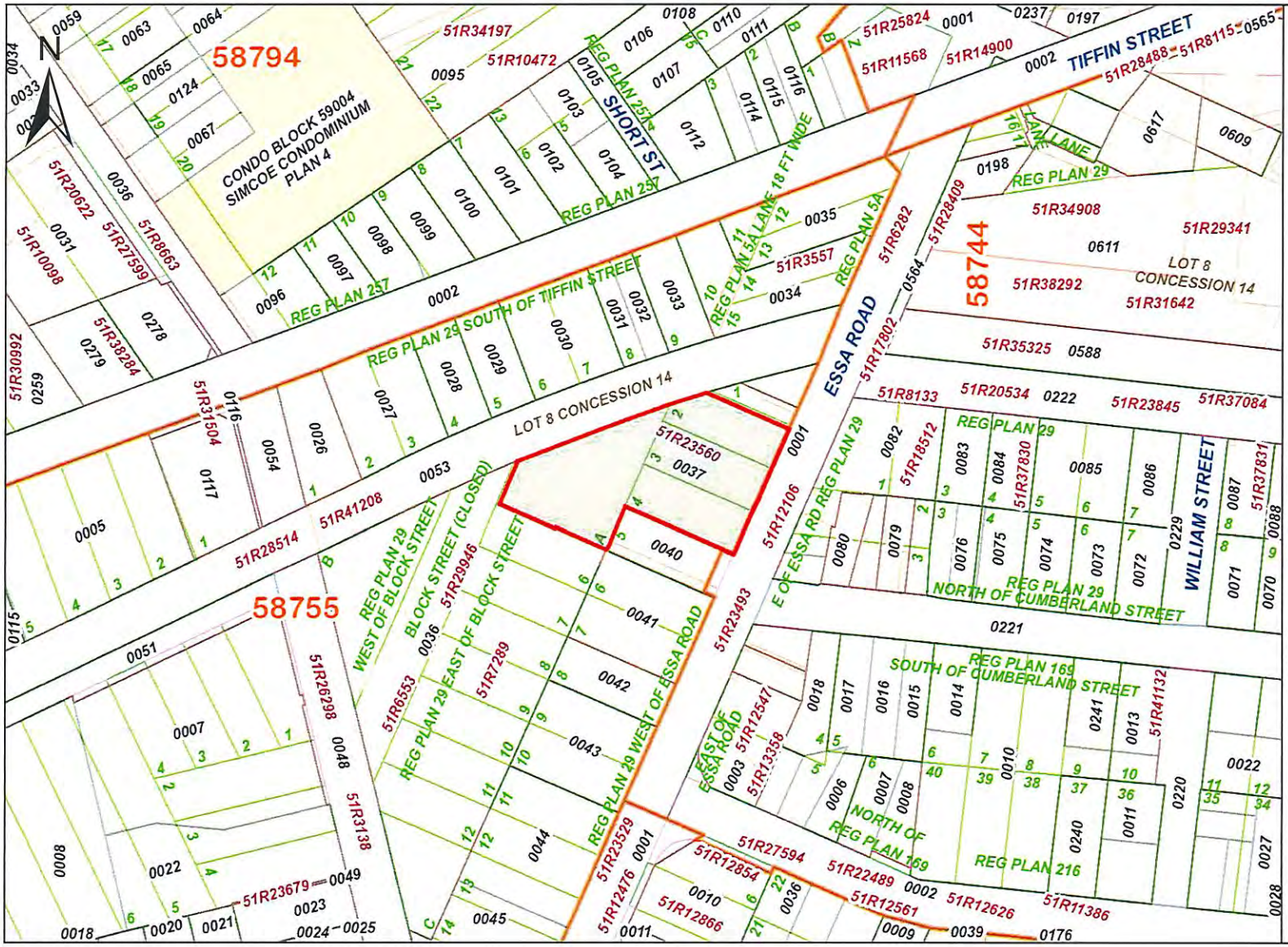
Northwest		
Address	***Property Use***	***Years Occupied***
78-87 Tiffin Street ~100 m	Simcoe District Co-Op Warehouse Storage Shed	1969-1982
	Residential	1952-1963
	Not listed	<1942
233 Innisfil Street ~130 m	Residential	1976-1999
	Not listed	<1969
84 Tiffin Street ~130 m	Stroud Motor Garage	1999
	B&K Auto Service	1996
	Whitehouse Auto Sales Ltd.	1990
	Mooney's Auto Glass and Radiator Ltd.	1976-1982
	Taxaco Service Station	1969
	Vacant	1963
	Not listed	<1952
90 Tiffin Street ~135 m	Old Picdeli Meat and Catering	1999
	Hessues Country Dier	1996
	Green Corner Restaurant	1990
	Vacant	1982
	Green Corner Grill	1963-1976
	Not listed	<1952

Northwest		
Address	***Property Use***	***Years Occupied***
230 Innisfil Street ~170 m	It's Perfect Interior Decorating	1996-1999
	Victoria's Room Nail Studio	1996-1999
	Wash and Dry Coin Laundry	1996-1999
	Apartments	1996-1999
	Not listed	<1990
94 Tiffin Street ~170 m	Laabar Sales and Distribution	1990-1999
	Macklem Contracting Inc.	1990
	C&R Performance Components Ltd.	1990
	Vacant	1982
	Simcoe Sports Car Centre	1969-1976
	Ray Simcoe Motors Ltd.	1963
	Not listed	<1952
100 Tiffin Street ~200 m	A-1 Automotive Service	1996-1999
	D&D Auto and Cycle Repair	1990
	Town Cycle	1982
	Painting and Decorating, Harry Young	1976
	Not listed	1963-1969
	McColl Frontenac Oil Co. Ltd.	1952
	Not listed	<1942

Southwest		
Address	***Property Use***	***Years Occupied***
272 Innisfil Street ~110 m	Total Awareness Group	1996-1999
	Two-Four-Six Promotions	1990-1999
	Capaco Space Rental	1982-1999
	Giannis Tile Gallery Ltd.	1996-1999
	No Dip Furniture Stripping and Refinishing	1990-1999
	Powerline Screen Printing and Promotional Supply	1996-1999
	Simcoe Escalator and Lift Co.	1996-1999
	Coin, Stamp and Gift Shop	1999
	Southern Express Automotive Industries	1999
	Motorcycle Parts Plus	1996-1999
	Rewound Music	1996
	Barrie Antique	1996
	Ontario Association for Persons with Disabilities	1996
	The Blue Box	1996
	Barrie Disc Jockey Service	1996
	Lamer's Mechanical Ltd.	1990
	Mid Ontario Building Supply Ltd.	1990

Southwest		
Address	***Property Use***	***Years Occupied***
	Striegl George	1990
	Head Injury Association of Barrie	1990
	A&B Real Foods	1990
	Lake Simcoe Fruit Market	1990
	Peterbilt Renovation	1990
	Malila Manufacturing Inc.	1990
	BEMCO Electric and Refrigeration	1982-1990
	Weight Control Institute	1982-1990
	Memco Bay Electric Motors	1982-1990
	Vacant	1982
	Tiffany Party Rentals	1982
	Charmac Heating Ltd.	1982
	Johns Driving School	1982
	Toledo Scale	1982
	Thome's Insulation	1982
	Citra Mix Ltd. Manufacturing Food Prooducts	1982
	Hostess Food Products	1982
	Vespra Valley Heating – Sheet Metal	1982
	A Young Drywall	1982
	A Burtnett's Scottish Imports Ltd.	1982
	Auctioneer Corp.	1976
	Ebdon Signs	1976
	Thumbprint Studio	1976
	United Breeders Inc.	1976
	Douglas Truck Centre	1976
	Mansfield Denman General Warehouse	1976
	Can Tyler Refrigeration Warehouse	1976
	First Co-Op Packers of Ontario	1963-1969
	Copaco Food Production	1963-1969
17 Jacobs Terrace ~210 m	No Name Autobody	1982-1999
	A-1 Auto Body	1976
	Not listed	<1969

Appendix D:
Property Ownership



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PRINTED ON 18 JAN, 2018 AT 15:13:48
FOR G2S

SCALE

0 30 60 90 meters

PROPERTY INDEX MAP

SIMCOE(No. 51)

LEGEND

FREEHOLD PROPERTY	
LEASEHOLD PROPERTY	
LIMITED INTEREST PROPERTY	
CONDOMINIUM PROPERTY	
RETIRED PIN (MAP UPDATE PENDING)	
PROPERTY NUMBER	0449
BLOCK NUMBER	08050
GEOGRAPHIC FABRIC	
EASEMENT	----

THIS IS NOT A PLAN OF SURVEY

NOTES

REVIEW THE TITLE RECORDS FOR COMPLETE PROPERTY INFORMATION AS THIS MAP MAY NOT REFLECT RECENT REGISTRATIONS

THIS MAP WAS COMPILED FROM PLANS AND DOCUMENTS RECORDED IN THE LAND REGISTRATION SYSTEM AND HAS BEEN PREPARED FOR PROPERTY INDEXING PURPOSES ONLY

FOR DIMENSIONS OF PROPERTIES BOUNDARIES SEE RECORDED PLANS AND DOCUMENTS

ONLY MAJOR EASEMENTS ARE SHOWN

REFERENCE PLANS UNDERLYING MORE RECENT REFERENCE PLANS ARE NOT ILLUSTRATED

Ontario

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* CERTIFIED IN ACCORDANCE WITH THE LAND TITLES ACT * SUBJECT TO RESERVATIONS IN CROWN GRANT *

PROPERTY DESCRIPTION: LT 3 W/S ESSA RD, 4 W/S ESSA RD PL 29 ALLANDALE; PT LT 2 W/S ESSA RD, A E/S BLOCK ST PL 29 ALLANDALE PT 1 51R23560; BARRIE

PROPERTY REMARKS:

ESTATE/QUALIFIER:
FEE SIMPLE
LT CONVERSION QUALIFIED

RECENTLY:
RE-ENTRY FROM 58755-0095

PIN CREATION DATE:
2001/09/24

OWNERS' NAMES
BARRIE DRIVE-A-CAR (1979) LIMITED

CAPACITY SHARE
BENO

REG. NUM.	DATE	INSTRUMENT TYPE	AMOUNT	PARTIES FROM	PARTIES TO	CERT/ CHKD
** PRINTOUT INCLUDES ALL DOCUMENT TYPES AND DELETED INSTRUMENTS SINCE 2001/09/21 **						
**SUBJECT, ON FIRST REGISTRATION UNDER THE LAND TITLES ACT, TO:						
** SUBSECTION 44(1) OF THE LAND TITLES ACT, EXCEPT PARAGRAPH 11, PARAGRAPH 14, PROVINCIAL SUCCESSION DUTIES *						
** AND ESCHEATS OR FORFEITURE TO THE CROWN.						
** THE RIGHTS OF ANY PERSON WHO WOULD, BUT FOR THE LAND TITLES ACT, BE ENTITLED TO THE LAND OR ANY PART OF						
** IT THROUGH LENGTH OF ADVERSE POSSESSION, PRESCRIPTION, MISDESCRIPTION OR BOUNDARIES SETTLED BY						
** CONVENTION.						
** ANY LEASE TO WHICH THE SUBSECTION 70(2) OF THE REGISTRY ACT APPLIES.						
**DATE OF CONVERSION TO LAND TITLES: 2001/09/24 **						
RO212348	1965/11/03	LEASE		*** COMPLETELY DELETED ***	NATIONAL GROCERS CO. LTD.	
RO217628	1966/02/25	AGREEMENT REMARKS: SKETCH ATTACHED.				C
RO217629	1966/02/25	AGREEMENT REMARKS: SKETCH ATTACHED.				C
RO217630	1966/02/25	LEASE		*** COMPLETELY DELETED ***	NATIONAL GROCERS CO. LTD.	
RO217631	1966/02/25	LEASE REMARKS: SUBLEASE		*** COMPLETELY DELETED ***	FLEETHAM, ORVAL E.	
RO223710	1966/06/16	TRANSFER	$2		DANGERFIELD HOLDINGS LIMITED	C
RO614429	1977/10/18	TRANSFER	$2		DANGERFIELD HOLDINGS LIMITED	C

NOTE: ADJOINING PROPERTIES SHOULD BE INVESTIGATED TO ASCERTAIN DESCRIPTIVE INCONSISTENCIES, IF ANY, WITH DESCRIPTION REPRESENTED FOR THIS PROPERTY.
NOTE: ENSURE THAT YOUR PRINTOUT STATES THE TOTAL NUMBER OF PAGES AND THAT YOU HAVE PICKED THEM ALL UP.

REG. NUM.	DATE	INSTRUMENT TYPE	AMOUNT	PARTIES FROM	PARTIES TO	CERT/ CHKD
51R23560	1993/01/18	PLAN REFERENCE				C
SC1202603	2015/04/09	APL CH NAME OWNER		DANGERFIELD HOLDINGS LIMITED	BARRIE DRIVE-A-CAR (1979) LIMITED	C
SC1203621	2015/04/14	APL (GENERAL)		*** COMPLETELY DELETED *** BARRIE DRIVE-A-CAR (1979) LIMITED		
	REMARKS: DELETES RO212348, RO217630 AND RO217631					

NOTE: ADJOINING PROPERTIES SHOULD BE INVESTIGATED TO ASCERTAIN DESCRIPTIVE INCONSISTENCIES, IF ANY, WITH DESCRIPTION REPRESENTED FOR THIS PROPERTY.
NOTE: ENSURE THAT YOUR PRINTOUT STATES THE TOTAL NUMBER OF PAGES AND THAT YOU HAVE PICKED THEM ALL UP.

Ontario ServiceOntario

LAND REGISTRY OFFICE #51

ABSTRACT INDEX (ABBREVIATED) FOR PROPERTY IDENTIFIER

58755-0095 (R)

PREPARED FOR G2S
ON 2018/01/18 AT 15:12:50

PROPERTY DESCRIPTION: LTS 3, 4 W/S ESSA RD PL 29, PT LT 2 W/S ESSA RD, PT LT A PL 29, PT 1 51R23560 ; BARRIE

PROPERTY REMARKS: THIS PARCEL WAS CREATED BASED ON INFORMATION CONTAINED IN DOCUMENT(S) RO223710,RO614429, WHICH IS (ARE) RECORDED FOR PIN IDENTIFICATION ONLY.

ESTATE/QUALIFIER: RECENTLY: PARCELIZED PIN CREATION DATE: 1998/04/20

REG. NUM.	DATE	INSTRUMENT TYPE	AMOUNT	PARTIES FROM	PARTIES TO	CERT/ CHKD
EFFECTIVE 2000/07/29 THE NOTATION OF THE "BLOCK IMPLEMENTATION DATE" OF 1998/04/20 ON THIS PIN						
WAS REPLACED WITH THE "PIN CREATION DATE" OF 1998/04/20						
*** PRINTOUT INCLUDES ALL DOCUMENT TYPES AND DELETED INSTRUMENTS SINCE 1998/04/17 ***						
THIS ABSTRACT INCLUDES ALL INSTRUMENTS AND DOCUMENTS FROM: 1998/04/20						
FOR THE PREVIOUS ABSTRACT SEE ABSTRACT BOOK						
NOTE: THIS PIN WAS ONCE REG PIN 58755-0037. THIS PROPERTY WAS CONVERTED TO LT ON 2001/09/24 REUSING PIN 58755-0037.						
RO223710	1966/06/16	TRANSFER	$2		DANGERFIELD HOLDINGS LIMITED	C
RO614429	1977/10/18	TRANSFER	$2		DANGERFIELD HOLDINGS LIMITED	C
RO1398278	1998/11/27	DISCH OF CHARGE		*** COMPLETELY DELETED *** THE TORONTO-DOMINION BANK		
REMARKS: RE: RC1215703						

NOTE: ADJOINING PROPERTIES SHOULD BE INVESTIGATED TO ASCERTAIN DESCRIPTIVE INCONSISTENCIES, IF ANY, WITH DESCRIPTION REPRESENTED FOR THIS PROPERTY.
NOTE: ENSURE THAT YOUR PRINTOUT STATES THE TOTAL NUMBER OF PAGES AND THAT YOU HAVE PICKED THEM ALL UP.

Appendix E:
Environmental Source Information

Ontario Ministry of the Environment

Freedom of Information Request

This form is for requesting documents which are in the Ministry's files on environmental concerns related to properties. Please refer to the guide on completion and use of this form. Our fax no. is (416) 314-4285.

Requester Data	For Ministry Use Only
Name, Company Name, Mailing Address and Email Address of Requester G2S Environmental Consulting Email address: 107-3370 S. Service Rd Burlington, ON L7N 3M6 jessicab@g2senvironmental.com	FOI Request No. / Date Request Received Fee Paid ☐ ACCT ☐ CHQ ☐ VISA/MC ☐ CASH
Telephone/Fax Nos. Tel. 905 331 3735 Fax 905 642 5999 Your Project/Reference No. G2S18006a Signature/Print /Name of Requester Jessica Boelhouwer	☐ CNR ☐ ER ☐ NOR ☐ SWR ☐ WCR ☐ SAC ☐ IEB ☐ EAA ☐ EMR ☐ SWA

Request Parameters

Municipal Address / Lot, Concession, Geographic Township **(Municipal address essential for cities, towns or regions)**
41 Essa Road, Barrie

Present Property Owner(s) and Date(s) of Ownership
N/A

Previous Property Owner(s) and Date(s) of Ownership
Dangerfield Holdings Ltd. (1966-1977)

Present/Previous Tenant(s),(if applicable)

Search Parameters *Files older than 2 years may require $60.00 retrieval cost. There is no guarantee that records responsive to your request will be located.*	Specify Year(s) Requested
Environmental concerns (General correspondence, occurrence reports, abatement)	1900 - current
Orders	↓
Spills	
Investigations/prosecutions ➤ Owner **AND** tenant information must be provided	
Waste Generator number/classes	

Certificates of Approval ➤ Proponent information must be provided

1985 and prior records are searched manually. **Search fees in excess of $300.00** could be incurred, depending on the types and years to be searched. Specify Certificates of Approval number(s) (if known). **If supporting documents are also required, mark SD box** and specify type e.g. maps, plans, reports, etc.

	SD	Specify Year(s) Requested
air - *emissions*		1900-current
water - *mains, treatment, ground level, standpipes & elevated storage, pumping stations (local & booster)*		↓
sewage - *sanitary, storm, treatment, stormwater, leachate & leachate treatment & sewage pump stations*		
waste water - *industrial discharges*		
waste sites - *disposal, landfill sites, transfer stations, processing sites, incinerator* sites		
waste systems - *PCB destruction, mobile waste processing units, haulers: sewage, non-hazardous & hazardous waste*		
pesticides - *licenses*		

A $5.00 non-refundable application fee, payable to the Minister of Finance, is mandatory. The cost of locating on-site and/or preparing any record is $30.00/hour and 20 cents/page for photocopying and you will be contacted for approval for fees in excess of $30.00.

Ontario Ministry of the Environment

Freedom of Information Request

This form is for requesting documents which are in the Ministry's files on environmental concerns related to properties. Please refer to the guide on completion and use of this form. Our fax no. is (416) 314-4285.

Requester Data

Name, Company Name, Mailing Address and Email Address of Requester

G2S Environmental Consulting
107-3370 S. Service Rd
Burlington, ON L7N 3M6
jessicab@g2senvironmental.com

Telephone/Fax Nos.
Tel. 905 331 3735
Fax 905 642 5999

Your Project/Reference No.
G2S180066

Signature/Print /Name of Requester
Jessica Boelhouwer

For Ministry Use Only

FOI Request No.

Date Request Received

Fee Paid

☐ ACCT ☐ CHQ ☐ VISA/MC ☐ CASH

☐ CNR ☐ ER ☐ NOR ☐ SWR ☐ WCR
☐ SAC ☐ IEB ☐ EAA ☐ EMR ☐ SWA

Request Parameters

Municipal Address / Lot, Concession, Geographic Township **(Municipal address essential for cities, towns or regions)**
43 Essa Road, Barrie

Present Property Owner(s) and Date(s) of Ownership
Barrie Drive-A-Car (1979) Ltd. (2015 - present)

Previous Property Owner(s) and Date(s) of Ownership
Dangerfield Holdings Ltd. (1966 - 2015)

Present/Previous Tenant(s),(if applicable)
Fleetham, O.E. (1966), National Grocers Co. Ltd. (1965-1966)

Search Parameters *Files older than 2 years may require $60.00 retrieval cost. There is no guarantee that records responsive to your request will be located.*	Specify Year(s) Requested
Environmental concerns (General correspondence, occurrence reports, abatement)	1900 - current
Orders	
Spills	
Investigations/prosecutions ➤ Owner **AND** tenant information must be provided	
Waste Generator number/classes	

Certificates of Approval ➤ Proponent information must be provided

1985 and prior records are searched manually. **Search fees in excess of $300.00** could be incurred, depending on the types and years to be searched. Specify Certificates of Approval number(s) (if known). **If supporting documents are also required, mark SD box** and specify type e.g. maps, plans, reports, etc.

	SD	Specify Year(s) Requested
air - *emissions*		1900 - current
water - *mains, treatment, ground level, standpipes & elevated storage, pumping stations (local & booster)*		
sewage - *sanitary, storm, treatment, stormwater, leachate & leachate treatment & sewage pump stations*		
waste water - *industrial discharges*		
waste sites - *disposal, landfill sites, transfer stations, processing sites, incinerator* sites		
waste systems - *PCB destruction, mobile waste processing units, haulers: sewage, non-hazardous & hazardous waste*		
pesticides - *licenses*		

A $5.00 non-refundable application fee, payable to the Minister of Finance, is mandatory. The cost of locating on-site and/or preparing any record is $30.00/hour and 20 cents/page for photocopying and you will be contacted for approval for fees in excess of $30.00.

Environmental Site Registry

Location: Ministry > Bro

Records of site condition and transition notices

Search Records of Site Condition and Transition Notices

Change

Search criteria:	**Site Municipality** is *BARRIE*.

Press 'Number', 'Filing Date' or 'Municipality' to sort search results by that criterion.

Page 1 of 1

Number		Filing Owner RSC Property Address	Filing Date Municipality
114155	RSC	Rainsong Land Development Inc. Northwest Corner of Lockhart Road and Yonge Street, Barrie, Ontario	Jun 22, 2011 BARRIE
113343	RSC	Ruby Red Maple Development Inc. 3984 10th Line, Barrie, Ontario	Jun 20, 2011 BARRIE
112338	RSC	PowerStream Inc. 43 CUNDLES RD E, BARRIE, ON, L4M 2Z6	Jun 14, 2011 BARRIE
108510	RSC	PowerStream Inc. 46 WELLINGTON ST E, BARRIE, ON, L4M 2C2	Jun 14, 2011 BARRIE
111139	RSC	PowerStream Inc. 11 LITTLE AVE, BARRIE, ON, L4N 3T6	Jun 14, 2011 BARRIE
108116	RSC	The Corporation of the City of Barrie 294 HURONIA RD, BARRIE, ON, L4N 6V1	Jun 13, 2011 BARRIE
112314	RSC	The Corporation of the City of Barrie 500 DUCKWORTH ST, BARRIE, ON, L4M 7B6	Jun 13, 2011 BARRIE
99124	RSC	480 Bayfield Inc. 480 BAYFIELD ST, BARRIE, ON, L4M 5A2	Apr 18, 2011 BARRIE
91912	RSC	Powerstream Inc. 33 FERNDALE DR, BARRIE, ON, L4N 9V5	Apr 05, 2011 BARRIE
88118	RSC	Brian Michael Wight 576 ESSA RD, RR 5, BARRIE, ON, L4N 9E6	Mar 10, 2011 BARRIE
94918	RSC	Schmidt & Shaw Ltd. 304 BLAKE ST, BARRIE, ON, L4M 1K8	Jan 21, 2011 BARRIE
91517	RSC	Reidco North Ltd 254 PENETANGUISHENE RD, BARRIE, ON, L4M 7C2	Oct 28, 2010 BARRIE
86312	RSC	Bertram Brothers Limited 42 Anne Street South, Barrie, Ontario, L4N 2E1	Oct 06, 2010 BARRIE
81916	RSC	Red Brick Realty Corp. 363 DUCKWORTH ST, BARRIE, ON, L4M 5C2	Jul 20, 2010 BARRIE
79712	RSC	Karita Towers Limited 15 MAPLE AVE, BARRIE, ON, L4N 1R7	Jun 16, 2010 BARRIE
45994	RSC	Pratt Hansen Group Inc. 00268 PENETANGUISHENE RD, BARRIE, ON, L4M 7C2	Jan 08, 2009 BARRIE
45097	RSC	Victoria Square Developments Inc No municipal address	Jun 09, 2008 BARRIE
45080	RSC	Victoria Square Developments Inc. No municipal address	Jun 09, 2008 BARRIE
42301	RSC	Invar (Vespra) Limited 33 ELLEN ST, BARRIE, ON, L4N 6E9	Apr 22, 2008 BARRIE
41916	RSC	Invar (Vespra) Limited 33 ELLEN ST, BARRIE, ON, L4N 6E9	Feb 07, 2008 BARRIE
42105	RSC	Invar (Vespra) Limited 33 ELLEN ST, BARRIE, ON, L4N 6E9	Feb 07, 2008 BARRIE
13100	RSC	Victoria Square Developments Inc. 37 Ellen Street Barrie Ontario, L4N 6G2	Mar 21, 2007 BARRIE

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ver. 1.3.11 November 16, 2017 RC1

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Instrument Final Decision - Notice of Decision on Appeal:

Instrument Type: Environmental Compliance Approval (project type: sewage) - EPA Part II.1-sewage
Instrument Holder: The Corporation of the City of Barrie
Instrument Issued by: Ministry of the Environment

EBR Registry Number: 011-3201
Ministry Reference Number: 6788-88WPMC
Loaded by: Environmental Commissioner of Ontario
Date Proposal loaded to the Registry: April 11, 2011
Date Decision loaded to the Registry: July 04, 2012
Date of the Decision on Appeal: April 03, 2013
Date Notice of Appeal received: July 12, 2012
Date Notice of Appeal loaded to Registry: November 26, 2012
Date Notice of Decision on Appeal loaded to Registry: April 05, 2013

Keyword(s): Wastewater | Sewage

Application for Appeal Initiated by:

Applicant Name:

The Corporation of the City of Barrie (the "Appellant")

Final Decision pertaining to Appeal:

At a preliminary hearing on January 23, 2013, the parties (the Appellant and the Ministry of the Environment) agreed that there were two sets of issues raised in the appeal. One set, termed the "housekeeping issues", involved minor matters related to the amended Environmental Compliance Approval (ECA). The second set involved more substantive issues about the phosphorous effluent limits in the ECA and the interplay of such limits with the laws and policies relating to the protection of Lake Simcoe.

At the resumption of the preliminary hearing on March 6, 2013, the parties jointly submitted to the Environmental Review Tribunal that the "housekeeping issues" had all been resolved through proposed changes to the ECA as set out in a Settlement Agreement. The parties further agreed that the Appellant's more substantive issues with respect to the amended ECA were to be addressed in another forum. The Appellant submitted that it continues to have concerns with the annual phosphorous concentration limit, but that it will carry on discussions with the Ministry on that subject within the context of the "Phosphorous Reduction Strategy" for Lake Simcoe.

The parties therefore requested that the Tribunal accept the proposed Settlement Agreement, direct the Director to amend the ECA pursuant to the proposed agreement, and dismiss the appeal. Accordingly, on April 3, 2013, the Tribunal accepted the parties' Settlement Agreement, directed the Director to amend the ECA in accordance with the agreement, and dismissed the appeal.

For Information on hearing dates and locations, please contact:

Appellate Body:

Secretary
Environmental Review Tribunal
655 Bay Street
Floor 15
Toronto
M5G 1E5
Phone: (416) 212-6349
Fax: (416) 326-5370
Toll Free Phone: (866) 448-2248

or

Environmental Commissioner of Ontario:

Environmental Commissioner of Ontario
1075 Bay Street
Suite 605
Toronto Ontario
M5S 2B1
Phone: (416) 325-3377
Toll Free Phone: (800) 701-6454

Other Information:

The full text of the decision may be available by accessing the Environmental Review Tribunal's web site – www.ert.gov.on.ca – click on the "decisions" icon. If provided, the decision can be downloaded in portable document format (PDF).

Location(s) Related to this Instrument:

249 Bradford Street

Barrie, County of Simcoe

CITY OF BARRIE

Additional Information:

The documents linked below are provided for information purposes only
All links will open in a new window

1. Copy Of Environmental Compliance Approva l # 6788-88WPMC

View Appeal
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Environmental Registry
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Ontario

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Instrument Appeal Notice of Appeal:

Instrument Type: Environmental Compliance Approval (project type: sewage) - EPA Part II.1-sewage
Instrument Holder: The Corporation of the City of Barrie
Instrument Issued by: Ministry of the Environment

EBR Registry Number: 011-3201
Ministry Reference Number: 6788-88WPMC
Loaded by: Environmental Commissioner of Ontario
Date Proposal loaded to the Registry: April 11, 2011
Date Decision loaded to the Registry: July 04, 2012
Date Notice of Appeal received: July 12, 2012
Date Notice of Appeal loaded to Registry: November 26, 2012

Keyword(s): Wastewater | Sewage

Application for Appeal Initiated by:

Applicant Name:

The Corporation of the City of Barrie (the "Appellant")

Decision under Appeal:

On June 28, 2012, the Ministry of the Environment issued an amended Environmental Compliance Approval # 8145-8D3PZ7 (ECA) for the City of Barrie's municipal sewage treatment works. The amendments to the approval were ministry-initiated to fulfil the requirements of policies under the Lake Simcoe Protection Plan and the related Phosphorus Reduction Strategy related to sewage treatment plants. The amendments included new Objectives and Limits for Annual Phosphorus Concentrations and Loadings to be complied with by June 2, 2015, or by the next expansion.

Grounds for Appeal:

The Appellant is appealing all sections of the ECA that were amended from the prior approval.

The Appellant's appeal focused on the following main grounds:

1. The wastewater treatment facility is not designed to and does not have the proper equipment and processes in place to consistently meet the new phosphorous concentration limit of 0.1 mg/litre by June 2, 2015.

2. With the near completion of the current plant expansion, it can be foreseen that as the wastewater flows increase due to growth, and as the facility receives hauled sewage, there will be a rise in the phosphorous levels. It will become particularly difficult to ensure the compliance limits during extreme weather events.

3. The timeline for compliance of June 2, 2015, is unreasonable. It would be nearly impossible to meet the timeline for the construction of any new phosphorous removal

For Information on hearing dates and locations, please contact:

Appellate Body:

Secretary
Environmental Review Tribunal
655 Bay Street
Floor 15
Toronto
M5G 1E5
Phone: (416) 212-6349
Fax: (416) 326-5370
Toll Free Phone: (866) 448-2248

or

Environmental Commissioner of Ontario:

Environmental Commissioner of Ontario
1075 Bay Street
Suite 605
Toronto Ontario
M5S 2B1
Phone: (416) 325-3377
Toll Free Phone: (800) 701-6454

Location(s) Related to this Instrument:

capital works of this proposed magnitude.

4. Achieving the compliance limit would increase the treatment plant's operating and capital costs.

For Information on hearing dates and locations, please contact:

Appellate Body:

Secretary
Environmental Review Tribunal
655 Bay Street
Floor 15
Toronto
M5G 1E5
Phone: (416) 212-6349
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Suite 605
Toronto Ontario
M5S 2B1
Phone: (416) 325-3377
Toll Free Phone: (800) 701-6454

As the application is considered, this information will be updated by the Environmental Commissioner of Ontario.

249 Bradford Street

Barrie, County of Simcoe

CITY OF BARRIE

Additional Information:

The documents linked below are provided for the purposes of enhancing public consultation.
All links will open in a new window

1. Copy Of Environmental Compliance Approva I # 6788-88WPMC

View Decision
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Canada

Environment and Climate Change Canada

Historical Substance Reports

Data as of: September 14, 2017

Return to NPRI Data Search

Return to 2015 Facility & Substance Information for
The Corporation of the City of Barrie - Wastewater Treatment Facility

Additional resources for accessing, understanding and analyzing NPRI data.
NPRI data is also available for download in ACCESS and EXCEL formats.

Company/Facility information: The Corporation of the City of Barrie/Wastewater Treatment Facility (2015)

Information for Wastewater Treatment Facility

Company	The Corporation of the City of Barrie
Facility	Wastewater Treatment Facility
NPRI ID	5986
Address	249 Bradford Street Barrie, ON L4M4T5 Canada

(1) NOTE: as of the 2006 reporting year, the Disposal columns include information on tailings and waste rock disposals. Negative numbers are possible for on-site disposal of tailings and waste rock, which would reflect a net removal of the substances from the tailings or waste rock management area.

(2) NOTE: Off-site column under Disposal in this table includes 'Off-site Disposal' and 'Off-Site Treatment Prior to Final Disposal'

Ammonia (total) (NA - 16)

Historical reports for Ammonia (total) (NA - 16)

Year	On-Site Releases				Disposal[1]		Off-Site Recycling	Units
	Air	Water	Land	Total	On-Site	Off-Site[2]		
2016	47	8.3	-	55	-	90	-	tonnes
2015	46	21	-	67	-	85	-	tonnes
2014	48	49	-	96	0	94	-	tonnes
2013	48	38	-	86	-	103	-	tonnes
2012	45	16	-	61	-	96	-	tonnes

Year	On-Site Releases				Disposal[1]		Off-Site Recycling	Units
	Air	Water	Land	Total	On-Site	Off-Site[2]		
2011	46	17	-	63	-	85	-	tonnes
2010	42	20	-	61	-	74	-	tonnes
2009	43	24	-	68	-	71	-	tonnes
2008	44	31	-	74	-	72	-	tonnes
2007	-	35	-	35	-	86	-	tonnes
2006	-	90	-	90	-	65	-	tonnes
2005	-	142	-	142	-	112	-	tonnes
2004	-	73	-	73	-	-	106	tonnes
2003	39	68	-	106	-	-	84	tonnes
2002	39	50	-	89	-	-	86	tonnes
2001	-	39	-	39	-	110	-	tonnes

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Arsenic (and its compounds) (NA - 02)

Historical reports for Arsenic (and its compounds) (NA - 02)

Year	On-Site Releases				Disposal[1]		Off-Site Recycling	Units
	Air	Water	Land	Total	On-Site	Off-Site[2]		
2010	0.000	-	-	0.000	-	223	-	kg

[Back to top]

Cadmium (and its compounds) (NA - 03)

Historical reports for Cadmium (and its compounds) (NA - 03)

Year	On-Site Releases				Disposal[1]		Off-Site Recycling	Units
	Air	Water	Land	Total	On-Site	Off-Site[2]		
2012	0.001	-	-	0.001	-	6.3	-	kg
2011	0.002	-	-	0.002	-	2.3	-	kg
2010	0.001	-	-	0.001	-	58	-	kg

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Chlorine (7782-50-5)

Historical reports for Chlorine (7782-50-5)

Year	On-Site Releases				Disposal[1]		Off-Site Recycling	Units
	Air	Water	Land	Total	On-Site	Off-Site[2]		
2010	-	-	-	0	-	-	-	tonnes

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Copper (and its compounds) (NA - 06)

Historical reports for Copper (and its compounds) (NA - 06)

Year	On-Site Releases				Disposal[1]		Off-Site Recycling	Units
	Air	Water	Land	Total	On-Site	Off-Site[2]		
2010	-	-	-	0	-	54	-	tonnes

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Lead (and its compounds) (NA - 08)

Historical reports for Lead (and its compounds) (NA - 08)

Year	On-Site Releases				Disposal[1]		Off-Site Recycling	Units
	Air	Water	Land	Total	On-Site	Off-Site[2]		
2016	0.001	-	-	0.001	-	140	-	kg
2015	0.001	-	-	0.001	-	74	-	kg
2005	-	-	-	-	-	0.097	-	kg

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Mercury (and its compounds) (NA - 10)

Historical reports for Mercury (and its compounds) (NA - 10)

Year	On-Site Releases				Disposal[1]		Off-Site Recycling	Units
	Air	Water	Land	Total	On-Site	Off-Site[2]		
2014	0.000	-	-	0.000	0	6.6	-	kg
2013	0.000	-	-	0.000	-	6.6	-	kg
2012	0.000	-	-	0.000	-	5.0	-	kg

Year	On-Site Releases				Disposal[1]		Off-Site Recycling	Units
	Air	Water	Land	Total	On-Site	Off-Site[2]		
2010	0.000	-	-	0.000	-	67	-	kg

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Nitrate ion (NA - 17)

Historical reports for Nitrate ion (NA - 17)

Year	On-Site Releases				Disposal[1]		Off-Site Recycling	Units
	Air	Water	Land	Total	On-Site	Off-Site[2]		
2010	-	-	-	-	-	-	-	tonnes
2009	-	1,650	-	1,650	-	-	-	tonnes
2008	-	1,540	-	1,540	-	-	-	tonnes
2007	-	1,614	-	1,614	-	-	-	tonnes
2006	-	1,425	-	1,425	-	-	-	tonnes
2005	-	1,237	-	1,237	-	-	-	tonnes
2004	-	1,363	-	1,363	-	-	-	tonnes
2003	-	1,304	-	1,304	-	-	-	tonnes
2002	-	966	-	966	-	-	-	tonnes
2001	-	162	-	162	-	-	-	tonnes

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Phosphorus (total) (NA - 22)

Historical reports for Phosphorus (total) (NA - 22)

Year	On-Site Releases				Disposal[1]		Off-Site Recycling	Units
	Air	Water	Land	Total	On-Site	Off-Site[2]		
2016	-	0.585	-	0.585	-	83	-	tonnes
2015	-	1.3	-	1.3	-	77	-	tonnes
2014	-	0.861	-	0.861	0	75	-	tonnes
2013	-	1.5	-	1.5	-	75	-	tonnes
2012	-	1.1	-	1.1	-	93	-	tonnes

Year	On-Site Releases				Disposal[1]		Off-Site Recycling	Units
	Air	Water	Land	Total	On-Site	Off-Site[2]		
2011	-	1.3	-	1.3	-	99	-	tonnes
2010	-	1.4	-	1.4	-	83	-	tonnes
2009	-	1.5	-	1.5	-	61	-	tonnes
2008	-	2.5	-	2.5	-	54	-	tonnes
2007	-	2.3	-	2.3	-	78	-	tonnes
2006	-	3.3	-	3.3	-	57	-	tonnes
2005	-	4.1	-	4.1	-	76	-	tonnes
2004	-	2.9	-	2.9	-	-	69	tonnes
2003	-	2.0	-	2.0	-	-	55	tonnes

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PM10 (NA - M09)

Historical reports for PM10 (NA - M09)

Year	On-Site Releases				Disposal[1]		Off-Site Recycling	Units
	Air	Water	Land	Total	On-Site	Off-Site[2]		
2009	0.640	-	-	0.640	-	-	-	tonnes
2008	0.815	-	-	0.815	-	-	-	tonnes
2007	0.998	-	-	0.998	-	-	-	tonnes
2006	0.930	-	-	0.930	-	-	-	tonnes
2005	1.0	-	-	1.0	-	-	-	tonnes

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PM2.5 (NA - M10)

Historical reports for PM2.5 (NA - M10)

Year	On-Site Releases				Disposal[1]		Off-Site Recycling	Units
	Air	Water	Land	Total	On-Site	Off-Site[2]		
2007	0.333	-	-	0.333	-	-	-	tonnes
2006	0.310	-	-	0.310	-	-	-	tonnes

Year	On-Site Releases				Disposal[1]		Off-Site Recycling	Units
	Air	Water	Land	Total	On-Site	Off-Site[2]		
2005	0.330	-	-	0.330	-	-	-	tonnes

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Toluene (108-88-3)

Historical reports for Toluene (108-88-3)

Year	On-Site Releases				Disposal[1]		Off-Site Recycling	Units
	Air	Water	Land	Total	On-Site	Off-Site[2]		
2009	5.9	-	-	5.9	-	-	-	tonnes
2008	6.0	-	-	6.0	-	-	-	tonnes
2007	6.0	-	-	6.0	-	-	-	tonnes
2006	6.0	-	-	6.0	-	-	-	tonnes
2005	5.8	-	-	5.8	-	-	-	tonnes

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Volatile organic compounds (NA - M16)

Historical reports for Volatile organic compounds (NA - M16)

Year	On-Site Releases				Disposal[1]		Off-Site Recycling	Units
	Air	Water	Land	Total	On-Site	Off-Site[2]		
2016	22	-	-	22	-	-	-	tonnes
2015	22	-	-	22	-	-	-	tonnes
2014	23	-	-	23	-	-	-	tonnes
2013	23	-	-	23	-	-	-	tonnes
2012	21	-	-	21	-	-	-	tonnes
2011	22	-	-	22	-	-	-	tonnes
2010	20	-	-	20	-	-	-	tonnes
2009	21	-	-	21	-	-	-	tonnes
2008	21	-	-	21	-	-	-	tonnes

Year	On-Site Releases				Disposal[1]		Off-Site Recycling	Units
	Air	Water	Land	Total	On-Site	Off-Site[2]		
2007	21	-	-	21	-	-	-	tonnes
2006	21	-	-	21	-	-	-	tonnes
2005	20	-	-	20	-	-	-	tonnes

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Xylene (all isomers) (1330-20-7)

Historical reports for Xylene (all isomers) (1330-20-7)

Year	On-Site Releases				Disposal[1]		Off-Site Recycling	Units
	Air	Water	Land	Total	On-Site	Off-Site[2]		
2009	1.9	-	-	1.9	-	-	-	tonnes
2008	2.0	-	-	2.0	-	-	-	tonnes
2007	2.0	-	-	2.0	-	-	-	tonnes
2006	2.0	-	-	2.0	-	-	-	tonnes
2005	1.9	-	-	1.9	-	-	-	tonnes

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Zinc (and its compounds) (NA - 14)

Historical reports for Zinc (and its compounds) (NA - 14)

Year	On-Site Releases				Disposal[1]		Off-Site Recycling	Units
	Air	Water	Land	Total	On-Site	Off-Site[2]		
2010	-	-	-	0	-	41	-	tonnes

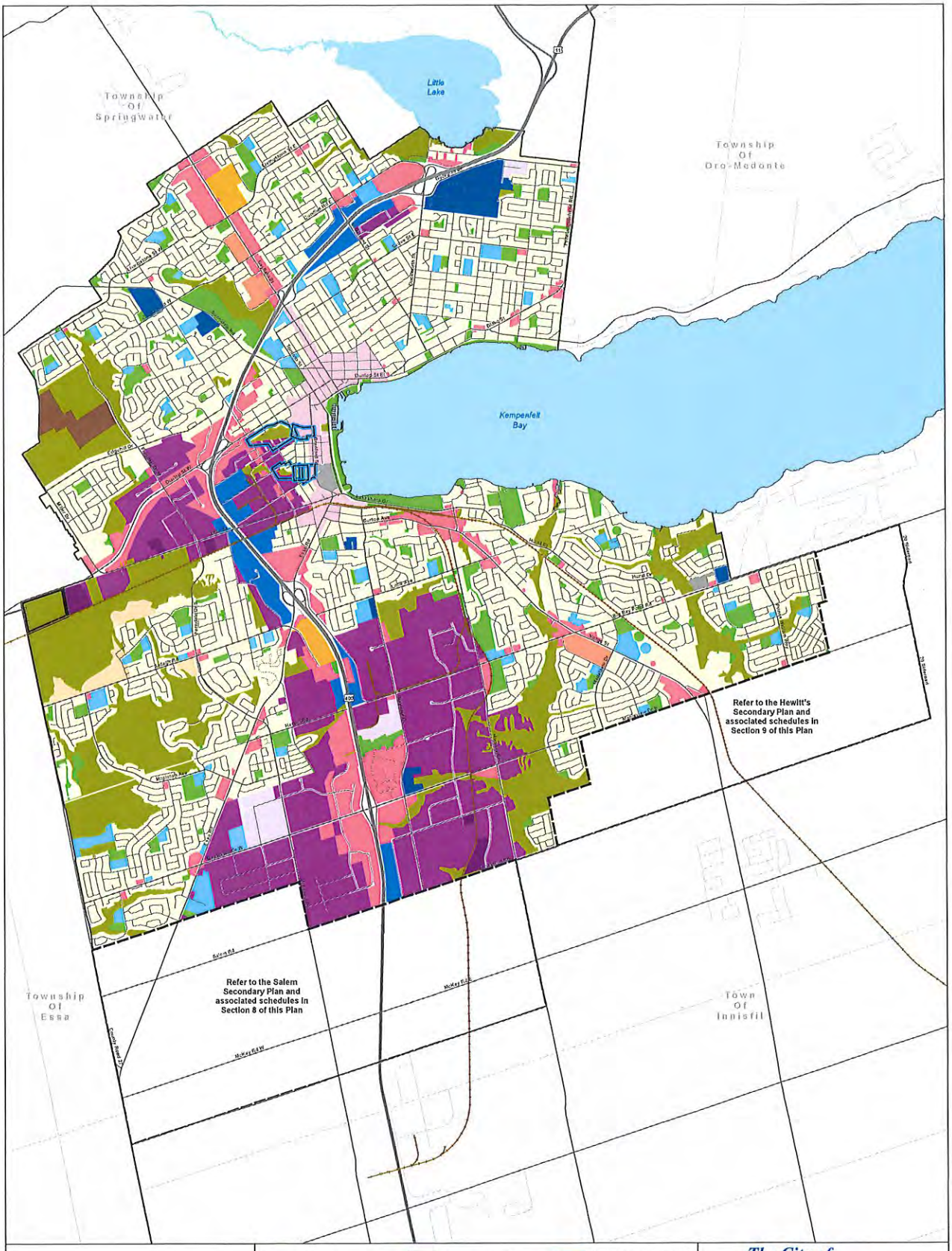
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Ontario O.Reg. 127/01 data

▶ View the Ontario O.Reg. 127/01 data for this facility

Units:

- tonnes
- g - grams



OFFICIAL PLAN

Schedule A
Land Use

March 2017

- Residential
- City Centre
- General Commercial
- Community Centre Commercial
- Regional Centre Commercial
- Business Park
- General Industrial
- Highway 400 Industrial
- Restricted Industrial
- Institutional
- Educational Institutional
- Major Institutional
- Open Space
- Environmental Protection Area
- Water Treatment Centre
- Waste Management Facility
- Future Urban
- Waste Disposal Area - Non decision per section 4.7.2.8
- Application Before the Ontario Municipal Board (OMB)
- Secondary Plan Boundary
- City Boundary

The City of BARRIE

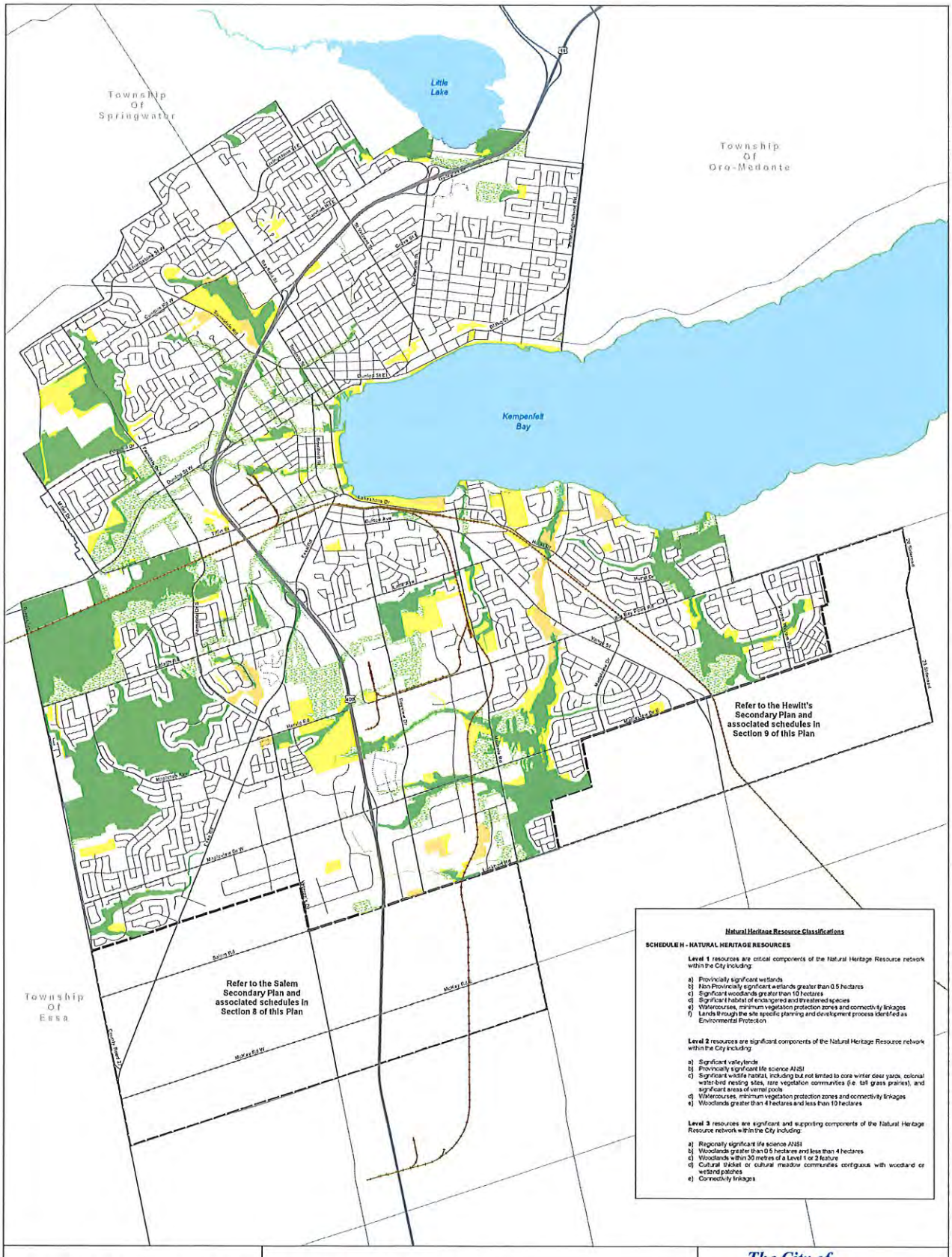
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0 0.5 1 2 km

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GIS Branch 4/5/2017



Natural Heritage Resource Classifications

SCHEDULE H - NATURAL HERITAGE RESOURCES

Level 1 resources are critical components of the Natural Heritage Resource network within the City including:

a) Provincially significant wetlands
b) Non-Provincially significant wetlands greater than 0.5 hectares
c) Significant woodlands greater than 10 hectares
d) Significant habitat of endangered and threatened species
e) Watercourses, minimum vegetation protection zones and connectivity linkages
f) Lands through the site specific planning and development process identified as Environmental Protection

Level 2 resources are significant components of the Natural Heritage Resource network within the City including:

a) Significant valleylands
b) Provincially significant life science ANSI
c) Significant wildlife habitat, including but not limited to core winter deer yards, colonial water-bird nesting sites, rare vegetation communities (i.e. tall grass prairies), and significant areas of vernal pools
d) Watercourses, minimum vegetation protection zones and connectivity linkages
e) Woodlands greater than 4 hectares and less than 10 hectares

Level 3 resources are significant and supporting components of the Natural Heritage Resource network within the City including:

a) Regionally significant life science ANSI
b) Woodlands greater than 0.5 hectares and less than 4 hectares
c) Woodlands within 30 metres of a Level 1 or 2 feature
d) Cultural thicket or cultural meadow communities contiguous with woodland or wetland patches
e) Connectivity linkages

OFFICIAL PLAN
Schedule H
Natural Heritage Resources
March 2017

Natural Heritage Resource Classification

- Level 1
- Level 1 With Existing Development Designation Subject to 3.5.2.4 d
- Level 2
- Level 3

The City of BARRIE

1:20,000

0 0.5 1 2 km

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GIS Branch 4/5/2017

Appendix F:
Water Well Request and Records

Ministry of Environment and Energy
Ontario

The Ontario Water Resources Act
WATER WELL RECORD

Print only in spaces provided.
Mark correct box with a checkmark, where applicable.

11 5738379 Municipality 67501 Con.

County or District	Township/Borough/City/Town/Village	Con	block	tract	survey, etc.	Lot
SIMCOE	BARRIE					

Owner's surname	First name	Address	Date completed (day / month / year)
CITY OF	BARRIE	UTM CO-ORDINATES	22 / 9 / 03

21 NORTHING - 4921324 Zone Easting Northing EASTING - 604205 RC Elevation RC Basin Code

LOG OF OVERBURDEN AND BEDROCK MATERIALS (see instructions)

General colour	Most common material	Other materials	General description	Depth – feet From	Depth – feet To
	CB03-3-1	CB03-3-2	CLUSTER WELL RECORD		
FILL				0m	1.5m
BROWN	SANDY-SILT			1.5m	7.5m
GREY	SILT			7.5m	12.5m
GREY	SAND SILT			12.5m	16m

31 CLUSTER WELL RECORD PERMITTED BY CLIENT

32

WATER RECORD

Water found at – feet	Kind of water		
52m	☑ Fresh	☐ Sulphur	☐ Minerals ☐ Gas
	☐ Salty		
	☐ Fresh	☐ Sulphur	☐ Minerals ☐ Gas
	☐ Salty		
	☐ Fresh	☐ Sulphur	☐ Minerals ☐ Gas
	☐ Salty		
	☐ Fresh	☐ Sulphur	☐ Minerals ☐ Gas
	☐ Salty		
	☐ Fresh	☐ Sulphur	☐ Minerals ☐ Gas
	☐ Salty		

CASING & OPEN HOLE RECORD

Inside diam inches	Material	Wall thickness inches	Depth – feet From	Depth – feet To
2"	☐ Steel ☐ Galvanized ☐ Concrete ☐ Open hole ☑ Plastic	SCH 40	0m	43m
2	☐ Steel ☐ Galvanized ☐ Concrete ☐ Open hole ☑ Plastic	SCH 40	0m	13m
	☐ Steel ☐ Galvanized ☐ Concrete ☐ Open hole ☐ Plastic			

SCREEN

Sizes of opening (Slot No.)	Diameter	Length
10	2" inches	3m feet

Material and type: PVC
Depth at top of screen: 43/13m feet

PLUGGING & SEALING RECORD

61 ☑ Annular space ☐ Abandonment

	Depth set at – feet From	Depth set at – feet To	Material and type (Cement grout, bentonite, etc.)
1	0m	3.7m	BENTONITE HOLE PLUG
2	0m	0.8m	BENTONITE HOLE PLUG
3	0.8m	12.4m	BENTONITE GROUT

PUMPING TEST

71 Pumping test method: ☐ Pump ☐ Bailer
Pumping rate: GPM
Duration of pumping: Hours Mins

Static level	Water level end of pumping	Water levels during ☐ Pumping ☐ Recovery: 15 minutes	30 minutes	45 minutes	60 minutes
feet	feet	feet	feet	feet	feet

If flowing give rate: GPM
Pump intake set at: N/A feet
Water at end of test: ☐ Clear ☐ Cloudy
Recommended pump type: ☐ Shallow ☐ Deep
Recommended pump setting: feet
Recommended pump rate: GPM

LOCATION OF WELL

In diagram below show distances of well from road and lot line.
Indicate north by arrow.

SEE ATTACHED SITE PLAN

159678

FINAL STATUS OF WELL

☐ Water supply
☑ Observation well
☐ Test hole
☐ Recharge well
☐ Abandoned, insufficient supply
☐ Abandoned, poor quality
☐ Abandoned (Other)
☐ Dewatering
☐ Unfinished
☐ Replacement well

WATER USE

☐ Domestic
☐ Stock
☐ Irrigation
☐ Industrial
☐ Commercial
☐ Municipal
☐ Public supply
☐ Cooling & air conditioning
☐ Not used
☑ Other

METHOD OF CONSTRUCTION

☐ Cable tool
☐ Rotary (conventional)
☐ Rotary (reverse)
☐ Rotary (air)
☐ Air percussion
☐ Boring
☐ Diamond
☐ Jetting
☐ Driving
☐ Digging
☑ Other

Name of Well Contractor	Well Contractor's Licence No.
LANTECH DRILLING SERVICES	6809

Address: 3661 MT. ALBERT RD, SHARON

Name of Well Technician	Well Technician's Licence No.
MIKE SOKOLOW	T2381

Signature of Technician/Contractor: Mike

Submission date: 24 / 11 / 03 (day / mo / yr)

MINISTRY USE ONLY: Audit No. 6809 DEC 01 2003

2 - MINISTRY OF ENVIRONMENT & ENERGY COPY

0506 (07/94) Front Form 9

Ontario Ministry of the Environment

Well T: A 033394 (number below)
A033394

Well Record

Regulation 903 Ontario Water Resources Act

page 1 of 3

Instructions for Completing Form

- For use in the **Province of Ontario** only. This document is a permanent **legal** document. Please retain for future reference.
- All Sections **must** be completed in full to avoid delays in processing. Further instructions and explanations are available on the back of this form.
- Questions regarding completing this application can be directed to the Water Well Management Coordinator at 416-235-6203.
- **All metre measurements shall be reported to 1/10th of a metre.**
- Please print clearly in blue or black ink only.

Ministry Use Only

MUN | CON | LOT

Well Owner's Information and Location of Well Information

[redacted]

RR#/Street Number/Name | City/Town/Village: BARRIE | Site/Compartment/Block/Tract etc.

GPS Reading: NAD 83 | Zone 17 | Easting 604079 | Northing 4914148 | Unit Make/Model | Mode of Operation: ☐ Undifferentiated ☐ Averaged ☐ Differentiated, specify

Log of Overburden and Bedrock Materials (see instructions)

General Colour	Most common material	Other Materials	General Description	Depth From	Depth To
Brown	Sand		medium Fine	0	31'
Brown	Sand	clay	layered	31'	39'
Brown	Sand	gravel	medium loose	39'	102'
grey	clay		Hard	102'	111'
Brown	Sand		Fine	111'	163'
Brown	Sand	gravel	course	163'	271'

Hole Diameter

Depth From	Depth To (Metres)	Diameter (Centimetres)
0	271'	5½"

Water Record

Water found at ___ Metres / Kind of Water

- ___ m ☐ Fresh ☐ Sulphur ☐ Gas ☐ Salty ☐ Minerals ☐ Other:
- ___ m ☐ Fresh ☐ Sulphur ☐ Gas ☐ Salty ☐ Minerals ☐ Other:
- ___ m ☐ Fresh ☐ Sulphur ☐ Gas ☐ Salty ☐ Minerals ☐ Other:

After test of well yield, water was: ☒ Clear and sediment free ☐ Other, specify

Chlorinated ☐ Yes ☒ No

Construction Record

Inside diam centimetres	Material	Wall thickness centimetres	Depth From	Depth To (Metres)
Casing				
50m	☐ Steel ☐ Fibreglass ☒ Plastic ☐ Concrete ☐ Galvanized		+2'	241'
	☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized			
	☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized			
Screen				
Outside diam	☐ Steel ☐ Fibreglass ☒ Plastic ☐ Concrete ☐ Galvanized	Slot No.		
52		10	241'	271'
No Casing or Screen				
	☐ Open hole			

Test of Well Yield

Pumping test method	Draw Down Time (min)	Draw Down Water Level (Metres)	Recovery Time (min)	Recovery Water Level (Metres)
Pump intake set at - (metres)	Static Level	23'6"		
Pumping rate - (litres/min)	1		1	
Duration of pumping ___ hrs + ___ min	2		2	
Final water level end of pumping ___ metres	3		3	
Recommended pump type. ☐ Shallow ☐ Deep	4		4	
Recommended pump depth. ___ metres	5		5	
Recommended pump rate. (litres/min)	10		10	
	15		15	
If flowing give rate - (litres/min)	20		20	
	25		25	
If pumping discontinued, give reason.	30		30	
	40		40	
	50		50	
	60		60	

Plugging and Sealing Record ☐ Annular space ☐ Abandonment

Depth set at - Metres From	To	Material and type (bentonite slurry, neat cement slurry) etc.	Volume Placed (cubic metres)
0	237'	grout	315gal

Method of Construction

☐ Cable Tool ☐ Rotary (air) ☐ Diamond ☐ Digging
☒ Rotary (conventional) ☐ Air percussion ☐ Jetting ☐ Other
☐ Rotary (reverse) ☐ Boring ☐ Driving

Water Use

☐ Domestic ☐ Industrial ☐ Public Supply ☐ Other
☐ Stock ☐ Commercial ☐ Not used
☐ Irrigation ☒ Municipal ☐ Cooling & air conditioning

Final Status of Well

☐ Water Supply ☐ Recharge well ☐ Unfinished ☐ Abandoned, (Other)
☒ Observation well ☐ Abandoned, insufficient supply ☐ Dewatering
☐ Test Hole ☐ Abandoned, poor quality ☐ Replacement well

Well Contractor/Technician Information

Name of Well Contractor: Canadian Soil Drilling | Well Contractor's Licence No.: C-7075

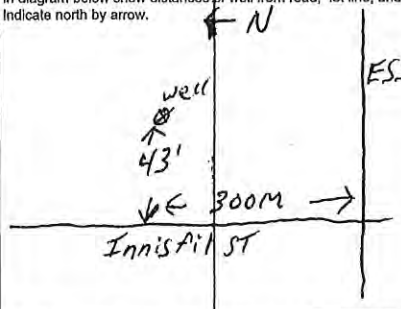
Business Address (street name, number, city etc.): 12493 Hwy 27 N Midhurst ON L0L 1X0

Name of Well Technician (last name, first name): Peter Fleming | Well Technician's Licence No.: T-2874

Signature of Technician/Contractor: x Peter Fleming | Date Submitted: 2005 12 15

Location of Well

In diagram below show distances of well from road, lot line, and building. Indicate north by arrow.



Audit No. Z 36549 | Date Well Completed: 2005 12 01

Was the well owner's information package delivered? ☐ Yes ☒ No | Date Delivered

Ministry Use Only

Data Source | Contractor 7075

Date Received FEB 14 2006 | Date of Inspection

Remarks | Well Record Number

0506E (09/03) Contractor's Copy ☐ Ministry's Copy ☐ Well Owner's Copy ☐ *Cette formule est disponible en français*

EAOD

Ontario Ministry of the Environment

Wel A 051765 (it number below)

A 051765

Well Record

Regulation 903 Ontario Water Resources Act

page ___ of ___

Instructions for Completing Form

- For use in the **Province of Ontario** only. This document is a permanent **legal** document. Please retain for future reference.
- All Sections **must** be completed in full to avoid delays in processing. Further instructions and explanations are available on the back of this form.
- Questions regarding completing this application can be directed to the Water Well Help Desk (Toll Free) at 1-888-396-9355.
- **All metre measurements shall be reported to 1/10th of a metre.**
- Please print clearly in blue or black ink only.

Ministry Use Only

MUN ___ CON ___ LOT ___

[redacted]

Address of Well Location (County/District/Municipality): 11 ESSA RD, SIMCOE

Township: ___ Lot: ___ Concession: ___

RR#/Street Number/Name: ___

City/Town/Village: Barrie

Site/Compartment/Block/Tract etc.: ___

GPS Reading: NAD 83 | Zone 17 | Easting 607333 | Northing 4911429

Unit Make/Model: Garmin

Mode of Operation: Survey

Undifferentiated ☑ Averaged ☐ Differentiated, specify ___

Log of Overburden and Bedrock Materials (see instructions)

General Colour	Most common material	Other Materials	General Description	Depth From	Depth To (Metres)
Brn	Gravel	Fill	Packed	0	.61
Brn	Sand		Loose course sand	.61	3.1
Brn	Sand		Loose course, wet sand	3.1	4.27

Hole Diameter

Depth From	Depth To (Metres)	Diameter (Centimetres)
0	4.27	6.35

Water Record

Water found at ___ Metres / Kind of Water

___ m ☐ Fresh ☐ Sulphur ☐ Gas ☐ Salty ☐ Minerals ☐ Other: ___

___ m ☐ Fresh ☐ Sulphur ☐ Gas ☐ Salty ☐ Minerals ☐ Other: ___

___ m ☐ Fresh ☐ Sulphur ☐ Gas ☐ Salty ☐ Minerals ☐ Other: ___

After test of well yield, water was ☐ Clear and sediment free ☐ Other, specify ___

Chlorinated ☐ Yes ☐ No

Construction Record

Inside diam centimetres	Material	Wall thickness centimetres	Depth From	Depth To (Metres)
Casing				
3.17	☐ Steel ☐ Fibreglass ☑ Plastic ☐ Concrete ☐ Galvanized	0.25	0	2.74
	☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized			
	☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized			
Screen				
Outside diam	☐ Steel ☐ Fibreglass ☑ Plastic ☐ Concrete ☐ Galvanized	Slot No. 10	2.74	4.27
No Casing or Screen				
	☐ Open hole			

Test of Well Yield

Pumping test method	Draw Down Time (min)	Draw Down Water Level (Metres)	Recovery Time (min)	Recovery Water Level (Metres)
Pump intake set at - (metres)	Static Level			
Pumping rate - (litres/min)	1		1	
Duration of pumping ___hrs +___ min	2		2	
Final water level end of pumping ___metres	3		3	
Recommended pump type. ☐ Shallow ☐ Deep	4		4	
Recommended pump depth. ___metres	5		5	
Recommended pump rate. (litres/min)	10		10	
	15		15	
If flowing give rate - (litres/min)	20		20	
	25		25	
If pumping discontinued, give reason.	30		30	
	40		40	
	50		50	
	60		60	

Plugging and Sealing Record

☑ Annular space ☐ Abandonment

Depth set at - Metres From	To	Material and type (bentonite slurry, neat cement slurry) etc.	Volume Placed (cubic metres)
0	.31	Concrete / Flushmount	
.31	2.44	Bensea l	
2.44	4.27	Sand	

Method of Construction

☐ Cable Tool ☐ Rotary (air) ☐ Diamond ☐ Digging
☐ Rotary (conventional) ☐ Air percussion ☐ Jetting ☑ Other Geoprobe
☐ Rotary (reverse) ☐ Boring ☐ Driving

Water Use

☐ Domestic ☐ Industrial ☐ Public Supply ☑ Other monitoring well
☐ Stock ☐ Commercial ☐ Not used
☐ Irrigation ☐ Municipal ☐ Cooling & air conditioning

Final Status of Well

☐ Water Supply ☐ Recharge well ☐ Unfinished ☑ Abandoned, (Other) monitoring well
☒ Observation well ☐ Abandoned, insufficient supply ☐ Dewatering
☒ Test Hole ☐ Abandoned, poor quality ☐ Replacement well

Well Contractor/Technician Information

Name of Well Contractor: STRATA SOIL SAMPLING — Well Contractor's Licence No.: 7241

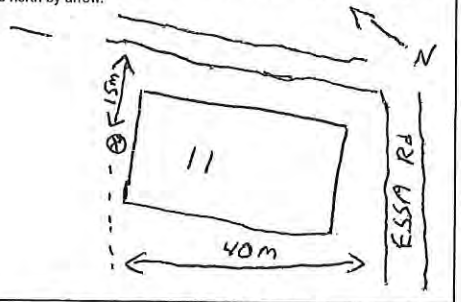
Business Address (street name, number, city etc.): 147 W. Beaver Creek Rd RICHMOND HILL

Name of Well Technician (last name, first name): [illegible] JOHN — Well Technician's Licence No.: T-3089

Signature of Technician/Contractor: X [signature] — Date Submitted: 2007 12 13

Location of Well

In diagram below show distances of well from road, lot line, and building. Indicate north by arrow.



Audit No. Z 59437

Date Well Completed: 2007 02 13

Was the well owner's information package delivered? ☐ Yes ☒ No

Date Delivered: ___

Ministry Use Only

Data Source: ___ Contractor: 7241

Date Received: MAY 07 2007 — Date of Inspection: ___

Remarks: ___ Well Record Number: ___

0506E (08/2006) Ministry's Copy

Cette formule est disponible en français

Appendix G:
HWIN Records

hwin

Registered HWIN Generators



FAQ's by Keyword Ask

The HWIN Registered Generator List is a list of all generators registered in HWIN. For each generator, waste classes registered by the generator are displayed. Please note that HWIN will not let a generator enter into a manifest transaction for a specific waste class unless that generator has registered that waste class in HWIN. A generator may, however, add a new waste class at any time (on My HWIN page, click Administration, then Waste Information, then follow the simple instructions).

The Registered Generator List also identifies the status of each generator as "In Good Standing" or "Not in Good Standing". A generator "In Good Standing" has met all obligations for payments associated with registration fees, waste tonnage fees (on-site and off-site) and manifest fees.

It is important to note that a generator's status may change based on the generator's transactions. For example, a generator may make a waste shipment that incurs fees greater than the generator's prepaid account causing the account to have a negative balance. At the time of this transaction, the generator's status in HWIN will change from "In Good Standing" to "Not In Good Standing".

Beginning in September, the Ministry began the transfer of paper manifest data generated during 2002 into HWIN. The Ministry temporarily suspended the "In Good Standing"/"Not In Good Standing" designation on the HWIN Registered Generator List to allow generators time to make payments for paper manifest transactions that had accumulated during the year. To allow generators to fulfill their full obligations under HWIN, including reconciliation of accounts for 2002 and the registration renewal process for 2003, the "In Good Standing"/"Not In Good Standing" designation will remain temporarily suspended. Notice will be provided by the Ministry prior to reactivation of the "In Good Standing"/"Not In Good Standing" designation later in 2003.

Generators with a negative account balance in HWIN after this time will be identified as "Not In Good Standing". Such generators will be in a position of not fulfilling their requirements under Regulation 347. Generators should ensure that their accounts are paid in full to enable them to make any manifest transactions. Please note that HWIN will not allow a generator that is "Not In Good Standing" to enter into a manifest transaction.

For information on the payment of fees associated with paper manifests and registration renewal for 2003, click on the appropriate links on the HWIN home page.

You may view an individual generator's status by typing in the generator's number below and clicking the search button. This search will provide you with the current status of the generator from the HWIN database

Generator number

Company name corporation of the city of barrie

Submit Reset

Generator Number	Generator Name	Address	Waste Class	Status
ON0310601	THE CORPORATION OF THE CITY OF BARRIE	Wastewater Treatment Facility, 249 Bradford Street Barrie, Simcoe, Ontario - L4n 3b7 Canada	View	Registered
ON6118900	The Corporation of The City of Barrie	34 Simcoe Street Barrie, Simcoe, Ontario - L4n 6t4 Canada	View	Registered
ON2847014	THE CORPORATION OF THE CITY OF BARRIE	Hhw Depot, 272 Ferndale Drive North Barrie, Simcoe, Ontario - L4n 6r2 Canada	View	Registered
ON2406426	Corporation of the City of Barrie Firestation No. 4	Fire Station #4, 250 Ardagh Road Barrie, Simcoe, Ontario - L4n 9b9 Canada	View	Registered
ON9112316	THE CORPORATION OF THE CITY OF BARRIE	Allandale Recreation Centre, 190 Bayview Drive Barrie, Simcoe, Ontario - L4n 4y8 Canada	View	Registered
ON8809486	THE CORPORATION OF THE CITY OF BARRIE	East Bayfield Community Centre, 80 Livingstone Street East Barrie, Simcoe, Ontario - L4m 6x9 Canada	View	Registered

ON7200243	THE CORPORATION OF THE CITY OF BARRIE	Barrie Molson Centre, 555 Bayview Dr Barrie, Simcoe, Ontario - L4n 8y2 Canada	View	Registered
ON9515670	THE CORPORATION OF THE CITY OF BARRIE	Operation Centre, 400, 165 Ferndale Drive North Barrie, Simcoe, Ontario - L4m 4t5 Canada	View	Registered
ON9260114	THE CORPORATION OF THE CITY OF BARRIE	Coal Yard, 400, 217 Dunlop Street East Barrie, Simcoe, Ontario - L4m 4t5 Canada	View	Registered
ON5911410	The Corporation of the City of Barrie	Marina, 55 Lakeshore Drive Barrie, Simcoe, Ontario - L4m 4t5 Canada	View	Registered
ON8378206	THE CORPORATION OF THE CITY OF BARRIE	Holly Community Centre, 171 Mapleton Avenue Barrie, Simcoe, Ontario - L4n 8t6 Canada	View	Registered
ON2633492	THE CORPORATION OF THE CITY OF BARRIE	2100 Nursery Road Springwater, Simcoe, Ontario - L0l 1x0 Canada	View	Registered
ON7678693	THE CORPORATION OF THE CITY OF BARRIE	Tiffin Street Barrie, Simcoe, Ontario - L4n 2n4 Canada	View	Registered
ON7906569	THE CORPORATION OF THE CITY OF BARRIE	Sanford Street Barrie, Simcoe, Ontario - L4n 3c5 Canada	View	Registered
ON6553479	THE CORPORATION OF THE CITY OF BARRIE	Boys Street South And Perry Street Barrie, Simcoe, Ontario - L3t 2p3 Canada	View	Registered
ON4117713	THE CORPORATION OF THE CITY OF BARRIE	Innisfil Street Barrie, Simcoe, Ontario - L4n 4k5 Canada	View	Registered
ON9624357	THE CORPORATION OF THE CITY OF BARRIE	Frederick Street Barrie, Simcoe, Ontario - L4n 7t1 Canada	View	Registered
ON6718161	THE CORPORATION OF THE CITY OF BARRIE	Sanford Street Barrie, Simcoe, Ontario - L4m 4v1 Canada	View	Registered
ON8223424	THE CORPORATION OF THE CITY OF BARRIE	Environmental Centre, 272 Ferndale Drive North Barrie, Simcoe, Ontario - L4n 6r2 Canada	View	Registered
ON6668632	The Corporation of the City of Barrie	83 Perry Street Barrie, Simcoe, Ontario - L4n 1z5 Canada	View	Registered
ON7741898	THE CORPORATION OF THE CITY OF BARRIE	157 Dunlop Street East Barrie, Simcoe, Ontario - L4m 1b2 Canada	View	Registered
ON3043689	The Corporation of the City of Barrie	Fire Station #5, 361 King St Barrie, Simcoe, Ontario - L4n 6b5 Canada	View	Registered
ON6655361	THE CORPORATION OF THE CITY OF BARRIE	630 Line 7 Oro, Simcoe, Ontario - L0l 2e0 Canada	View	Registered
ON3496077	The Corporation of the City of Barrie	168 Johnson St Barrie, Simcoe, Ontario - L4m 6b2 Canada	View	Registered
ON6588921	The Corporation of the City of Barrie	Surface Water Treatment Plant, 20 Royal Parkside Dr Barrie, Simcoe, Ontario - L4m 0c4 Canada	View	Registered
ON3516495	The Corporation of the City of Barrie	60 Worsley St Barrie, Simcoe, Ontario - L4m 4t5 Canada	View	Registered
ON9618374	THE CORPORATION OF THE CITY OF BARRIE	City Hall, 400, 70 Collier Street Barrie, Simcoe, Ontario - L4m 4t5 Canada	View	Registered

You may also download the entire HWIN Registered Generator list. The list is in an XML file in a zip format, and is approximately 1.5 MB in size. The download will take several minutes. To avoid heavy loads on HWIN during registration,

THE CORPORATION OF THE CITY OF BARRIE

Active Waste class listing

Waste Class	Waste class name	Primary Characteristic	Physical State	Specific Gravity
112 C	ACID WASTE - HEAVY METALS	CORROSIVE	Liquid	1
113 C	ACID WASTE - OTHER METALS	CORROSIVE	Liquid	1.41
145 I	PAINT/PIGMENT/COATING RESIDUES	IGNITABLE	Solid	
146 T	OTHER SPECIFIED INORGANICS	LEACHATE TOXIC	Solid	0
148 C	INORGANIC LABORATORY CHEMICALS	CORROSIVE	Liquid	1
213 I	PETROLEUM DISTILLATES	IGNITABLE	Liquid	1
232 L	POLYMERIC RESINS	LIQUID INDUSTRIAL WASTE	Liquid	1
241 L	HALOGENATED SOLVENTS	LIQUID INDUSTRIAL WASTE	Liquid	1
252 L	WASTE OILS & LUBRICANTS	LIQUID INDUSTRIAL WASTE	Liquid	1
262 L	DETERGENTS/SOAPS	LIQUID INDUSTRIAL WASTE	Liquid	1
263 I	ORGANIC LABORATORY CHEMICALS	IGNITABLE	Liquid	1
263 L	ORGANIC LABORATORY CHEMICALS	LIQUID INDUSTRIAL WASTE	Liquid	1
331 I	WASTE COMPRESSED GASES	IGNITABLE	Gas	0

THE CORPORATION OF THE CITY OF BARRIE

Active Waste class listing

Waste Class	Waste class name	Primary Characteristic	Physical State	Specific Gravity
241 L	HALOGENATED SOLVENTS LIQUID INDUSTRIAL WASTE		Liquid	1

THE CORPORATION OF THE CITY OF BARRIE

Active Waste class listing

Waste Class	Waste class name	Primary Characteristic	Physical State	Specific Gravity
149 L	LANDFILL LEACHATES	LIQUID INDUSTRIAL WASTE	Liquid	1

hwin

Registered HWIN Generators



FAQ's by Keyword Ask

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You may view an individual generator's status by typing in the generator's number below and clicking the search button. This search will provide you with the current status of the generator from the HWIN database

Generator number

Company name oil-tech automotive

Submit Reset

Generator Number	Generator Name	Address	Waste Class	Status
ON7159977	Oil-Tech Automotive Rust Control Centre Inc.	9 Gowan St. Barrie, Simcoe, Ontario - L4w 2n9 Canada	View	Registered

You may also download the entire HWIN Registered Generator list. The list is in an XML file in a zip format, and is approximately 1.5 MB in size. The download will take several minutes. To avoid heavy loads on HWIN during registration, the Ministry will only allow downloads of the entire HWIN Registered Generator list **between the hours of 6:00 pm EST and 6:00 am EST.** While the HWIN Registered Generator list is a dynamic list, the version of the list available for download will be a static list. The list will be updated and posted to the HWIN site two times a day - at 4:00 am and 6:00 pm. (Note: the XML download button will only be displayed below for use from 6:00pm to 6:00am).

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Oil-Tech Automotive Rust Control Centre Inc.

Active Waste class listing

Waste Class	Waste class name	Primary Characteristic	Physical State	Specific Gravity
251 L	OIL SKIMMINGS & SLUDGES LIQUID INDUSTRIAL WASTE		Liquid	1

Imperial Oil

Active Waste class listing

Waste Class	Waste class name	Primary Characteristic	Physical State	Specific Gravity
221 I	LIGHT FUELS	IGNITABLE	Liquid	0.8
221 L	LIGHT FUELS	LIQUID INDUSTRIAL WASTE	Liquid	0.8
251 L	OIL SKIMMINGS & SLUDGES	LIQUID INDUSTRIAL WASTE	Liquid	0.8
252 L	WASTE OILS & LUBRICANTS	LIQUID INDUSTRIAL WASTE	Liquid	0.8

hwin

Registered HWIN Generators



FAQ's by Keyword Ask

The HWIN Registered Generator List is a list of all generators registered in HWIN. For each generator, waste classes registered by the generator are displayed. Please note that HWIN will not let a generator enter into a manifest transaction for a specific waste class unless that generator has registered that waste class in HWIN. A generator may, however, add a new waste class at any time (on My HWIN page, click Administration, then Waste Information, then follow the simple instructions).

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You may view an individual generator's status by typing in the generator's number below and clicking the search button. This search will provide you with the current status of the generator from the HWIN database

Generator number

Company name labar sales

Submit Reset

Generator Number	Generator Name	Address	Waste Class	Status
ON9741444	Labar Sales & Distribution Ltd.	94 Tiffin St. Barrie, Simcoe, Ontario - L4n 2n1 Canada	View	Registered

You may also download the entire HWIN Registered Generator list. The list is in an XML file in a zip format, and is approximately 1.5 MB in size. The download will take several minutes. To avoid heavy loads on HWIN during registration, the Ministry will only allow downloads of the entire HWIN Registered Generator list **between the hours of 6:00 pm EST and 6:00 am EST.** While the HWIN Registered Generator list is a dynamic list, the version of the list available for download will be a static list. The list will be updated and posted to the HWIN site two times a day - at 4:00 am and 6:00 pm. (Note: the XML download button will only be displayed below for use from 6:00pm to 6:00am).

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Labar Sales & Distribution Ltd.

Active Waste class listing

Waste Class	Waste class name	Primary Characteristic	Physical State	Specific Gravity
145 I	PAINT/PIGMENT/COATING RESIDUES	IGNITABLE	Liquid	1
145 L	PAINT/PIGMENT/COATING RESIDUES	LIQUID INDUSTRIAL WASTE	Liquid	1.1
252 L	WASTE OILS & LUBRICANTS	LIQUID INDUSTRIAL WASTE	Liquid	0.9
331 I	WASTE COMPRESSED GASES	IGNITABLE	Gas	

Appendix H:
Phase One Questionnaire

PHASE ONE ESA QUESTIONNAIRE

G2S Environmental Consulting Inc.
3370 South Service Road, Suite 107, Burlington, ON L7N 3M6
P 905.331.3735 F 905.642.5999
G2Senvironmental.com

Site Address: 41 + 43 LESSA RD. BARRIE	
Project #: G2S18006A	
Owner: BARRIE DRIVE-A-CAR (1979) LTD	Occupant: —
Interviewee: GEORGE DANGERFIELD	Relation to Site: OWNER
Property and Building Description and Size:	

1. Has the property or an adjacent property(s) currently or previously been used for an industrial or commercial use? If yes, please specify activities and time frames.

Interviewee			Observed During Site Visit	
(Yes)	No	Unknown	(Yes)	No

NOTES: SITE WAS ORIGINALLY HOME TO COOKE CARTAGE + BUILDINGS WERE USED FOR STORAGE OF HOUSEHOLD GOODS. NEXT USE WAS BARRIE DRIVE-A-CAR + THE SITE WAS USED FOR HERTZ FRANCHISE. NO AUTOMOTIVE MAINTENANCE WAS DONE EXCEPT WASHING OF VEHICLES

2. Are there or have there been in the past, any damaged or discarded automotive or industrial batteries, pesticides, paints, or other chemicals in the aggregate, stored on or used at the property or on any of the adjacent properties? If yes, please specify location.

Interviewee			Observed During Site Visit	
Yes	(No)	Unknown	Yes	(No)

NOTES:

3. Are there currently, or have there been in the past, any industrial containers of chemicals located on the property or on any of the adjacent properties? If yes, please specify location.

Interviewee			Observed During Site Visit	
Yes	(No)	Unknown	Yes	(No)

NOTES:

4. Are you aware or do you have any prior knowledge that fill material has been brought onto the property that originated from an unknown origin or contaminated site? If yes, please specify location.

Interviewee	Observed During Site Visit
Yes (No) Unknown	Yes (No)

NOTES:

1. Has the property or any of the adjacent properties been used for the any of the following industries/activities/storage/related activities, either currently or historically (please mark where applicable):

AREA OF CONCERN	YES	NO	COMMENT
Chemicals		✓	
Electrical Equipment		✓	
Metal Smelting and/or Processing		✓	
Mining		✓	
Milling		✓	
Petroleum and Natural Gas Drilling/Production/Processing/Retailing and/or Distribution (Including Gasoline Station)		✓	
Transportation		✓	
Junkyard, waste disposal/landfill/waste treatment and/or Processing, Recycling		✓	
Wood, Pulp and Paper Products		✓	
Appliance Equipment and/or Engine Repair/Reconditioning/Salvage		✓	
Ash Deposit from boilers and/or other Thermal Facilities		✓	
Asphalt Tar Manufacturing		✓	
Coal Gasification		✓	
Medical/Chemical/Radiological and/or Biological Labs		✓	
Rifle and/or Pistol Firing Ranges		✓	
Road Salt Storage Facilities		✓	
Dry Cleaning Facilities		✓	
Commercial Printing Facilities and/or Photo Developing Laboratory		✓	
Site which have been or are likely to have been contaminated by substances migrating from other properties.		✓	

6. Are there currently, or have there been in the past, any pits, ponds, or lagoons located on the property in connection with waste treatment or waste disposal? If yes, please specify location.

Interviewee	Observed During Site Visit
Yes (No) Unknown	Yes (No)

NOTES:

7. Is there currently any, or has there been in the past, stained soil on the property? If yes, please specify location.

Interviewee	Observed During Site Visit
Yes (No) Unknown	Yes (No)

NOTES:

8. Are there currently, or have there been in the past, any registered or unregistered storage tanks (above or underground) located on the property? If yes, please specify location.

Interviewee	Observed During Site Visit
(Yes) No Unknown	Yes (No)

UNDERGROUND GAS TANK USED FOR FILLING VEHICLES

NOTES:

9. Are there currently, or have there been in the past, any vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground on the property or adjacent to any structure located on the property? If yes, please specify location.

Interviewee	Observed During Site Visit
(Yes) No Unknown	(Yes) No

NOTES: NEXT TO WHERE OLD HOUSE WAS LOCATED

10. Is there currently, or have there been in the past, evidence of leaks, spills or staining by substances other than water, or foul odours, associated with any flooring, drains, walls, ceilings, or exposed grounds on the property? If yes, please specify location.

Interviewee	Observed During Site Visit
Yes (No) Unknown	Yes (No)

NOTES:

11. If the property is served by a private well or non-public water system, is there evidence or do you have prior knowledge that contaminants have been identified in the well or system that exceed guidelines applicable to the water system? If yes, please specify location.

Interviewee	Observed During Site Visit
Yes (No) Unknown (N/A)	Yes (No)

NOTES:

12. If the property served by a private well or non-public water system, have there been in the past, any well designated as contaminated by any government environmental/health agency? If yes, please specify location.

Interviewee	Observed During Site Visit
Yes No Unknown (N/A)	Yes (No)

NOTES:

13. Are you aware of any environmental liens or governmental notification relating to past or recurrent violations of environmental laws with respect to the property or any facility located on the property? If yes, please specify.

Interviewee	Observed During Site Visit
Yes (No) Unknown	Yes (No)

NOTES:

14. Are you aware of current or past existence of hazardous substances or petroleum products with respect to the property or any facility located on the property? If yes, please specify.

Interviewee	Observed During Site Visit
(Yes) No Unknown	Yes (No)

NOTES: AS NOTED IN #8 - GAS TANK - REMOVED IN 1986.

15. Are you aware of any current or past existence of environmental violations with respect to the property or any facility located on the property? If yes, please specify.

Interviewee	Observed During Site Visit
Yes (No) Unknown	Yes (No)

NOTES:

16. Are you aware of any environmental site assessment of the property or facility that indicated the presence of hazardous substances or petroleum products on, or contamination of, the property or recommended further assessment of the property? If yes, please specify.

Interviewee	Observed During Site Visit
Yes (No) Unknown	Yes (No)

NOTES:

17. Are you aware of any past, threatened, or pending lawsuits or administrative proceedings concerning a release or threatened release of any hazardous substance or petroleum products involving the property by any owner or occupant of the property? If yes, please specify.

Interviewee	Observed During Site Visit
Yes (No) Unknown	Yes (No)

NOTES:

18. Does the property discharge wastewater (not including sanitary waste or storm water) onto or adjacent to the property and/or into a storm water system? If yes, please specify.

Interviewee			Observed During Site Visit	
Yes	No	Unknown	Yes	No

NOTES:

19. Are you aware of any hazardous substances or petroleum products, unidentified waste materials, tires, automotive or industrial batteries, or any other waste materials that have been dumped above grade, buried and/or burned on the property? If yes, please specify.

Interviewee			Observed During Site Visit	
Yes	No	Unknown	Yes	No

NOTES:

20. Is there, or has there been in the past, a transformer, capacitor, or any hydraulic equipment for which there are any records indicating the presence of PCBs? If yes, please specify.

Interviewee			Observed During Site Visit	
Yes	No	Unknown	Yes	No

NOTES:

21. Are there currently any site operating records available for the property? (please provide documents if obtainable):

SITE OPERATING RECORD	YES	NO	N/A
Regulatory Permits and Records		✓	
Material Safety Data Sheets		✓	
Underground Utility Drawings		✓	
Chemical Inventory and Storage		✓	
Storage Tanks		✓	
Environmental Monitoring Data		✓	
Waste Management Records		✓	
Process, Production and Maintenance Documents		✓	
Spills and Discharges		✓	
Emergency Response and Contingency Plans		✓	
Environmental Audit Reports		✓	
Facility Site Plans		✓	

Date: Feb 5/18

Signature of Assessor:

Name of Assessor: Jessica Boelhouwer

Signature of Interviewee:

Name of Interviewee: GEORGE DANGERFIELD

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G2Senvironmental.com

DRAFT
Phase Two Environmental Site Assessment



41 & 43 Essa Road, Barrie, Ontario
G2S18006B

Barrie Drive-A-Car (1979) Limited
11 Shoreview Drive
Barrie, Ontario
L4M 1G2

April 3, 2018

Executive Summary

G2S Environmental Consulting Inc. (G2S) was retained by Barrie Drive-A-Car (1979) Limited to complete a Phase Two Environmental Site Assessment (ESA) for the property located at 41 & 43 Essa Road in Barrie, Ontario, hereinafter referred to as the 'Site'. Authorization to proceed with the Phase Two ESA was provided by Mr. George Dangerfield of Barrie Drive-A-Car (1979) Limited.

The Site is currently developed with a vacant, one-storey commercial building. According to Site Representative and owner of the Site, Mr. Dangerfield, the building has been vacant for approximately two years. Previous occupants have included banquet and catering services, grocery stores, and most recently, Starlight Lounge. According to city directories, Reynold's Supertest Service Station and Reynold's Collision Repair occupied 41 Essa Road in 1962. 43 Essa Road, currently developed as an asphalt lot, was last occupied by Barrie Drive-A-Car, Hertz Rent-A-Car, and a residential building from 1976-1982. The Site is approximately 0.57 hectares (1.41 acres) in size, and is serviced with natural gas, hydro, and municipal water and sewer. Entrance to the Site is accessed via Essa Road. The Site location is illustrated on Drawing 1 in Appendix A.

For evaluation of the soil and groundwater quality, G2S compared the analytical results to the Ministry of Environment and Climate Change (MOECC) Table 2 Site Condition Standards (SCS) for coarse textured soil and residential property use. The SCS are defined in "Soil, Groundwater and Sediment Standards for use under Part XV.1 of the Environmental Protection Act", Ministry of the Environment and Climate Change (MOECC), April 15, 2011.

The investigation included the advancement of twelve boreholes, eleven of which were completed as groundwater monitoring wells. The results of the Phase Two ESA lead to the following findings:

1. Native material beneath site generally consists of silty sand.

2. Groundwater was found in the new and previously installed monitoring wells at depths between 2.28 and 3.52 m below ground surface.

3. Concentrations of petroleum hydrocarbons (PHCs) including benzene, toluene, ethylbenzene, and xylenes (BTEX) and polycyclic aromatic hydrocarbons (PAHs) were above the MOECC Table 2 SCS in soil samples from BH102 SS4, BH103 SS6, and BH207 SS4.

4. Concentrations of PHCs (including BTEX), and PAHs were above the MOECC Table 2 SCS in groundwater samples from MW102, MW103, and MW207.

5. The concentration of hexane was above the MOECC Table 2 SCS in the groundwater from MW103.

6. The concentrations of volatile organic compounds (VOCs) and metals and inorganics were below the MOECC Table 2 SCS for residential property use and coarse-grained soil in the analyzed soil samples.

7. The concentrations of metals and inorganics were below the MOECC Table 2 SCS for residential property use and coarse-grained soil in the analyzed groundwater samples.

Based on the results of the Phase Two ESA, the property does not meet the MOECC Table 2 SCS for Residential/Parkland/Institutional Property Use and coarse textured soil.

To file for a Record of Site Condition (RSC), remediation or risk management measures are required to meet the requirements of O.Reg. 153/04.

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Drawing 2: Areas of Potential Environmental Concern
Drawing 3: Borehole and Monitoring Well Plan

1. Introduction

G2S Environmental Consulting Inc. (G2S) was retained by Barrie Drive-A-Car (1979) Limited to complete a Phase Two Environmental Site Assessment (ESA) for the property located at 41 & 43 Essa Road in Barrie, Ontario, hereinafter referred to as the 'Site'. Authorization to proceed with the Phase Two ESA was provided by Mr. George Dangerfield of Barrie Drive-A-Car (1979) Limited.

1.1 Site Description

The Site is currently developed with a vacant, one-storey commercial building. According to Site Representative and owner of the Site, Mr. Dangerfield, the building has been vacant for approximately two years. Previous occupants have included banquet and catering services, grocery stores, and most recently, Starlight Lounge. According to city directories, Reynold's Supertest Service Station and Reynold's Collision Repair occupied 41 Essa Road in 1962. 43 Essa Road, currently developed as an asphalt lot, was last occupied by Barrie Drive-A-Car, Hertz Rent-A-Car, and a residential building from 1976-1982. The Site is approximately 0.57 hectares (1.41 acres) in size, and is serviced with natural gas, hydro, and municipal water and sewer. Entrance to the Site is accessed via Essa Road. The Site location is illustrated on Drawing 1 in Appendix A.

1.2 Property Ownership

The current owner of the property is:

Barrie Drive-A-Car (1979) Limited
11 Shoreview Drive
Barrie, Ontario, L4M 1G2
Contact: George Dangerfield
Site Owner
Phone: 705-984-8966
Contact Email: geo.dangerfield@gmail.com

1.3 Current and Proposed Future Land Uses

The Site is currently being used for commercial land use, with a proposed change in land use to residential.

1.4 Applicable Site Condition Standards

The assessment criteria applicable to a given site in Ontario are provided in the Ministry of the Environment and Climate Change (MOECC) document entitled "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", dated April 15, 2011.

Standards are provided in Tables 1 to 9 in the document. These standards are based on site sensitivity, groundwater use, property use, soil type and restoration depth.

For this investigation, G2S has selected the Table 2 SCS for Residential/Parkland/Institutional Property Use with coarse textured soil. The selection of this category is based on the following factors:

- There is no intention to carry out stratified restoration at the Site.
- Based on field observations and grain size analysis, the predominant soil type on the Site is coarse grained. Grain size analysis results are included in the laboratory Certificates of Analysis in Appendix D.
- The property use of the Site is commercial, and proposed use of the Site is residential.
    - The MOECC Table 1 SCS are applicable if pH values for surface soil (<1.5 m) are less than 5 or greater than 9 and pH values for subsurface soil (>1.5 m) are less than 5 or greater than 11. Surface soil samples BH101 SS1 and BH103 SS2, and subsurface soil samples BH101 SS6 an BH103 SS6, had pH values of 7.50, 8.06, 7.46, and 7.92, respectively. Therefore, based on the pH values, the Table 1 SCS are not applicable for the Site. Laboratory Certificates of Analysis are included in Appendix C.
- The potable groundwater condition does apply to the Site based on information provided by The City of Barrie that the Site is located within:
    a) Well Head Protection Area B with a 2-year Time of Travel;
    b) Significant Groundwater Recharge Area; and,
    c) Highly Vulnerable Aquifer.
- Based on the findings from the Phase Two ESA, the following can be confirmed with respect to Sections 41 and 43.1 of O.Reg. 153/04:
    - The Site is not a shallow soil property and the Site is not within 30 m of a surface water body, as defined in Section 43.1 of O.Reg. 153/04.
    - The Site is not an environmentally sensitive site as defined in Section 41 of O.Reg. 153/04.

2 Background Information

2.1 Physical Setting

The irregular shaped Site is located on the west side of Essa Road, approximately 125 m southwest of the intersection with Tiffin Street and approximately 280 m northeast of the intersection of Essa Road and Innisfil Street.

Topographic maps indicate that the Site is at approximately 230 m above sea level, with surface elevations decreasing in a north-easterly direction towards Lake Simcoe. The expected direction of groundwater flow in the area of the Site is northeast towards Lake Simcoe, therefore, up-gradient properties located south, west or southwest of the Site were judged to have a higher environmental risk.

The Quaternary Geology of the East Half of the Barrie Area Map (Barnett, P.J. 1992) identify the Site lying within the Pleistocene area, characterized as glaciolacustrine beach and bar sediments consisting of gravel, sandy gravel, and gravelly sand. The Paleozoic Geology of Southern Ontario Map (Ontario Division of Mines 1972) identifies the Site and Study Area within the Middle Ordovician Simcoe Group, Verulam Formation, overlain by limestone. The Soil Map of Simcoe County, South Sheet, Soil Survey Report No. 29 of the Soil Survey (Ontario Institute of Pedology, 1989), indicated that the soil in the Site area is dominantly grey, calcareous outwash sand, stonefree to moderately stony. Based on findings from the Phase Two ESA, the native material was predominantly coarse textured soils consisting of silty sand materials.

Regional groundwater flow is expected to be to the northeast towards Lake Simcoe, located approximately 360 m northeast of the Site. Surface water from the Site is expected to run into catch basins located in the asphalt lot, or to infiltrate through unpaved surfaces of the Site.

2.2 Past Investigations

G2S completed a Phase One ESA for the Site, entitled:

"Phase One Environmental Site Assessment, 41 & 43 Essa Road, Barrie, Ontario," dated February 6, 2018.

The Phase One ESA identified several Areas of Potential Environmental Concern (APECs) on the property. The potential environmental risks to the property include:

APEC 1: The historical use of the Site as a service station, as an autobody shop, and by Allandale Lumber & Fuel Co Ltd. Fill and vent pipes were observed on the west exterior of the building during the Site visit.

APEC 2: The historical use of the property located north adjacent (35 Essa Road) as a dry cleaner and as an autobody shop. A vent pipe was observed on the west side of the building during the Site visit.

APEC 3: The historical presence of underground storage tanks (USTs) and aboveground storage tanks (ASTs) on the southwest adjacent property (259 & 273 Innisfil Street). An auto servicing garage is currently operating on the property.

APEC 4: The historical use of the property located approximately 20 m south (49 Essa Road) by Allandale Lumber, Fuel & Construction Co. Ltd., including historical presence of ASTs.

APEC 5: The historical use of the properties located approximately 20 m east (34 and 40 Essa Road) for oil storage, including historical presence of a UST.

APEC 6: The historical use of the property located approximately 20 m east (48 Essa Road) as an autobody shop, including historical presence of a UST.

Further investigation was recommended to investigate the potential environmental impacts from the identified APECs, as shown on Drawing 2 in Appendix A.

3 Scope of the Investigation

3.1 Overview of Site Investigation

The objective of the Phase Two ESA is to document the current environmental conditions of the property. The Phase Two ESA was conducted in general accordance with O.Reg 153/04.

The field work for the investigation took place on February 8, 9, and 13, 2018, and March 19, 20, and 23, 2018.

Our scope of work for the Phase Two ESA included the following:

1. Review of the previous environmental report completed for the property;

2. The location of underground utilities by both public and private utility locators;

3. The advancement of twelve boreholes on-Site, eleven of which were completed as groundwater monitoring wells;

4. Continuous collection of representative soil samples throughout the drilling processes from the boreholes, and submission of samples to laboratory for petroleum hydrocarbons (PHCs) including benzene, toluene, ethylbenzene, and xylenes (BTEX), volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), metals, pH, and grain size analysis;

5. Development of the newly installed monitoring wells;

6. Completion of an elevation survey of Site monitoring wells. Measurement of groundwater levels at all monitoring locations for the purpose of determining groundwater flow direction;

7. The collection groundwater samples from the previously and newly installed monitoring wells and submission of samples to the laboratory for analysis of PHCs including BTEX, VOCs, metals, and PAHs; and,

8. Preparation of a Phase Two ESA Report.

3.2 Media Investigated

The Phase Two ESA included the sampling of soil and groundwater. Sampling was completed primarily for the purpose of determining if the identified APECs during the Phase One ESA impacted the soil or groundwater on for the property.

3.3 Phase One Conceptual Site Model

The irregular shaped Site is located on the west side of Essa Road, approximately 125 m southwest of the intersection with Tiffin Street and approximately 280 m northeast of the intersection of Essa Road and Innisfil Street (as shown on Drawing 1). The Site is located in a setting consisting generally of commercial land use. Residential areas are located southeast, north, and northwest of the Site. Kempenfelt Bay of Lake Simcoe is located approximately 360 m northeast, and a CNR railway line traverses southwest to northeast outside the north property boundary of the Site.

The Site is currently developed with a vacant, one-storey commercial building. According to Site Representative and owner of the Site, Mr. Dangerfield, the building has been vacant for approximately two years. Previous occupants have included banquet and catering services, grocery stores, and most recently, Starlight Lounge. According to city directories, Reynold's Supertest Service Station and Reynold's Collision Repair occupied 41 Essa Road in 1962. 43 Essa Road, currently developed as an asphalt lot, was last occupied by Barrie Drive-A-Car, Hertz Rent-A-Car, and a residential building from 1976-1982. The Site is approximately 0.57 hectares (1.41 acres) in size, and is serviced with natural gas, hydro, and municipal water and sewer. Entrance to the Site is via Essa Road.

After review of current and historical use of the Site, PCAs were identified on the property and include commercial autobody shop; and gasoline and associated products storage in fixed tanks. Contaminants of concern from on-Site activities include PHCs including BTEX, VOCs, metals, and PAHs.

Historical review of the surrounding properties within a 250 m radius of the Site identified several PCAs and APECs. Medium to high risk activities associated with the properties located to the north, south, southwest, and east of the Site include operation of dry cleaning equipment (where chemicals are used), commercial autobody shops, and gasoline and associated products storage in fixed tanks. Contaminants of concern from off-Site sources include PHCs including BTEX, VOCs, metals, and PAHs. Contaminants may potentially migrate to the Site through groundwater flow.

Topographic maps indicate that the Site is at approximately 230 m above sea level, with surface elevations decreasing in a north-easterly direction towards Lake Simcoe. The expected direction of groundwater flow in the area of the Site is northeast towards Lake Simcoe, therefore, up-gradient properties located south, west or southwest of the Site were judged to have a higher environmental risk.

The Quaternary Geology of the East Half of the Barrie Area Map (Barnett, P.J. 1992) identify the Site lying within the Pleistocene area, characterized as glaciolacustrine beach and bar sediments consisting of gravel, sandy gravel, and gravelly sand. The Paleozoic Geology of Southern Ontario Map (Ontario Division of Mines 1972) identifies the Site and Study Area within the Middle Ordovician Simcoe Group, Verulam Formation, overlain by limestone. The Soil Map of Simcoe County, South Sheet, Soil Survey Report No. 29 of the Soil Survey (Ontario Institute of Pedology, 1989), indicated that the soil in the Site area is dominantly grey, calcareous outwash sand, stonefree to moderately stony. Based on findings from the Phase Two ESA, the native material was predominantly coarse textured soils consisting of silty sand materials.

Utilities including gas, hydro, water, and sewer currently service the building located on-Site. Utility records or drawings were not available at the time of the Phase One ESA.

The Phase One ESA identified APECs related to both on-Site and off-Site PCAs that were judged to represent a medium to high environmental risk to the Site. Further environmental investigation is recommended.

3.4 Deviations from Sampling and Analysis Plan

No deviations from the sampling and analysis plan occurred during this investigation.

3.5 Impediments

No impediments were encountered during this investigation.

4. Investigation Method

4.1 General

The locations of underground utilities including, cable, telephone, hydro, gas, water and sewer were identified and marked by public locating companies as well as a private utility locating contractor.

4.2 Drilling

The drilling conducted by G2S for this Phase Two ESA was conducted on February 8 and 9, 2018, and March 19 and 20, 2018. Twelve boreholes (BH101 to BH105, and BH201 to BH207) were advanced on the Site by Profile Drilling Inc. (Profile), a licensed well contractor, under the supervision of G2S staff. Eleven of the boreholes, BH101 to BH103, BH105, and BH201 to BH207, were completed as groundwater monitoring wells. A track mounted Mobile B37X drill rig was used to advance, collect soil samples, and install monitoring wells in BH101 to BH105, and a track mounted PowerProbe 9700 drill rig was used to advance, collect soil samples, and install monitoring wells in BH201 to BH207. The boreholes were sampled to depths up to 6.9 m bgs.

The borehole, monitoring well, and soil sampling locations are shown on the Borehole/Monitoring Well Location Plan, Drawing 3, in Appendix A.

4.3 Soil Sampling

G2S staff continually monitored the drilling activities to log the recovered soil cores, record the depth of soil sample collection and total depth of the boreholes. Field observations recorded on the borehole logs are included in Appendix B. Soil samples were collected using split spoon samplers advanced following standard penetration test methods, dedicated nitrile gloves (one pair per sample), lab-supplied jars, methanol vials and Terra Core samplers (one per sample) for VOCs, and clean, ice-packed coolers to store and transport the samples under Chain of Custody (COC) protocols.

4.4 Field Screening Measurements

Organic vapour readings were recorded using a RKI Eagle gas detector, equipped with a catalytic combustible gas (LEL) sensor, calibrated to hexane. Accuracy of the gas monitor varies with the type of gas being measured.

The organic vapour readings were measured by inserting the instrument's probe into the headspace of the plastic bag and manipulating the soil sample by hand. Organic vapour readings provide a general indication of the relative concentration of organic vapours encountered in the subsurface during drilling and are used in the screening and selection of soil samples for chemical analysis. The vapour readings, in parts per million (ppm), are recorded on the borehole logs presented in Appendix B. Each soil sample was examined for visual and olfactory evidence of impacts and for textural details at the time of sampling.

4.5 Groundwater Monitoring Well Installation

Groundwater monitoring wells were installed in BH101 to BH103, BH105, and BH201 to BH207, identified as MW101 to MW103, MW105, and MW201 to MW207, respectively. The monitoring wells were installed in general accordance with the Ontario Water Resources Act – R.R.O. 1990, Regulation 903 – Amended to O. Reg. 128/03 and were installed by a licensed well contractor (Profile).

Monitoring wells MW101 to MW103, MW105, and MW201 to MW206 were constructed of 50-millimetre (mm) diameter, number 10 slot Schedule 40 PVC screen and PVC riser pipe, completed with 3 m long screens, and MW207 was constructed with 30 millimetre (mm) diameter, number 10 slot Schedule 40 PVC screen and PVC riser pipe. The monitoring wells were sealed at the base with a PVC end cap and an appropriate length of riser pipe extending to just below the top of the monument or flush-mounted protective steel casings. All pipe connections were threaded flush joints with no lubricants or adhesives used in the construction of the monitoring well. Details of the completion of the monitoring wells are provided on the borehole logs in Appendix B. The annular space around the well screen and to an approximate height of 0.3 m above the top of the screen was backfilled with silica sand. The sand pack was extended above the screen to allow for compaction of the sand pack and expansion of the overlying well seal. A granular bentonite ('Hole Plug') seal was placed in the borehole annulus from the top of the sand pack to approximately 0.15 m below the ground surface. The monitoring wells were completed with flush-mounted protective steel casings or monument protective steel casings (above ground) cemented in place. A summary of the monitoring well installation details can be found in Table 4.5 below.

Table 4.5: Groundwater Monitoring Well Installation Details

Monitoring Well	Installation Date	Ground/Surface Elevation (m)	Top of Screen (m bgs)	Bottom of Screen (m bgs)
MW101	February 8, 2018	100.76	97.92	94.92
MW102	February 8, 2018	99.91	97.11	94.11
MW103	February 9, 2018	100.18	97.23	94.23
MW105	February 9, 2018	100.28	97.21	94.21
MW201	March 19, 2018	99.87	92.27	89.27
MW202	March 19, 2018	99.50	96.67	93.67
MW203	March 19, 2018	99.68	96.76	93.76
MW204	March 19, 2018	100.19	97.05	94.05

Monitoring Well	Installation Date	Ground/Surface Elevation (m)	Top of Screen (m bgs)	Bottom of Screen (m bgs)
MW205	March 20, 2018	100.40	97.70	94.70
MW206	March 20, 2018	100.11	97.12	94.12
MW207	March 20, 2018	100.28	98.27	96.77

bgs - below ground surface

The Site owner is considered to be the well owner of the monitoring wells installed by Profile and supervised by G2S ("well owner" Section 1.0, Regulation 903). When the monitoring wells on-Site are no longer required, it is the owner's responsibility to arrange for abandonment in accordance with Ontario Water Resources Act–R.R.O. 1990, Regulation 903 – Amended to O. Reg. 128/03.

4.6 Groundwater Field Measurements of Water Quality Parameters

Water quality parameters including pH, conductivity and temperature were measured using a Hanna Instruments HI 98129 to ensure that the water quality parameters had stabilized after the removal of three casing volumes.

The field parameters that were measured consisted of temperature, pH and conductivity. Stabilization is reached after three consecutive readings for all parameters (temperature +/- 0.1 ^{o}C, pH +/- 0.2 units and conductivity +/- 3%).

4.7 Groundwater Sampling

G2S attended the Site on February 13 and March 23, 2018 to record the groundwater level in the monitoring wells, develop and purge the monitoring wells, and collect groundwater samples from the wells for chemical analysis.

An electronic water level metre was used to record the depth of groundwater in the monitoring wells. The groundwater level measurements are summarized in Table 5.2.

The monitoring wells were sampled using low-flow sampling by removing a minimum of three casing volumes and until field parameter measurements had stabilized. The groundwater was visually inspected for impacts during purging and sample collection.

The electronic water level metre was rinsed with a mild detergent, distilled water, and methanol between monitoring wells to prevent cross-contamination. A dedicated bailer and waterra tubing were installed in each monitoring well for developing, purging and sample collection.

A sheen and a petroleum odour were observed in MW102, MW103, and MW207 during groundwater sampling. No evidence of sheen or free product was observed in the remainder of the monitoring wells.

4.8 Analytical Testing

Soil and groundwater samples were collected into new, laboratory-supplied sample jars with appropriate preservatives as required. A clean, ice-packed cooler was used to store and transport the groundwater samples to ALS Environmental (ALS) in Mississauga, Ontario, under Chain of Custody (COC) protocols.

4.9 Residue Management Procedures

Soil cuttings generated during drilling were stored on-Site in sealed steel drums. Purged groundwater from the monitoring wells was placed into a sealed container and left on-Site.

4.10 Elevation Surveying

Monitoring wells were surveyed for elevation relative to a geodetic bench mark, in this case the catch basin located in the centre of the asphalt parking lot located on-Site (assumed elevation of 100 m).

4.11 Quality Assurance/Quality Control Measures

Disposable nitrile gloves (one per sample) were used during sample collection. Sample cores for analysis of volatiles were collected using a 5-gram Terra Core sampler. The soil cores were immediately placed into a Methanol Vial (pre-filled and weighed with 10mL Purge & Trap Grade Methanol).

New laboratory-supplied glass jars with Teflon-lined lids were filled with a portion of each soil sample. The jars and vials were then sealed and placed in a cooler with ice packs for storage and transportation. The remaining soil sample was placed in a sealable plastic bag and allowed to reach ambient temperature prior to field screening for the presence of organic vapours.

ALS supplied all the soil and groundwater jars/bottles with preservatives when required.

The following field quality control measures were performed, as outlined in Part II, Schedule E subsection 3 (3) of O.Reg 153/04.

1. Sampling tools, when re-used were cleaned using the following 3 stage procedure.

    a) Remove adhering soil particles by scrubbing with a mild detergent.
    b) Rinsed with distilled water.
    c) Rinsed with methanol and allowed to air dry.

2. Field duplicate samples were collected and submitted blind to the analytical laboratory at a frequency of approximately 10% (i.e. one in ten samples).

3. Trip Blank and Trip Spike samples provided by the laboratory were submitted with groundwater VOC analysis.

4. The RKI Eagle 2 was supplied and calibrated by Pine Environmental in Mississauga, Ontario.

5. Review and Evaluation

5.1 Geology

Borehole logs presented in Appendix B provide a detailed outline of the soil profiles encountered in each borehole. The boundaries indicated on the borehole logs are intended to reflect transition zones for the purpose of environmental assessment and should not be interpreted as exact planes of geological change.

A description of the soil stratigraphy encountered on the Site, in order of depth, is summarized in the sections below.

Concrete/Topsoil/Asphalt

Boreholes BH101 and BH207 were advanced through approximately 10 cm of concrete, boreholes BH102, BH105, and BH202 were advanced through approximately 5 to 10 cm of topsoil, and boreholes BH103, BH104, BH201, BH202 to BH206 were advanced through approximately 5 to 10 cm of asphalt.

Fill Material

Sand fill with trace silt was encountered in BH101 and BH207 to depths of 0.6 and 0.75 m bgs, respectively. The sand fill materials were fine textured, dry to moist, and brown/black in colour. Sand and gravel fill was encountered in boreholes BH102 to BH105 and BH201 to BH206 to depths between 0.3 and 0.9 m bgs. The sand and gravel fill materials were dry to moist, coarse to fine, compact, and brown or black/brown in colour. Trace organics were observed in the fill materials in BH202 and BH203.

Native Material

Silty sand was encountered beneath the fill materials in each of the boreholes. The silty sand was fine to medium fine textured and compact to loose. Increased greyness and moisture was encountered with depth in the boreholes between approximate depths of 2.25 and 4.5 m bgs. A petroleum odour was observed in BH102 between depths of 1.5 and 6.6 m bgs, in BH103 between depths of 1.5 and 6.6 m bgs, in BH105 between depths of 2.25 and 4.35 m bgs, and in BH207 between depths of 2.4 and 3.3 m bgs.

A layer of clayey silt was observed from the auger cuttings in BH201, from a depth of approximately 7.5 m bgs, to auger completion depth of approximately 10.6 m bgs. The clayey silt was grey, soft, and saturated.

5.2 Groundwater Elevation and Flow Direction

Groundwater elevations were calculated by subtracting the groundwater levels from the monitoring well ground elevation established during the elevation survey that was outlined in Section 4.10. The groundwater levels for the previous and newly installed monitoring wells were recorded on March 23, 2018. Table 5.2 summarizes the depth of groundwater.

Table 5.2: Groundwater Monitoring Well Summary

Monitoring Well	Surface elevation	Well Depth (m bgs)	Depth to GW (m bgs)	GW elevation
MW101	100.76	5.84	3.08	97.68
MW102	99.91	5.80	2.74	97.17
MW103	100.18	5.95	2.76	97.42
MW105	100.28	6.07	3.52	96.76
MW201	99.87	10.60	2.28	97.59
MW202	99.50	5.83	2.38	97.11
MW203	99.68	5.92	2.39	97.29
MW204	100.19	6.14	2.76	97.43
MW205	100.40	5.70	2.83	97.57
MW206	100.11	5.99	2.83	97.28
MW207	100.28	3.51	3.29	96.99

Note: Monitoring wells were surveyed for elevation relative to a local benchmark, in this case the south post at the southwest corner of the building on-Site, next to the gas meter (assumed elevation of 100 m).

Based on the groundwater elevation data, groundwater flow at the Site is to the northeast. Regional groundwater flow in the Study Area is expected to be north to northeast, following surface topography towards Lake Simcoe, located approximately 360 m northeast.

The groundwater level was found at depths between 2.28 and 3.52 m bgs. The effects of seasonal variation at the Site are not anticipated to significantly affect the groundwater conditions of the Site. Due to the depth of groundwater, utilities are not expected to impact the flow of groundwater or affect the migration of contaminants.

5.3 Groundwater Hydraulic Gradient

The horizontal hydraulic gradient determined at the Site was approximately 0.01 metres per metre (m/m). The gradient of the Site is towards the northeast. The vertical hydraulic gradient was determined from the nested monitoring wells that were installed on-Site. The vertical hydraulic

gradient was determined to be 0.09 m/m in the upward direction. This indicates a net upward movement of groundwater.

5.4 Hydrogeological Model

The water table at the Site lies within the native silty sand unit. The depth to the water table ranges from approximately 2.28 and 3.52 m bgs. Based on the groundwater elevation data, groundwater flow at the Site is to the northeast. Regional groundwater flow in the Study Area is expected to be northeast following surface topography.

5.5 Coarse Soil Texture

The coarse textured soil standards have been applied to this site as the predominant soil type is silty sand. Grain size analysis of a representative sample indicated that 5.9% passed through the 75 µm sieve. One composite sample was judged to be sufficient in confirming grain size at this Site due to the consistency of the native material found across the property.

5.6 Soil Field Screening

Soil samples recovered during the drilling program were screened for visual and olfactory signs of contamination, as well as for organic vapours using an RKI Eagle gas detector. The soil field screening results ranged from 0 to 6300 ppm in the soil samples. Complete soil field screening measurements are presented on the borehole logs in Appendix B.

5.7 Soil Quality

Soil samples collected during the Phase Two ESA were screened for visual and olfactory signs of contamination. Representative “worst case” soil samples were selected based on field screening for organic vapours, visual or olfactory evidence of impacts and/or site history as detailed in Table 5.7.

Table 5.7: Soil Sample Selection for Submission for Laboratory Analysis

Sample ID	Depth (m bgs)	Rationale for Submission	Analysis
BH101 SS1	0 - 0.6	Investigate fill materials, surface soil sample (<1.5 m bgs)	Metals and inorganics, pH
BH101 SS5	3.0 - 3.6	Investigate potential contamination from southwest adjacent property, subsurface soil (>1.5 m bgs), soil characterization	PHCs, BTEX, pH, grain size
BH102 SS2	0.75 - 1.35	Investigate potential contamination from historical on-Site operations	Metals and inorganics
BH102 SS4	2.25 - 2.85	Investigate potential contamination in area of former UST on-Site, petroleum odour and high vapour reading in sample, inferred groundwater table	Metals and inorganics, PHCs, BTEX, PAHs
BH102 SS9	6.0 - 6.6	Investigate potential contamination in area of former UST on-Site, petroleum odour and high vapour reading in sample	VOCs
BH103 SS2	0.75 - 1.35	Investigate potential contamination from historical on-Site operations, surface soil (<1.5 m bgs)	Metals and inorganics, pH
BH103 SS6	3.75 - 4.35	Investigate potential contamination from historical on-Site operations, petroleum odour and high vapour	PHCs, VOCs, PAHs, pH

Sample ID	Depth (m bgs)	Rationale for Submission	Analysis
		reading in sample, inferred groundwater table, subsurface soil (>1.5 m bgs)	
BH103 SS8	6.0 - 6.6	Vertical delineation of PHC and PAH impacts in BH103	PHCs, BTEX, PAHs
BH104 SS5	3.0 - 3.6	Investigate potential contamination from south and east adjacent properties, inferred groundwater table	PHCs, BTEX
BH104 SS7	6.0 - 6.6	Investigate potential contamination from south and east adjacent properties	VOCs
BH105 SS5	3.0 - 3.6	Investigate potential contamination from north adjacent property, slight petroleum odour, inferred groundwater table	PHCs, BTEX
BH105 SS8	6.0 - 6.6	Investigate potential contamination from north adjacent property	VOCs
BH123 SS6	3.75 - 4.35	Duplicate sample of BH103 SS6	PHCs, BTEX
BH201 SS1	6.0 - 6.9	Vertical delineation of PHC and PAH impacts in BH103	PHCs, BTEX, PAHs
BH202 SS4	2.4 - 3.0	Lateral delineation of PHC and PAH impacts in BH102, inferred groundwater table	PHCs, BTEX, PAHs
BH203 SS3	2.4 - 3.0	Lateral delineation of PHC and PAH impacts in BH102, inferred groundwater table	PHCs, BTEX, PAHs
BH204 SS4	2.4 - 3.6	Lateral delineation of PHC and PAH impacts in BH103, inferred groundwater table	PHCs, BTEX, PAHs
BH205 SS3	2.4 - 3.6	Lateral delineation of PHC and PAH impacts in BH103, inferred groundwater table	PHCs, BTEX, PAHs
BH206 SS4	2.4 - 3.6	Lateral delineation of PHC and PAH impacts in BH103, inferred groundwater table	PHCs, BTEX, PAHs
BH207 SS4	2.4 - 3.3	Lateral delineation of PHC and PAH impacts in BH102, inferred groundwater table	PHCs, BTEX, PAHs
BH223 SS3	2.4 - 3.0	Duplicate sample of BH203 SS3	PHCs, BTEX

Notes: PHCs - Petroleum Hydrocarbons Fractions F1-F4
VOCs - Volatile Organic Compounds
BTEX - Benzene, Toluene, Ethylbenzene, Xylenes
PAHs - Polycyclic Aromatic Hydrocarbons
UST - Underground Storage Tank

The laboratory Certificates of Analysis for the soil samples submitted for analysis are included in Appendix D, and analytical results tables are presented in Appendix C.

5.7.1 Petroleum Hydrocarbons Fractions F1-F4 (PHC F1-F4) and Benzene, Toluene, Ethylbenzene and Xylenes (BTEX)

Soil samples BH101 SS5, BH102 SS4, BH103 SS6, BH103 SS8, BH104 SS5, BH105 SS5, BH201 SS1, BH202 SS4, BH203 SS3, BH204 SS4, BH205 SS3, BH206 SS4, BH207 SS4, BH123 SS6 (duplicate sample of BH103 SS6), and BH223 SS3 (duplicate sample of BH203 SS3) were submitted for laboratory analysis of PHCs and BTEX. Concentrations of PHCs were above the MOECC Table 2 SCS in soil samples from BH102 SS4, BH103 SS6, BH207 SS4, and BH123 SS6, and concentrations of BTEX parameters were above the MOECC Table 2 SCS in soil sample BH207 SS4. PHC and BTEX parameters were either not detected or detected at levels below the MOECC Table 3 SCS in the soil samples submitted for analysis.

5.7.2 Volatile Organic Compounds (VOCs)

Soil samples BH102 SS9, BH103 SS6, BH104 SS7, and BH105 SS8 were submitted for laboratory analysis of VOCs. With the exception of the elevated BTEX parameters discussed in section 5.7.1, VOC parameters were either not detected or detected at levels below the MOECC Table 2 SCS in the soil samples submitted for analysis. The laboratory detection limits (DL) for 1,1,2,2-tetrachloroethane exceeded the MOECC Table 2 criteria in soil sample BH102 SS9, and the laboratory DLs for bromodichloromethane, chloroform, ethylene dibromide, 1,1,2,2-tetrachloroethane, and 1,1,2-trichloroethane exceeded the MOECC Table 2 criteria in soil sample BH103 SS6. It is our opinion that the elevated DLs do not represent any additional environmental risk to the Site.

5.7.3 Metals and Inorganics

Soil samples BH101 SS1, BH102 SS2, BH102 SS4, and BH103 SS2 were submitted for laboratory analysis of metals and inorganics. Metals and inorganics parameters were either not detected or detected at levels below the MOECC Table 2 SCS in the soil samples submitted for analysis.

5.7.4 Polycyclic Aromatic Hydrocarbons (PAHs)

Soil samples BH102 SS4, BH103 SS6, BH201 SS1, BH202 SS4, BH203 SS3, BH204 SS4, BH205 SS3, BH206 SS4, BH207 SS4, and BH223 SS3 (duplicate sample of BH203 SS3) were submitted for laboratory analysis of PAHs. Concentrations of PAHs were above the MOECC Table 2 SCS in soil samples from BH102 SS4, BH103 SS6, and BH207 SS4. PAH parameters were either not detected or detected at levels below the MOECC Table 3 SCS in the remainder of the soil samples submitted for analysis.

5.8 Groundwater Quality

Groundwater samples were collected on February 13, 2018 from groundwater monitoring wells MW101 to MW104 and MW105, and on March 23, 2018 from groundwater monitoring wells MW102, MW103, and MW201 to MW207. Table 5.8 provides details of the groundwater samples collected and the chemical analyses performed.

Table 5.8: Groundwater Sample Submission

Sample/ Monitoring Well ID	Date Sampled	Rationale for Submission	Analysis
MW101	02/13/18	Investigate potential contamination from southwest adjacent property	PHCs, VOCs
MW102	02/13/18	Investigate potential contamination in area of former UST on-Site	PHCs, VOCs, metals and inorganics, PAHs
MW103	02/13/18	Investigate potential contamination related to historical on-Site operations	PHCs, VOCs, metals and inorganics, PAHs
MW105	02/13/18	Investigate potential contamination from north adjacent property	PHCs, VOCs

Sample/ Monitoring Well ID	Date Sampled	Rationale for Submission	Analysis
MW122	02/13/18	Duplicate sample of MW102	PHCs, VOCs, metals and inorganics, PAHs
MW102	03/23/18	Confirm PHC and PAH exceedances found during February sampling event	PHCs, BTEX, PAHs
MW103	03/23/18	Confirm PHC and PAH exceedances found during February sampling event	PHCs, BTEX, PAHs
MW201	03/23/18	Vertical delineation of PHC and PAH exceedances in MW102	PHCs, VOCs, PAHs
MW202	03/23/18	Lateral delineation of PHC and PAH exceedances in MW102	PHCs, BTEX, PAHs
MW203	03/23/18	Lateral delineation of PHC and PAH exceedances in MW102	PHCs, BTEX, PAHs
MW204	03/23/18	Lateral delineation of PHC and PAH exceedances in MW103	PHCs, BTEX, PAHs
MW205	03/23/18	Lateral delineation of PHC and PAH exceedances in MW103	PHCs, BTEX, PAHs
MW206	03/23/18	Lateral delineation of PHC and PAH exceedances in MW103	PHCs, BTEX, PAHs
MW207	03/23/18	Lateral delineation of PHC and PAH exceedances in MW102	PHCs, BTEX, PAHs
MW221	03/23/18	Duplicate sample of MW201	PHCs, VOCs, PAHs

Notes: PHC - Petroleum Hydrocarbons Fractions F1-F4
PAHs - Polycyclic Aromatic Hydrocarbons
VOCs - Volatile Organic Compounds
BTEX - Benzene, Toluene, Ethylbenzene, Xylenes
UST - Underground Storage Tank

A sheen and hydrocarbon odour were present in purged groundwater from monitoring wells MW102, MW103, and MW207.

The laboratory Certificates of Analysis for the groundwater samples submitted for analysis are included in Appendix D, and analytical results tables are presented in Appendix C.

5.8.1 PHCs and BTEX

Groundwater from monitoring wells MW101 to MW103, MW105, MW122 (duplicate sample of MW102), MW201 to MW207, and MW221 (duplicate sample of MW201) were submitted for laboratory analysis of PHCs and BTEX. Concentrations of PHCs and BTEX were above the MOECC Table 2 SCS in groundwater samples from MW102, MW103, and MW122 during the February 13 sampling event, and in groundwater samples from MW102, MW103, and MW207 during the March 23 sampling event. PHC and BTEX parameters were not detected in the remainder of the groundwater samples submitted for analysis.

5.8.2 VOCs

Groundwater from monitoring wells MW101 to MW103, MW105, MW122 (duplicate sample of MW102), MW201, and MW221 (duplicate sample of MW201) were submitted for laboratory analysis of VOCs. Concentrations of ethylbenzene, hexane, toluene, and xylenes were above the MOECC Table 2 SCS in groundwater samples submitted from MW103 during the February 13 sampling event. With the exception of the elevated BTEX parameters discussed in section 5.8.1, VOCs were either not detected or detected at concentrations below the MOECC Table 2 SCS in the remainder of the groundwater samples submitted for analysis.

The laboratory DLs for several VOC parameters exceeded the MOECC Table 2 criteria in groundwater samples from MW102, MW103, and MW122. It is our opinion that the elevated DLs do not represent any additional environmental risk to the Site.

5.8.3 Metals and Inorganics

Groundwater from monitoring wells MW102, MW103, and MW122 (duplicate sample of MW122) were submitted for laboratory analysis of metals and inorganics. Metals and inorganics parameters were either not detected or detected at concentrations below the MOECC Table 2 SCS in the groundwater samples submitted for analysis.

5.8.4 PAHs

MW101 to MW103, MW105, MW122 (duplicate sample of MW102), MW201 to MW207, and MW221 (duplicate sample of MW201) were submitted for laboratory analysis of PAHs. Concentrations of PAHs were above the MOECC Table 2 SCS in groundwater samples from MW102, MW103, and MW122 during the February 13 sampling event, and in groundwater samples from MW102, MW103, and MW207 during the March 23 sampling event. PAH parameters were not detected in the remainder of the groundwater samples submitted for analysis.

5.9 Quality Assurance/Quality Control Results

ALS Environmental is accredited by the Standards Council of Canada/Canadian Association of Environmental Analytical Laboratories in accordance with ISO/IEC 17025:1999 – "General Requirements for the Competence of Testing and Calibration Laboratories" for the analysis of all parameters for all samples in the scope of work for which SCS have been established under O. Reg. 153/04.

The "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act" ("the Analytical Protocol"), MOECC, March 2004, establishes the criteria used in assessing the performance of analytical laboratories when the data are used in support of the filing of Records of Site Condition.

ALS's overall quality control for the analysis meets their acceptability criteria.

The following Table summarizes the QA/QC samples were taken during this investigation:

Table 5.9: QA/QC Samples Submitted for Laboratory Analysis

Sample ID	Date	Matrix	Rationale for Submission	Analysis
BH123 SS6	February 9, 2018	Soil	Field Duplicate of BH103 SS6	PHCs, BTEX
BH223 SS3	March 19, 2018	Soil	Field Duplicate of BH203 SS3	PHCs, BTEX
MW122	February 13, 2018	GW	Duplicate sample of MW102	PHCs, VOCs, metals and inorganics, PAHs
MW221	March 23, 2018	GW	Duplicate sample of MW201	PHCs, VOCs, PAHs
Trip Blank	February 13, 2018	GW	Laboratory Quality Assurance	VOCs
Trip Spike	February 13, 2018	GW	Laboratory Quality Assurance	VOCs
Trip Blank	March 23, 2018	GW	Laboratory Quality Assurance	VOCs

Sample ID	Date	Matrix	Rationale for Submission	Analysis
Trip Spike	March 23, 2018	GW	Laboratory Quality Assurance	VOCs

Notes: GW - Groundwater
PHC – Petroleum Hydrocarbons
VOCs – Volatile Organic Compounds
BTEX - Benzene, Toluene, Ethylbenzene, Xylenes
PAHs - Polycyclic Aromatic Hydrocarbons

In order to determine the reproducibility of the sampling ad analytical results, the Relative Percent Difference (RPD) was calculated for duplicate soil and groundwater samples. The formula for RPD is:

$$RPD = \frac{\text{Difference between duplicate results}}{\text{Average of Duplicate results}} \times 100\%$$

RPD values calculated for soil and groundwater parameters detected above 40% are presented in the following table:

QA/QC Samples Submitted for Laboratory Analysis

Parameter	Sample ID	Analytical Result	RPD (%)
Petroleum Hydrocarbon F1	MW102	14,100 µg/L	74.6
	MW122	6,400 µg/L	
	BH103 SS6	536 µg/g	87.5
	BH123 SS6	1,370 µg/L	
Copper	MW102	0.62 µg/L	76.6
	MW122	1.39 µg/L	
Zinc	MW102	1.7 µg/L	55.3
	MW122	3 µg/L	
Chrysene	MW102	0.43 µg/L	43.6
	MW122	0.276 µg/L	

A sheen was observed in groundwater from MW102 at the time of sampling, and as a result, sample heterogeneity may cause the RPD between the two samples to exceed the alert limit. The presence of sediment may also cause increased sample heterogeneity, potentially leading to high RPDs. As hydrocarbons sorb well to sediment, a small amount in the groundwater samples may cause dissimilar results.

Although the RPD values for several PHC, metals, and PAH parameters were greater than 40%, the overall RPD values were below 40%, indicating acceptable reproducibility for the soil and groundwater analysis. The overall quality of the field data from the investigation with respect to the data quality objectives demonstrated that the overall objectives of the investigation and the assessment were met.

Trip Blank – VOCs were not detected in the trip blank.

Trip Spike – Percent recovery of the Trip Spike parameters ranged from 69.9% to 147%, within acceptable recovery levels.

With respect to subsection 47 (3) of the regulation, we confirm that:

A. All certificates of analysis or analytical reports received pursuant to clause 47 (2) (b) of the regulation comply with subsection 47(3)

B. A certificate of analysis or analytical report has been received for each sample submitted for analysis, and

C. All certificates of analysis or analytical reports received have been included in full in an appendix to the phase two environmental site assessment report.

6. Summary of Findings

The results of the Phase Two ESA lead to the following findings:

1. Native material beneath site generally consists of silty sand.

2. Groundwater was found in the new and previously installed monitoring wells at depths between 2.28 and 3.52 m below ground surface.

3. Concentrations of petroleum hydrocarbons (PHCs) including benzene, toluene, ethylbenzene, and xylenes (BTEX) and polycyclic aromatic hydrocarbons (PAHs) were above the MOECC Table 2 SCS in soil samples from BH102 SS4, BH103 SS6, and BH207 SS4.

4. Concentrations of PHCs (including BTEX), and PAHs were above the MOECC Table 2 SCS in groundwater samples from MW102, MW103, and MW207.

5. The concentration of hexane was above the MOECC Table 2 SCS in the groundwater from MW103.

6. The concentrations of volatile organic compounds (VOCs) and metals and inorganics were below the MOECC Table 2 SCS for residential property use and coarse-grained soil in the analyzed soil samples.

7. The concentrations of metals and inorganics were below the MOECC Table 2 SCS for residential property use and coarse-grained soil in the analyzed groundwater samples.

7. Conclusions and Recommendations

Based on the results of the Phase Two ESA, the property does not meet the MOECC Table 2 SCS for Residential/Parkland/Institutional Property Use and coarse textured soil.

To file for a Record of Site Condition (RSC), remediation or risk management measures are required to meet the requirements of O.Reg. 153/04.

8. Qualifications of the Assessors

This Phase Two ESA was conducted by Ms. Dana Haslett, B.A. Ms. Haslett is responsible for the successful completion of field work and the completion of reporting. Ms. Haslett has completed numerous projects on behalf of private and public-sector clients for industrial, commercial and residential sites.

This Phase One ESA was reviewed by Mr. Steve Campbell, P. Geo. Mr. Campbell has over 20 years of environmental consulting experience, including Phase One and Two ESAs, hazardous materials management, contaminant hydrogeology, air quality, environmental monitoring and remediation of contaminated sites. Mr. Campbell is responsible for the overall management of projects, QA/QC, and health and safety, as well as acting as a technical lead on projects. Mr. Campbell is a Qualified Person as defined in Ontario Regulation 153/04 for signing off on Phase One and Two ESAs, remediation reports and Records of Site Condition (RSCs). Mr. Campbell has managed numerous asbestos, designated substances and mould assessments, as well as remediation programs.

9. References and Supporting Documentation

a) *"Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario" Ministry of the Environment of Ontario, December 1996.*

b) *"Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", April 15, 2011.*

c) "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", dated July 27, 2009.

d) *The Ontario Water Resources Act – R.R.O. 1990, Regulation 903 – Amended to O. Reg. 128/03, August 2003.*

e) *"Protocol for Analytical Methods Used in the Assessment of Properties Under Part XV.1 of the Environmental Protection Act", March 2004.*

f) *Ontario Regulation 153/04 (made under the Environmental Protection Act), May 2004 (MOE).*

g) *"Z769-00, Phase II Environmental Site Assessment," Canadian Standard Association, March 2000.*

h) *Environmental Protection Act, R.S.O. 1990, Chapter E.19, as amended, September 2004.*

i) Singer SN, Cheng CK, Scafe MG. (2003). *The Hydrogeology of Southern Ontario, Second Edition*, Report from the Ontario Ministry of the Environment.

j) *"Phase One Environmental Site Assessment, 41 & 43 Essa Road, Barrie, Ontario,"* dated February 6, 2018, prepared by G2S Environmental Consulting Inc. for Barrie Drive-A-Car (1979) Limited.

10. Limitations

This report has been prepared for the sole benefit of Barrie Rent-A-Car (1979) Limited and is intended to provide limited information on the subsurface environmental conditions at the property located at 41 & 43 Essa Road in Barrie, Ontario. The report may not be used by any other person or entity without the expressed written consent of Barrie Rent-A-Car (1979) Limited and G2S Environmental Consulting Inc. (G2S). Any use which a third party makes of this report, or any reliance on decisions made based on it, is the responsibility of such third parties. G2S accepts no responsibility for damages, if any suffered by any third party as a result of decisions made or actions based on this report.

The findings in this report are limited to the conditions at the Site at the time of this investigation as described herein. Conclusions presented in this report should not be construed as legal advice.

If Site conditions or applicable standards change or if any additional information becomes available at a future date, changes to the findings, conclusions and recommendations in this report may be necessary.

11. Closing Remarks

We trust this report is satisfactory for your purposes. Should you have any questions, please do not hesitate to contact this office.

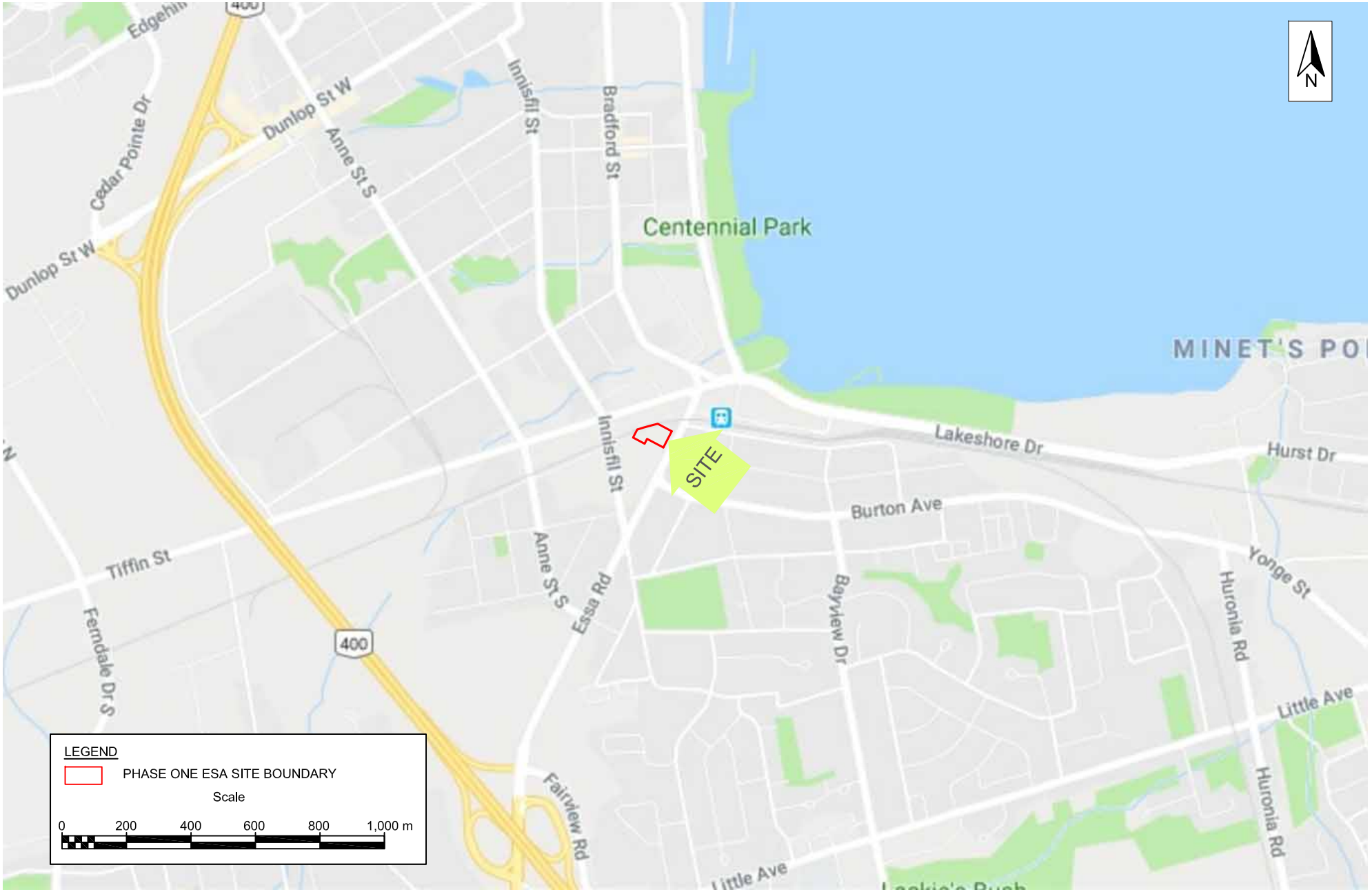
Yours truly,

G2S Environmental Consulting Inc.

Dana Haslett, B.A.
Senior Environmental Technician

Steve Campbell, P.Geo.
Senior Project Manager

Appendix A:
Drawings



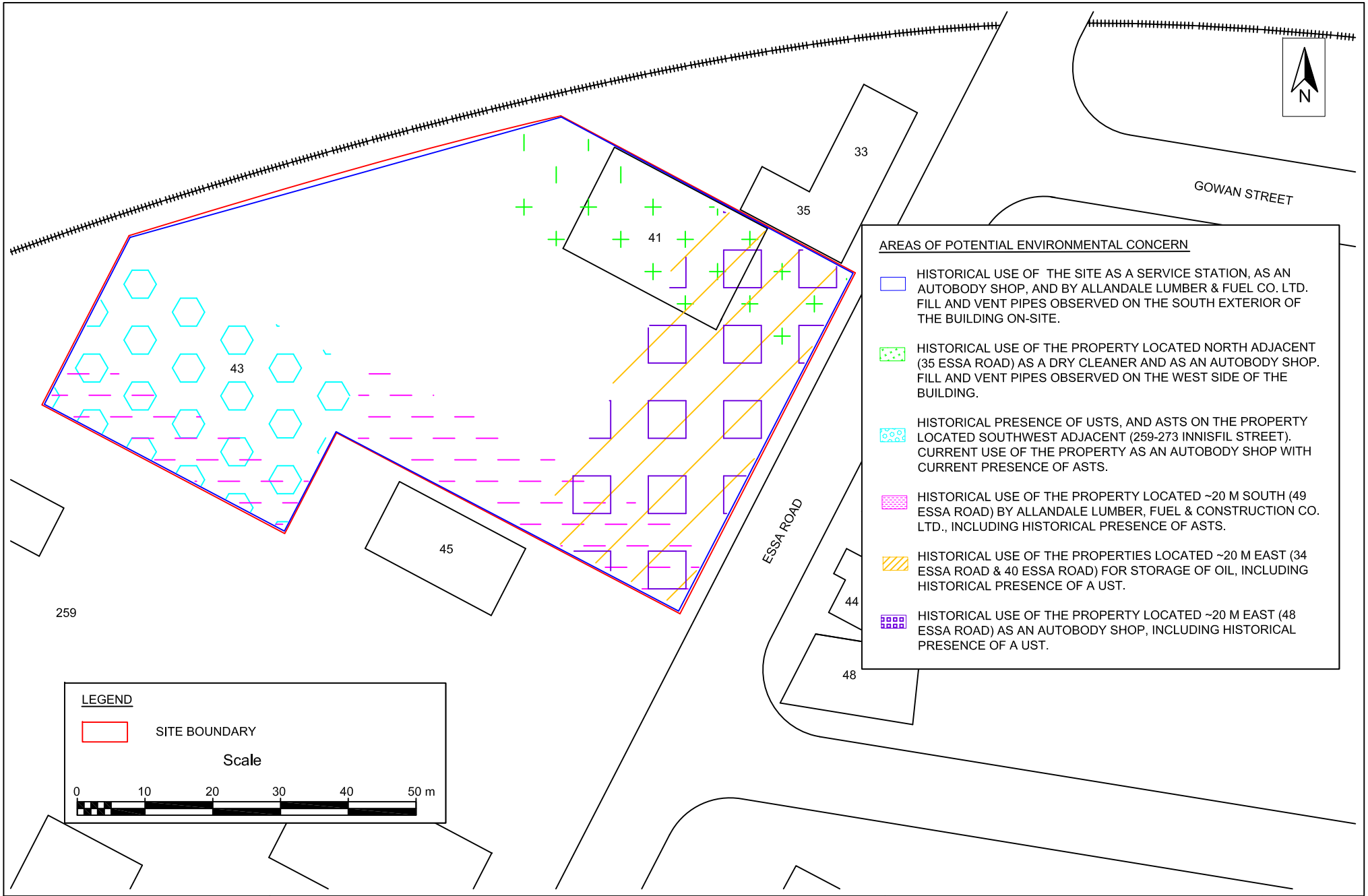
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Project No.:	G2S18006B
Date:	APRIL 1, 2018
Drawn by:	DH/SC
File name:	41ESSAP2.dwg

SITE LOCATION PLAN
41 & 43 ESSA ROAD

BARRIE ONTARIO

G2S Environmental Consulting Inc.

Drawing No. 1



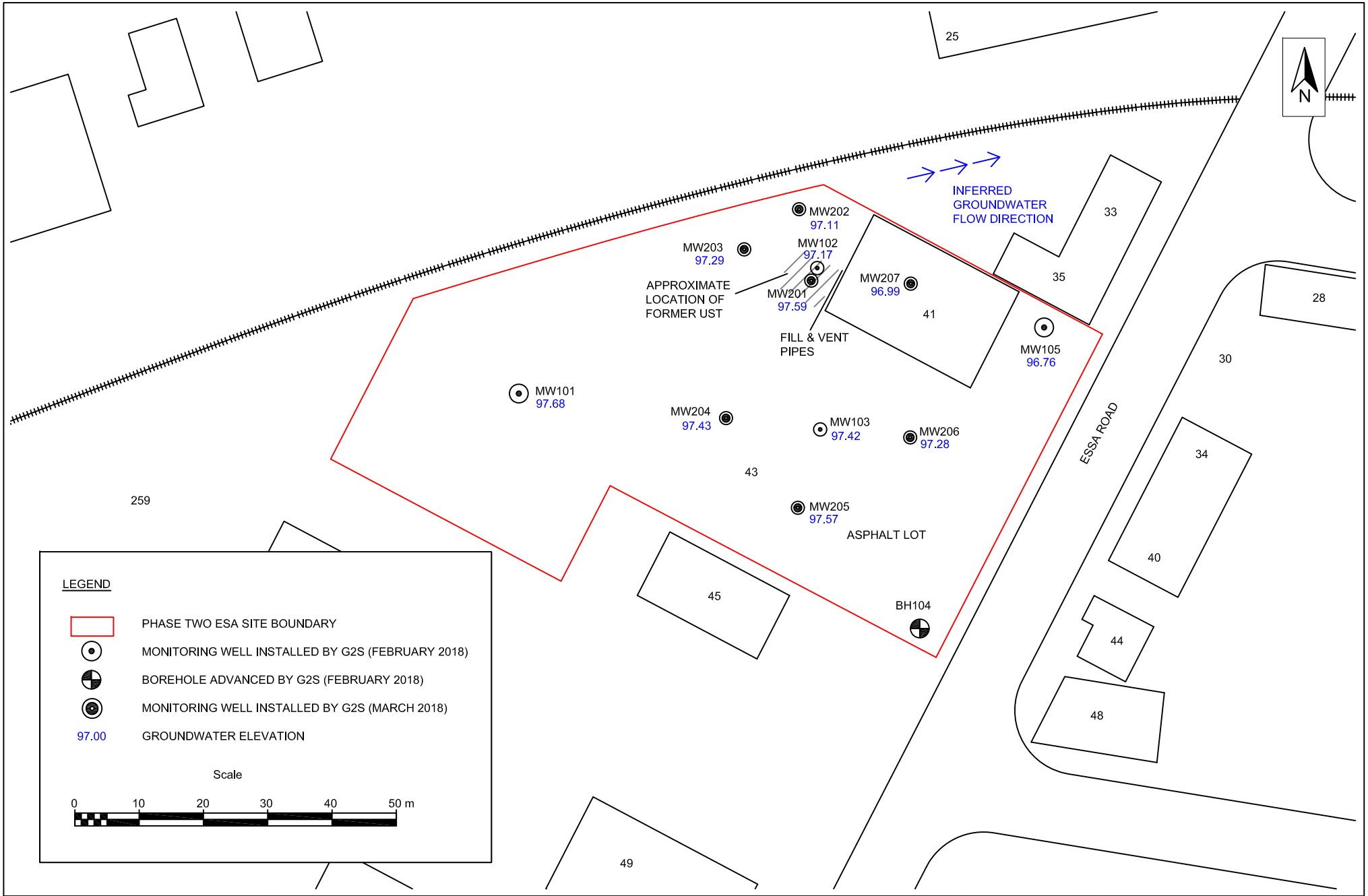
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File name:	41ESSAP2.dwg

AREAS OF POTENTIAL ENVIRONMENTAL CONCERN
41 & 43 ESSA ROAD

BARRIE ONTARIO

G2S Environmental Consulting Inc.

Drawing No. 2



Scale:	1:750
Project No.:	G2S18006B
Date:	APRIL 1, 2018
Drawn by:	DH/SC
File name:	41ESSAP2.dwg

BOREHOLE/MONITORING WELL LOCATION PLAN
41 & 43 ESSA ROAD

BARRIE ONTARIO

G2S Environmental Consulting Inc.

Drawing No. 3

Appendix B:
Borehole Logs

WELL NUMBER BH/MW101

CLIENT Barrie Drive-A-Car (1979) Ltd. **PROJECT NAME** Phase Two ESA

PROJECT NUMBER G2S18006B **PROJECT LOCATION** 41 & 43 Essa Road, Barrie, Ontario

DATE STARTED 2/8/18 **COMPLETED** 2/8/18 **GROUND ELEVATION** 100.76 m **HOLE SIZE** 15 cm

DRILLING CONTRACTOR Profile Drilling **GROUND WATER LEVELS:**

DRILLING METHOD Hollow Stem Augers/Split Spoon Samplers **AT TIME OF DRILLING** ---

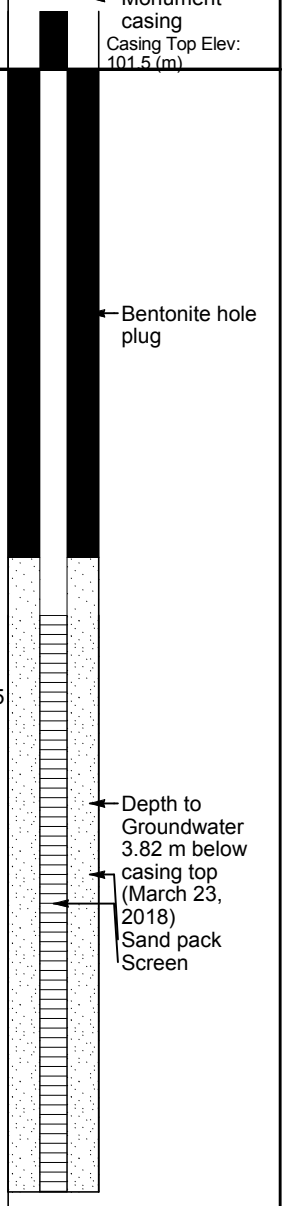
LOGGED BY DH **CHECKED BY** JS **AT END OF DRILLING** ---

NOTES Vapour Measurements in ppm **AFTER DRILLING** 3.08 m / Elev 97.68 m

DEPTH (m)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	GRAPHIC LOG	MATERIAL DESCRIPTION	ENVIRONMENTAL DATA
				0.10 Approximately 10 cm of concrete 100.66	
	SS1	90-18-10-10/0.05		FILL - Sand, some silt, trace gravel, black, dry to moist, compact	GSTH = 0 PID = 0
				0.60 100.16	
				SILTY SAND - Brown, moist, fine, loose	
1	SS2	3-3-3-4 (6)			GSTH = 0 PID = 0
	SS3	3-4-5-6 (9)			GSTH = 5 PID = 0
2					
	SS4	2-3-4-7 (7)			GSTH = 5 PID = 0
3					
	SS5	5-8-12-15 (20)			GSTH = 15 PID = 0
4					
				Grey and saturated at 4.5 m bgs	
	SS6	0-6-10-13 (16)			GSTH = 0 PID = 0
5					
6					
	SS7	0-4-9-12 (13)			GSTH = 0 PID = 0
				End of sampling at 6.6 m bgs	
				6.60 94.16	

Bottom of hole at 6.60 m.

WELL DIAGRAM



WELL NUMBER BH/MW102

CLIENT Barrie Drive-A-Car (1979) Ltd. **PROJECT NAME** Phase Two ESA

PROJECT NUMBER G2S18006B **PROJECT LOCATION** 41 & 43 Essa Road, Barrie, Ontario

DATE STARTED 2/8/18 **COMPLETED** 2/8/18 **GROUND ELEVATION** 99.91 m **HOLE SIZE** 15 cm

DRILLING CONTRACTOR Profile Drilling **GROUND WATER LEVELS:**

DRILLING METHOD Hollow Stem Augers/Split Spoon Samplers **AT TIME OF DRILLING** ---

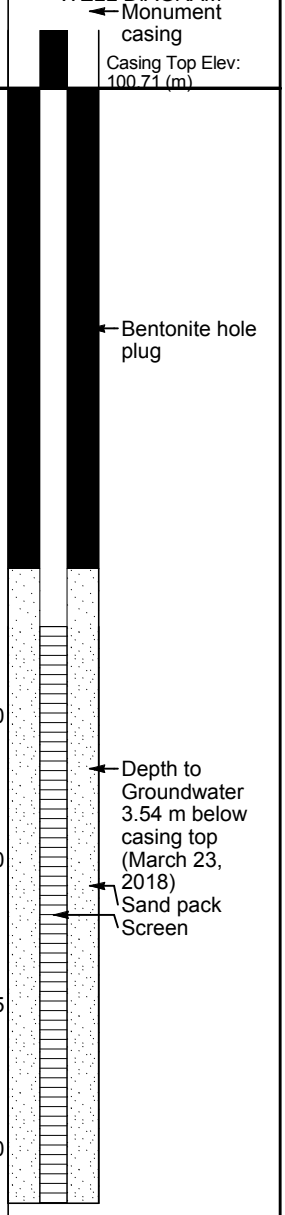
LOGGED BY DH **CHECKED BY** JS **AT END OF DRILLING** ---

NOTES Vapour Measurements in ppm **AFTER DRILLING** 2.74 m / Elev 97.17 m

DEPTH (m)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	TESTS	GRAPHIC LOG	MATERIAL DESCRIPTION	ENVIRONMENTAL DATA
					0.05 / 99.86 Approximately 5 cm of topsoil	
	SS1	10-4-4-7/0.10	MC = 15%		FILL - Sand and gravel, some silt, trace rocks, dry to moist, black/brown, hard, compact	GSTH = 0 PID = 0
					0.60 / 99.31 SILTY SAND - Brown, fine, moist to wet, compact, layering	
1	SS2	1-2-5-5 (7)	MC = 21%			GSTH = 0 PID = 0
	SS3	2-1-2-4 (3)	MC = 19%			GSTH = 0 PID = 0
2					Petroleum odour from 1.5 m bgs to bottom of hole	
	SS4	3-7-9-13 (16)	MC = 16%			GSTH = 310 PID = 268
3						
	SS5	4-6-8-11 (14)	MC = 19%		Greyish brown and saturated at 3.0 m bgs	GSTH = 60 PID = 104
4	SS6	0-2-5-7 (7)	MC = 24%			GSTH = 90 PID = 88
	SS7	0-0-2-5 (2)	MC = 23%			GSTH = 15 PID = 8
5						
	SS8	2-1-2-4 (3)	MC = 25%			GSTH = 20 PID = 14
6						
	SS9	0-3-7-11 (10)	MC = 20%			GSTH = 300 PID = 90
					6.60 / 93.31 End of sampling at 6.6 m bgs	

Bottom of hole at 6.60 m.

WELL DIAGRAM



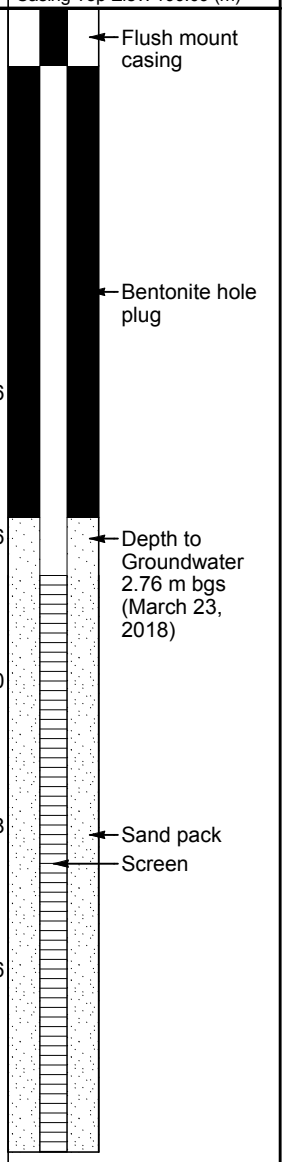
GENERAL BH / TP / WELL ESSA BH LOGS.GPJ GINT STD CANADA LAB.GDT 4/2/18

WELL NUMBER BH/MW103

CLIENT Barrie Drive-A-Car (1979) Ltd.
PROJECT NAME Phase Two ESA
PROJECT NUMBER G2S18006B
PROJECT LOCATION 41 & 43 Essa Road, Barrie, Ontario
DATE STARTED 2/9/18 **COMPLETED** 2/9/18
GROUND ELEVATION 100.18 m **HOLE SIZE** 15 cm
DRILLING CONTRACTOR Profile Drilling
GROUND WATER LEVELS:
DRILLING METHOD Hollow Stem Augers/Split Spoon Samplers
AT TIME OF DRILLING ---
LOGGED BY DH **CHECKED BY** JS
AT END OF DRILLING ---
NOTES Vapour Measurements in ppm
AFTER DRILLING 2.76 m / Elev 97.42 m

DEPTH (m)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	TESTS	GRAPHIC LOG	MATERIAL DESCRIPTION	ENVIRONMENTAL DATA
	SS1	75	MC = 8%		0.05 / 100.13 Approximately 5 cm of asphalt FILL - Sand and gravel, some rocks, brown, dry to moist, loose, hard 0.60 / 99.58	GSTH = 0 PID = 0
1	SS2	3-6-4-5 (10)	MC = 6%		SILTY SAND - Light brown, fine, moist, loose, layering	GSTH = 0 PID = 0
2	SS3	1-3-4-7 (7)	MC = 15%			GSTH = 1350 PID = 1596
	SS4	2-5-8-8 (13)	MC = 20%		Petroleum odour from 1.5 m bgs to bottom of hole	GSTH = 1350 PID = 1286
3	SS5	0-4-8-14 (12)	MC = 21%		Greyish brown and saturated at 3.0 m bgs	GSTH = 1300 PID = 1000
4	SS6	0-3-9-9 (12)	MC = 21%			GSTH = 6300 PID = 1788
5	SS7	0-4-8-10 (12)	MC = 18%			GSTH = 3350 PID = 1426
6	SS8	0-0-5-8 (5)	MC = 21%		Slight odour only from 4.5 m bgs to bottom of hole 6.60 / 93.58	GSTH = 510 PID = 474
					End of sampling at 6.6 m bgs Bottom of hole at 6.60 m.	

WELL DIAGRAM



BOREHOLE NUMBER BH104

CLIENT Barrie Drive-A-Car (1979) Ltd.
PROJECT NAME Phase Two ESA
PROJECT NUMBER G2S18006B
PROJECT LOCATION 41 & 43 Essa Road, Barrie, Ontario
DATE STARTED 2/9/18 **COMPLETED** 2/9/18
GROUND ELEVATION **HOLE SIZE** 10 cm
DRILLING CONTRACTOR Profile Drilling
GROUND WATER LEVELS:
DRILLING METHOD Direct Push/Hollow Stem Augers
AT TIME OF DRILLING ---
LOGGED BY DH **CHECKED BY** JS
AT END OF DRILLING ---
NOTES Vapour Measurements in ppm
AFTER DRILLING ---

DEPTH (m)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	TESTS	GRAPHIC LOG	MATERIAL DESCRIPTION	ENVIRONMENTAL DATA
					0.10 Approximately 10 cm of asphalt	
	SS1	4-19-9-7/0.05	MC = 3%		FILL - Sand and gravel, trace asphalt/gravel, dry to moist, compact, black	GSTH = 0 PID = 0
					0.60 SILTY SAND - Light brown, fine, moist, loose to compact	
1	SS2	4-5-6-6 (11)	MC = 7%			GSTH = 0 PID = 0
2	SS3	3-4-4-6 (8)	MC = 7%			GSTH = 0 PID = 0
					Greyish brown and saturated at 2.25 m bgs	
3	SS4	3-6-7-11 (13)	MC = 8%			GSTH = 0 PID = 0
	SS5	5-8-8-10 (16)	MC = 9%			GSTH = 0 PID = 0
4						
5	SS6	5-8-12-15 (20)	MC = 17%			GSTH = 0 PID = 0
6						
	SS7	1-1-6-2 (7)	MC = 19%		End of sampling at 6.6 m bgs	GSTH = 0 PID = 0
					6.60 Bottom of hole at 6.60 m.	

WELL NUMBER BH/MW105

CLIENT Barrie Drive-A-Car (1979) Ltd.
PROJECT NAME Phase Two ESA
PROJECT NUMBER G2S18006B
PROJECT LOCATION 41 & 43 Essa Road, Barrie, Ontario
DATE STARTED 2/9/18 **COMPLETED** 2/9/18
GROUND ELEVATION 100.28 m **HOLE SIZE** 15 cm
DRILLING CONTRACTOR Profile Drilling
GROUND WATER LEVELS:
DRILLING METHOD Hollow Stem Augers/Split Spoon Samplers
AT TIME OF DRILLING ---
LOGGED BY DH **CHECKED BY** JS
AT END OF DRILLING ---
NOTES Vapour Measurements in ppm
AFTER DRILLING 3.52 m / Elev 96.76 m

DEPTH (m)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	TESTS	GRAPHIC LOG	MATERIAL DESCRIPTION	ENVIRONMENTAL DATA	WELL DIAGRAM
					0.10 Approximately 10 cm of topsoil 100.18		Casing Top Elev: 100.14 (m)
	SS1	21-12-7-7/0.05	MC = 11%		FILL - Sand and gravel, some rocks, compact, dry to moist	GSTH = 0 PID = 0	Flush mount casing
					0.60 99.68		
1	SS2	2-1-3-3 (4)	MC = 16%		SILTY SAND - Light brown, moist, fine, loose	GSTH = 0 PID = 0	
	SS3	2-3-4-4 (7)	MC = 18%			GSTH = 0 PID = 0	Bentonite hole plug
2							
	SS4	4-7-10-12 (17)	MC = 10%		Petroleum odour from 2.25 to 4.35 m bgs	GSTH = 0 PID = 0	
3							
	SS5	6-10-12-13 (22)	MC = 17%			GSTH = 15 PID = 0	Depth to Groundwater 3.52 m bgs (March 23, 2018)
					Grey and saturated at 3.75 m bgs		
4	SS6	1-9-7-10 (16)	MC = 23%			GSTH = 0 PID = 0	Sand pack
	SS7	0-5-9-9 (14)	MC = 19%			GSTH = 0 PID = 0	Screen
5							
6							
	SS8	0-3-6-8 (9)	MC = 19%			GSTH = 0 PID = 0	
					6.60 End of sampling at 6.6 m bgs 93.68		
					Bottom of hole at 6.60 m.		

GENERAL BH / TP / WELL ESSA BH LOGS.GPJ GINT STD CANADA LAB.GDT 4/2/18

WELL NUMBER BH/MW201

CLIENT Barrie Drive-A-Car (1979) Ltd.
PROJECT NAME Phase Two ESA
PROJECT NUMBER G2S18006B
PROJECT LOCATION 41 & 43 Essa Road, Barrie, Ontario
DATE STARTED 3/19/18 **COMPLETED** 3/19/18
GROUND ELEVATION 99.87 m **HOLE SIZE** 15 cm
DRILLING CONTRACTOR Profile Drilling
GROUND WATER LEVELS:
DRILLING METHOD Direct Push/Hollow Stem Augers
AT TIME OF DRILLING ---
LOGGED BY DH **CHECKED BY** JS
AT END OF DRILLING ---
NOTES Vapour Measurements in ppm
AFTER DRILLING 2.28 m / Elev 97.59 m

DEPTH (m)	SAMPLE TYPE NUMBER	GRAPHIC LOG	MATERIAL DESCRIPTION	ENVIRONMENTAL DATA	WELL DIAGRAM
			0.05 Approximately 5 cm of asphalt 99.82		Monument
			FILL - Sand and gravel, some rocks, hard, compact, black/brown		Casing Top Elev: 100.69 (m)
			0.60 99.27		
			SILTY SAND - Brown, fine, wet, compact		
2					
			Greyish brown and saturated at 3.0 m bgs		Depth to Groundwater 3.08 m below casing top (March 23, 2018)
4					Bentonite hole plug
6	SS1		Sample refusal at 6.9 m bgs	GSTH = 0 PID = 1	
			6.90 92.97		
	AU		CLAYEY SILT - Auger cuttings observed to be grey clayey silt from 7.5 m bgs to bottom of hole		
8					Sand pack
					Screen
10			10.50 89.37		
			Bottom of hole at 10.60 m.		

GENERAL BH / TP / WELL ESSA BH LOGS.GPJ GINT STD CANADA LAB.GDT 4/2/18

WELL NUMBER BH/MW202

CLIENT Barrie Drive-A-Car (1979) Ltd.
PROJECT NAME Phase Two ESA
PROJECT NUMBER G2S18006B
PROJECT LOCATION 41 & 43 Essa Road, Barrie, Ontario
DATE STARTED 3/19/18 **COMPLETED** 3/19/18
GROUND ELEVATION 99.5 m **HOLE SIZE** 15 cm
DRILLING CONTRACTOR Profile Drilling
GROUND WATER LEVELS:
DRILLING METHOD Direct Push/Hollow Stem Augers
AT TIME OF DRILLING ---
LOGGED BY DH **CHECKED BY** JS
AT END OF DRILLING ---
NOTES Vapour Measurements in ppm
AFTER DRILLING 2.38 m / Elev 97.12 m

DEPTH (m)	SAMPLE TYPE NUMBER	GRAPHIC LOG	MATERIAL DESCRIPTION	ENVIRONMENTAL DATA	WELL DIAGRAM
			Casing Top Elev: 99.38 (m)		
	SS1		0.05 Approximately 5 cm of topsoil 99.45 FILL - Sand and gravel, some topsoil, moist, compact, trace organics, black/brown	GSTH = 0 PID = 0	Flush mount casing
1	SS2		0.90 98.60 SILTY SAND - Brown, fine, moist to wet, compact	GSTH = 0 PID = 0	
2	SS3			GSTH = 0 PID = 0	Bentonite hole plug
			Greyish brown and saturated at 2.4 m bgs		Depth to Groundwater 2.38 m bgs (March 23, 2018)
3	SS4			GSTH = 0 PID = 0	
	SS5			GSTH = 0 PID = 0	
4	SS6			GSTH = 0 PID = 0	Sand pack Screen
5	SS7			GSTH = 0 PID = 0	
6			6.00 End of sampling at 6.0 m bgs 93.50		

Bottom of hole at 6.00 m.

WELL NUMBER BH/MW203

CLIENT Barrie Drive-A-Car (1979) Ltd.
PROJECT NAME Phase Two ESA
PROJECT NUMBER G2S18006B
PROJECT LOCATION 41 & 43 Essa Road, Barrie, Ontario
DATE STARTED 3/19/18 **COMPLETED** 3/19/18
GROUND ELEVATION 99.68 m **HOLE SIZE** 15 cm
DRILLING CONTRACTOR Profile Drilling
GROUND WATER LEVELS:
DRILLING METHOD Direct Push/Hollow Stem Augers
AT TIME OF DRILLING ---
LOGGED BY DH **CHECKED BY** JS
AT END OF DRILLING ---
NOTES Vapour Measurements in ppm
AFTER DRILLING 2.39 m / Elev 97.29 m

DEPTH (m)	SAMPLE TYPE NUMBER	GRAPHIC LOG	MATERIAL DESCRIPTION	ENVIRONMENTAL DATA	WELL DIAGRAM
			Casing Top Elev: 99.64 (m)		
			0.05 Approximately 5 cm of asphalt 99.63		Flush mount casing
			FILL - Sand and gravel, dry to moist, loose, fine, trace organics, black/brown		
	SS1		0.60 99.08 SILTY SAND - Brown, fine, moist to wet, compact	GSTH = 0 PID = 1	
1					
	SS2			GSTH = 0 PID = 0	Bentonite hole plug
2			Greyish brown and saturated at 2.4 m bgs		
	SS3			GSTH = 0 PID = 0	Depth to Groundwater 2.39 m bgs (March 23, 2018)
3					
	SS4			GSTH = 0 PID = 0	
4					
	SS5			GSTH = 0 PID = 0	Sand pack Screen
5					
	SS6		End of sampling at 6.0 m bgs	GSTH = 25 PID = 1	
6			6.00 93.68		

Bottom of hole at 6.00 m.

GENERAL BH / TP / WELL ESSA BH LOGS.GPJ GINT STD CANADA LAB.GDT 4/2/18

WELL NUMBER BH/MW204

CLIENT Barrie Drive-A-Car (1979) Ltd.
PROJECT NAME Phase Two ESA
PROJECT NUMBER G2S18006B
PROJECT LOCATION 41 & 43 Essa Road, Barrie, Ontario
DATE STARTED 3/19/18 **COMPLETED** 3/19/18
GROUND ELEVATION 100.19 m **HOLE SIZE** 15 cm
DRILLING CONTRACTOR Profile Drilling
GROUND WATER LEVELS:
DRILLING METHOD Direct Push/Hollow Stem Augers
AT TIME OF DRILLING ---
LOGGED BY DH **CHECKED BY** JS
AT END OF DRILLING ---
NOTES Vapour Measurements in ppm
AFTER DRILLING 2.76 m / Elev 97.43 m

DEPTH (m)	SAMPLE TYPE NUMBER	GRAPHIC LOG	MATERIAL DESCRIPTION		ENVIRONMENTAL DATA	WELL DIAGRAM
						Casing Top Elev: 100.26 (m)
			0.10 Approximately 10 cm of asphalt	100.09		
	SS1		0.30 FILL - Sand and gravel, moist, loose, fine, some silt, brown	99.89	GSTH = 0 PID = 1	Flush mount casing
			SILTY SAND - Brown, fine, moist, compact			
	SS2				GSTH = 0 PID = 0	
1						
	SS3					Bentonite hole plug
			Greyish brown and saturated at 2.4 m bgs		GSTH = 0 PID = 0	
2						
						Depth to Groundwater 2.76 m bgs (March 23, 2018)
3	SS4				GSTH = 0 PID = 0	
4						
	SS5				GSTH = 0 PID = 0	Sand pack
						Screen
5						
	SS6		End of sampling at 6.0 m bgs		GSTH = 0 PID = 0	
6						
			6.14	94.05		

Bottom of hole at 6.14 m.

GENERAL BH / TP / WELL ESSA BH LOGS.GPJ GINT STD CANADA LAB.GDT 4/2/18

WELL NUMBER BH/MW205

CLIENT Barrie Drive-A-Car (1979) Ltd.
PROJECT NAME Phase Two ESA
PROJECT NUMBER G2S18006B
PROJECT LOCATION 41 & 43 Essa Road, Barrie, Ontario
DATE STARTED 3/20/18 **COMPLETED** 3/20/18
GROUND ELEVATION 100.4 m **HOLE SIZE** 15 cm
DRILLING CONTRACTOR Profile Drilling
GROUND WATER LEVELS:
DRILLING METHOD Direct Push/Hollow Stem Augers
AT TIME OF DRILLING ---
LOGGED BY DH **CHECKED BY** JS
AT END OF DRILLING ---
NOTES Vapour Measurements in ppm
AFTER DRILLING 2.83 m / Elev 97.57 m

DEPTH (m)	SAMPLE TYPE NUMBER	GRAPHIC LOG	MATERIAL DESCRIPTION	ENVIRONMENTAL DATA	WELL DIAGRAM
			0.10 Approximately 10 cm of asphalt 100.30		Casing Top Elev: 100.4 (m)
			FILL - Sand and gravel, dry to moist, compact, some silt, brown		Flush mount casing
			0.60 99.80		
	SS1		SILTY SAND - Brown, fine, moist, compact	GSTH = 0 PID = 0	
1					
	SS2			GSTH = 0 PID = 0	Bentonite hole plug
2			Greyish brown and saturated at 2.4 m bgs		
	SS3			GSTH = 0 PID = 1	Depth to Groundwater 2.83 m bgs (March 23, 2018)
3					
	SS4			GSTH = 0 PID = 0	Sand pack
4					Screen
	SS5			GSTH = 0 PID = 0	
5					
	SS6			GSTH = 0 PID = 0	
			End of sampling at 6.0 m bgs		
6			6.00 94.40		

Bottom of hole at 6.00 m.

GENERAL BH / TP / WELL ESSA BH LOGS.GPJ GINT STD CANADA LAB.GDT 4/2/18

WELL NUMBER BH/MW206

CLIENT Barrie Drive-A-Car (1979) Ltd.
PROJECT NAME Phase Two ESA
PROJECT NUMBER G2S18006B
PROJECT LOCATION 41 & 43 Essa Road, Barrie, Ontario
DATE STARTED 3/20/18 **COMPLETED** 3/20/18
GROUND ELEVATION 100.11 m **HOLE SIZE** 15 cm
DRILLING CONTRACTOR Profile Drilling
GROUND WATER LEVELS:
DRILLING METHOD Direct Push/Hollow Stem Augers
AT TIME OF DRILLING ---
LOGGED BY DH **CHECKED BY** JS
AT END OF DRILLING ---
NOTES Vapour Measurements in ppm
AFTER DRILLING 2.83 m / Elev 97.28 m

DEPTH (m)	SAMPLE TYPE NUMBER	GRAPHIC LOG	MATERIAL DESCRIPTION	ENVIRONMENTAL DATA	WELL DIAGRAM
			0.10 Approximately 10 cm of asphalt 100.01		Casing Top Elev: 100.11 (m)
	SS1		FILL - Sand and gravel, dry to moist, compact, some silt, brown	GSTH = 0 PID = 1	Flush mount casing
			0.60 99.51		
1	SS2		SILTY SAND - Brown, fine, moist, compact, trace organics	GSTH = 0 PID = 1	
	SS3			GSTH = 0 PID = 1	Bentonite hole plug
2			Greyish brown and saturated at 2.4 m bgs		
3	SS4			GSTH = 0 PID = 1	Depth to Groundwater 2.83 m bgs (March 23, 2018)
4	SS5			GSTH = 0 PID = 1	Sand pack Screen
5					
	SS6			GSTH = 0 PID = 1	
6			End of sampling at 6.0 m bgs		
			6.00 94.11		

Bottom of hole at 6.00 m.

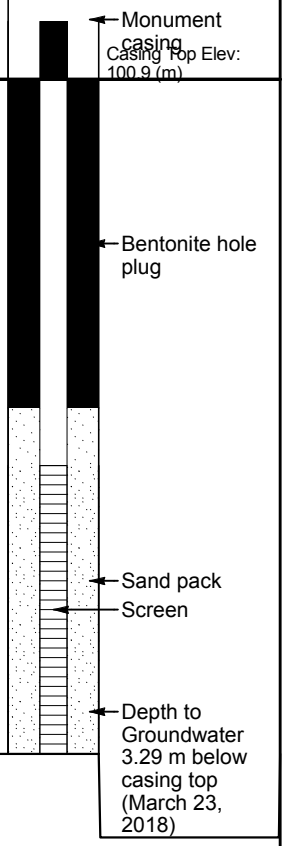
WELL NUMBER BH/MW207

CLIENT Barrie Drive-A-Car (1979) Ltd.
PROJECT NAME Phase Two ESA
PROJECT NUMBER G2S18006B
PROJECT LOCATION 41 & 43 Essa Road, Barrie, Ontario
DATE STARTED 3/20/18 **COMPLETED** 3/20/18
GROUND ELEVATION 100.28 m **HOLE SIZE** 15 cm
DRILLING CONTRACTOR Profile Drilling
GROUND WATER LEVELS:
DRILLING METHOD Direct Push/Hollow Stem Augers
AT TIME OF DRILLING ---
LOGGED BY DH **CHECKED BY** JS
AT END OF DRILLING ---
NOTES Vapour Measurements in ppm
AFTER DRILLING 3.29 m / Elev 96.99 m

DEPTH (m)	SAMPLE TYPE NUMBER	GRAPHIC LOG	MATERIAL DESCRIPTION	ENVIRONMENTAL DATA
			0.10 Approximately 10 cm of concrete 100.18	
	SS1		FILL - Sand, fine, trace silt, moist, loose, brown	GSTH = 0 PID = 1
			0.75 99.53	
1	SS2		SILTY SAND - Brown, fine, moist, loose, trace organics	GSTH = 0 PID = 0
2	SS3			GSTH = 0 PID = 0
			Greyish brown and saturated at 2.4 m bgs	
3	SS4		Petroleum odour between 2.4 and 3.3 m bgs	GSTH = 270 PID = 391
			Sample refusal at 3.3 m bgs	
			3.51 96.77	

Bottom of hole at 3.51 m.

WELL DIAGRAM



Appendix C:
Analytical Results Tables

Table 1: Soil Quality Results
Petroleum Hydrocarbons (F1-F4) and BTEX
Page 1 of 2

Parameter	Unit	Table 2 SCS Residential/Parkland/ Institutional Property Use - Coarse Grained	Sample Identification						
			BH101 SS6	BH102 SS4	BH103 SS6	BH104 SS5	BH105 SS5	BH123 SS6 (Dup of BH103 SS6)	BH103 SS8
Date Sampled			**8-Feb-18**	**8-Feb-18**	**9-Feb-18**	**9-Feb-18**	**9-Feb-18**	**9-Feb-18**	**9-Feb-18**
Depth			**4.5 - 5.1**	**2.25 - 2.85**	**3.75 - 4.35**	**3.0 - 3.6**	**3.0 - 3.6**	**3.75 - 4.35**	**6.0 - 6.6**
Benzene	ug/g	0.21	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.11	<0.0068
Ethylbenzene	ug/g	1.1	<0.018	0.156	0.041	<0.018	<0.018	<0.29	<0.018
Toluene	ug/g	2.3	<0.080	<0.080	<0.080	<0.080	<0.080	<1.3	<0.080
Xylenes	ug/g	3.1	<0.050	0.649	0.486	<0.050	<0.050	<0.58	<0.050
Petroleum Hydrocarbons F1	ug/g	55	<5.0	**156**	**536**	<5.0	<5.0	**1370**	17.2
Petroleum Hydrocarbons F2	ug/g	98	<10	**1990**	**344**	<10	<10	**244**	<10
Petroleum Hydrocarbons F3	ug/g	300	<50	**916**	<50	<50	<50	<50	<50
Petroleum Hydrocarbons F4	ug/g	2800	<50	<50	<50	60	<50	<50	<50

Ministry of the Environment and Climate Change Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act , dated April 2011.

Value in bold and shaded exceeds MOECC Table 2 SCS

Table 1: Soil Quality Results
Petroleum Hydrocarbons (F1-F4) and BTEX
Page 2 of 2

Parameter	Unit	Table 2 SCS Residential/Parkland/ Institutional Property Use - Coarse Grained	Sample Identifiation							
			BH201 SS1	BH202 SS4	BH203 SS3	BH204 SS4	BH205 SS3	BH206 SS4	BH207 SS4	BH223 SS3 (Dup of BH203 SS3)
Date Sampled			**19-Mar-18**	**19-Mar-18**	**19-Mar-18**	**19-Mar-18**	**20-Mar-18**	**20-Mar-18**	**20-Mar-18**	**19-Mar-18**
Depth			**6.0 - 6.9**	**2.4 - 3.0**	**2.4 - 3.0**	**2.4 - 3.6**	**2.4 - 3.6**	**2.4 - 3.6**	**2.4 - 3.3**	**2.4 - 3.0**
Benzene	ug/g	0.21	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	**<0.0068**	<0.0068
Ethylbenzene	ug/g	1.1	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	1.13	<0.018
Toluene	ug/g	2.3	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080
Xylenes	ug/g	3.1	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	**9.03**	<0.050
Petroleum Hydrocarbons F1	ug/g	55	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	**113**	<5.0
Petroleum Hydrocarbons F2	ug/g	98	<10	<10	<10	<10	<10	<10	65	<10
Petroleum Hydrocarbons F3	ug/g	300	<50	<50	<50	<50	<50	<50	<50	<50
Petroleum Hydrocarbons F4	ug/g	2800	<50	<50	<50	<50	<50	<50	<50	<50

Ministry of the Environment and Climate Change Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act , dated April 2011.

Value in bold and shaded exceeds MOECC Table 2 SCS

Table 2: Soil Quality Results
Volatile Organic Compounds (VOCs)

Parameter	Unit	Table 2 SCS Residential/Parkland/ Institutional Property Use - Coarse Grained	Sample Identification			
			BH102 SS9	BH103 SS6	BH104 SS7	BH105 SS8
Date Sampled			**8-Feb-18**	**9-Feb-18**	**9-Feb-18**	**9-Feb-18**
Depth			**6.0 - 6.6**	**3.75 - 4.35**	**6.0 - 6.6**	**6.0 - 6.6**
Acetone	ug/g	16	<0.50	<0.50	<0.50	<0.50
Benzene	ug/g	0.21	<0.0068	<0.0068	<0.0068	<0.0068
Bromodichloromethane	ug/g	1.5	<0.050	**<2.1**	<0.050	<0.050
Bromoform	ug/g	0.27	<0.050	<0.050	<0.050	<0.050
Bromomethane	ug/g	0.05	<0.050	<0.050	<0.050	<0.050
Carbon tetrachloride	ug/g	0.05	<0.050	<0.050	<0.050	<0.050
Chlorobenzene	ug/g	2.4	<0.050	<0.050	<0.050	<0.050
Dibromochloromethane	ug/g	2.3	<0.050	<0.050	<0.050	<0.050
Chloroform	ug/g	0.05	<0.050	**<0.45**	<0.050	<0.050
1,2-Dibromoethane (Ethylene Dibromide)	ug/g	0.05	<0.050	**<0.32**	<0.050	<0.050
1,2-Dichlorobenzene	ug/g	1.2	<0.050	<0.050	<0.050	<0.050
1,3-Dichlorobenzene	ug/g	4.8	<0.050	<0.050	<0.050	<0.050
1,4-Dichlorobenzene	ug/g	0.083	<0.050	<0.050	<0.050	<0.050
Dichlorodifluoromethane	ug/g	16	<0.050	<0.050	<0.050	<0.050
1,1-Dichloroethane	ug/g	0.47	<0.050	<0.050	<0.050	<0.050
1,2-Dichloroethane	ug/g	0.05	<0.050	<0.050	<0.050	<0.050
1,1-Dichloroethylene	ug/g	0.05	<0.050	<0.050	<0.050	<0.050
cis-1,2-Dichloroethylene	ug/g	1.9	<0.050	<0.050	<0.050	<0.050
trans-1,2-Dichloroethylene	ug/g	0.084	<0.050	<0.050	<0.050	<0.050
Methylene Chloride	ug/g	0.1	<0.050	<0.050	<0.050	<0.050
1,2-Dichloropropane	ug/g	0.05	<0.050	<0.050	<0.050	<0.050
1,3-Dichloropropene (cis & trans)	ug/g	0.05	<0.042	<0.042	<0.042	<0.042
Ethylbenzene	ug/g	1.1	<0.018	0.041	<0.018	<0.018
n-Hexane	ug/g	2.8	<0.050	1.83	<0.050	<0.050
Methyl Ethyl Ketone	ug/g	16	<0.50	<0.75	<0.50	<0.50
Methyl Isobutyl Ketone	ug/g	1.7	<0.50	<0.70	<0.50	<0.50
MTBE	ug/g	0.75	<0.050	<0.050	<0.050	<0.050
Styrene	ug/g	0.7	<0.050	<0.050	<0.050	<0.050
1,1,1,2-Tetrachloroethane	ug/g	0.058	<0.050	<0.050	<0.050	<0.050
1,1,2,2-Tetrachloroethane	ug/g	0.05	**<0.060**	**<0.20**	<0.050	<0.050
Tetrachloroethylene	ug/g	0.28	<0.050	<0.050	<0.050	<0.050
Toluene	ug/g	2.3	<0.080	<0.080	<0.080	<0.080
1,1,1-Trichloroethane	ug/g	0.38	<0.050	<0.050	<0.050	<0.050
1,1,2-Trichloroethane	ug/g	0.05	<0.050	**<1.7**	<0.050	<0.050
Trichloroethylene	ug/g	0.061	<0.010	<0.010	<0.010	<0.010
Trichlorofluoromethane	ug/g	4	<0.050	<0.050	<0.050	<0.050
Vinyl chloride	ug/g	0.02	<0.020	<0.020	<0.020	<0.020
Xylenes (Total)	ug/g	3.1	<0.050	0.486	<0.050	<0.050

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Value in bold - Detection Limite for result exceeds Guideline Limit

Table 3: Soil Quality Results
Metals and Inorganics

Parameter	Unit	Table 2 SCS Residential/Parkland/ Institutional Property Use - Coarse Grained	Sample Identification			
			BH101 SS1	BH102 SS2	BH102 SS4	BH103 SS2
Date Sampled			**8-Feb-18**	**8-Feb-18**	**8-Feb-18**	**9-Feb-18**
Depth			**0.1 - 0.6**	**0.75 - 1.35**	**2.25 - 2.85**	**0.75 - 1.35**
Antimony	ug/g	7.5	<1.0	<1.0	<1.0	<1.0
Arsenic	ug/g	18	11.8	1.1	<1.0	1.3
Barium	ug/g	390	148	19.3	6.9	27.9
Beryllium	ug/g	4	<0.50	<0.50	<0.50	<0.50
Boron (Hot Water Extractable)	ug/g	1.5	0.24	<0.10	<0.10	0.18
Boron	ug/g	120	6	<5.0	<5.0	<5.0
Cadmium	ug/g	1.2	<0.50	<0.50	<0.50	<0.50
Chromium	ug/g	160	18.4	8.8	7.1	12
Cobalt	ug/g	22	3.9	2.2	1.5	2.7
Copper	ug/g	140	18	2.1	1.9	2.1
Lead	ug/g	120	115	2.2	<1.0	1.5
Mercury	ug/g	0.27	0.0811	0.0145	<0.0050	0.0133
Molybdenum	ug/g	6.9	<1.0	<1.0	<1.0	<1.0
Nickel	ug/g	100	7.5	4.4	2.5	5.2
Selenium	ug/g	2.4	1.7	<1.0	<1.0	<1.0
Silver	ug/g	20	<0.20	<0.20	<0.20	<0.20
Thallium	ug/g	1	<0.50	<0.50	<0.50	<0.50
Uranium	ug/g	23	<1.0	<1.0	<1.0	<1.0
Vanadium	ug/g	86	45.3	21.3	22.4	29.1
Zinc	ug/g	340	187	12.5	5.5	10
pH	pH units	-	7.50	7.50	8.00	7.46
Cyanide	ug/g	0.051	<0.050	<0.050	<0.050	<0.050
Calcium	mg/L	-	16.4	4.1	2.2	3.3
Magnesium	mg/L	-	<1.0	<1.0	<1.0	1.6
Sodium	mg/L	-	2.4	9.8	1.9	15.2
Chromium, Hexavalent	ug/g	8	<0.20	0.44	<0.20	0.25
Sodium Adsorption Ratio	SAR	5	0.16	1.34	0.35	1.73
Conductivity	mS/cm	0.7	0.193	0.0927	0.0748	0.200

Ministry of the Environment and Climate Change Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act , dated April 2011.

Table 4: Soil Quality Results
Polycyclic Aromatic Hydrocarbons (PAHs)
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Parameter	Unit	Table 2 SCS Residential/Parkland/ Institutional Property Use - Coarse Grained	Sample Identification					
			BH102 SS4	BH103 SS6	BH103 SS8	BH201 SS1	BH202 SS4	BH203 SS3
Date Sampled			**8-Feb-18**	**9-Feb-18**	**9-Feb-18**	**19-Mar-18**	**19-Mar-18**	**19-Mar-18**
Depth			**2.25 - 2.85**	**3.75 - 4.35**	**6.0 - 6.6**	**6.0 - 6.9**	**2.4 - 3.0**	**2.4 - 3.0**
Acenapthene	ug/g	7.9	0.766	<0.050	<0.050	<0.050	<0.050	<0.050
Acenaphthylene	ug/g	0.15	**0.176**	**<0.050**	<0.050	<0.050	<0.050	<0.050
Anthracene	ug/g	0.67	0.207	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(a)anthracene	ug/g	0.5	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(a)pyrene	ug/g	0.3	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(b)fluoranthene	ug/g	0.78	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(g,h,i)perylene	ug/g	6.6	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(k)fluoranthene	ug/g	0.78	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chrysene	ug/g	7	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Dibenzo(ah)anthracene	ug/g	0.1	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Fluoranthene	ug/g	0.69	0.06	<0.050	<0.050	<0.050	<0.050	<0.050
Fluorene	ug/g	62	1.320	0.051	<0.050	<0.050	<0.050	<0.050
Indeno(1,2,3-cd)pyrene	ug/g	0.38	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1+2-Methylnaphthalenes	ug/g	0.99	**4.13**	**11.2**	<0.042	<0.042	<0.042	<0.042
1-Methylnaphthalene	ug/g	0.99	**1.55**	**3.44**	<0.030	<0.030	<0.030	<0.030
2-Methylnaphthalene	ug/g	0.99	**2.58**	**7.75**	<0.030	<0.030	<0.030	<0.030
Naphthalene	ug/g	0.6	0.477	3.010	<0.013	<0.013	<0.013	<0.013
Phenanthrene	ug/g	6.2	3.060	0.072	<0.046	<0.046	<0.046	<0.046
Pyrene	ug/g	78	0.21	<0.050	<0.050	<0.050	<0.050	<0.050

Ministry of the Environment and Climate Change Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act , dated April 2011.

Value in bold and shaded exceeds the MOECC Table 2 SCS

Table 4: Soil Quality Results
Polycyclic Aromatic Hydrocarbons (PAHs)
Page 2 of 2

Parameter	Unit	Table 2 SCS Residential/Parkland/ Institutional Property Use - Coarse Grained	Sample Identification				
			BH204 SS4	BH205 SS3	BH206 SS4	BH207 SS4	BH223 SS3 (Dup of BH203 SS3)
Date Sampled			**19-Mar-18**	**20-Mar-18**	**20-Mar-18**	**20-Mar-18**	**19-Mar-18**
Depth			**2.4 - 3.6**	**2.4 - 3.6**	**2.4 - 3.6**	**2.4 - 3.3**	**2.4 - 3.0**
Acenapthene	ug/g	7.9	<0.050	<0.050	<0.050	<0.050	<0.050
Acenaphthylene	ug/g	0.15	<0.050	<0.050	<0.050	<0.050	<0.050
Anthracene	ug/g	0.67	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(a)anthracene	ug/g	0.5	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(a)pyrene	ug/g	0.3	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(b)fluoranthene	ug/g	0.78	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(g,h,i)perylene	ug/g	6.6	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(k)fluoranthene	ug/g	0.78	<0.050	<0.050	<0.050	<0.050	<0.050
Chrysene	ug/g	7	<0.050	<0.050	<0.050	<0.050	<0.050
Dibenzo(ah)anthracene	ug/g	0.1	<0.050	<0.050	<0.050	<0.050	<0.050
Fluoranthene	ug/g	0.69	<0.050	<0.050	<0.050	<0.050	<0.050
Fluorene	ug/g	62	<0.050	<0.050	<0.050	<0.050	<0.050
Indeno(1,2,3-cd)pyrene	ug/g	0.38	<0.050	<0.050	<0.050	<0.050	<0.050
1+2-Methylnaphthalenes	ug/g	0.99	<0.042	<0.042	<0.042	**3.32**	<0.042
1-Methylnaphthalene	ug/g	0.99	<0.030	<0.030	<0.030	**1.05**	<0.030
2-Methylnaphthalene	ug/g	0.99	<0.030	<0.030	<0.030	**2.27**	<0.030
Naphthalene	ug/g	0.6	<0.013	<0.013	<0.013	**1.27**	<0.013
Phenanthrene	ug/g	6.2	<0.046	<0.046	<0.046	<0.046	<0.046
Pyrene	ug/g	78	<0.050	<0.050	<0.050	<0.050	<0.050

Ministry of the Environment and Climate Change Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act , dated April 2011.

Value in bold and shaded exceeds the MOECC Table 2 SCS

Table 5: Groundwater Quality Results
PHCs and BTEX
Page 1 of 2

Parameter	Unit	Table 2 SCS All Types of Property Use - Coarse	Sample Identification						
			MW101	MW102	MW102	MW103	MW103	MW105	MW122 (Dup of MW102)
Date Sampled			**13-Feb-18**	**13-Feb-18**	**23-Mar-18**	**13-Feb-18**	**23-Mar-18**	**13-Feb-18**	**13-Feb-18**
Benzene	µg/L	5	<0.50	<0.50	<0.50	<0.85	2.53	<0.50	<0.50
Ethylbenzene	µg/L	2.4	<0.50	0.67	<0.50	**171**	**109**	<0.50	0.92
Toluene	µg/L	24	<0.50	<0.55	0.50	**35.1**	**107**	<0.50	<0.70
Xylenes	µg/L	300	<0.50	2.3	2.93	**1530**	**844**	<0.50	2.1
Petroleum Hydrocarbons F1	µg/L	750	<25	**14100**	**3540**	**11100**	**8860**	<25	**6440**
Petroleum Hydrocarbons F2	µg/L	150	<100	**44900**	**9790**	**5760**	**3560**	<100	**38400**
Petroleum Hydrocarbons F3	µg/L	500	<250	**19900**	**5550**	<250	<250	<250	**14900**
Petroleum Hydrocarbons F4	µg/L	500	<250	<250	<250	<250	<250	<250	<250

Ministry of the Environment and Climate Change Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act , dated April 2011.

Value in bold and shaded exceeds MOECC Table 2 SCS

Table 5: Groundwater Quality Results
PHCs and BTEX
Page 2 of 2

Parameter	Unit	Table 2 SCS All Types of Property Use - Coarse	MW201	MW202	MW203	MW204	MW205	MW206	MW207	MW221 (Dup of MW201)
Date Sampled			**23-Mar-18**	**23-Mar-18**	**23-Mar-18**	**23-Mar-18**	**23-Mar-18**	**23-Mar-18**	**23-Mar-18**	**23-Mar-18**
Benzene	µg/L	5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Ethylbenzene	µg/L	2.4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**694**	<0.50
Toluene	µg/L	24	<0.50	<0.50	<0.50	<0.50	0.68	<0.50	23.1	<0.50
Xylenes	µg/L	300	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**5080**	<0.50
Petroleum Hydrocarbons F1	µg/L	750	<25	<25	<25	<25	<25	<25	**15400**	<25
Petroleum Hydrocarbons F2	µg/L	150	<100	<100	<100	<100	<100	<100	**8340**	<100
Petroleum Hydrocarbons F3	µg/L	500	<250	<250	<250	<250	<250	<250	<250	<250
Petroleum Hydrocarbons F4	µg/L	500	<250	<250	<250	<250	<250	<250	<250	<250

Ministry of the Environment and Climate Change Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act , dated April 2011.

Value in bold and shaded exceeds MOECC Table 2 SCS

Table 6: Groundwater Quality Results
Volatile Organic Compounds

Parameter	Unit	Table 2 SCS All Types of Property Use - Coarse	Sample Identification				
			MW101	MW102	MW103	MW105	MW122 (Dup of MW102)
Date Sampled			**13-Feb-18**	**13-Feb-18**	**13-Feb-18**	**13-Feb-18**	**13-Feb-18**
Acetone	µg/L	2700	<30	<30	<30	<30	<30
Benzene	µg/L	2	<0.50	<0.50	<0.85	<0.50	<0.50
Bromodichloromethane	µg/L	16	<2.0	**<39**	**<18**	<2.0	**<42**
Bromoform	µg/L	25	<5.0	<5.0	<5.0	<5.0	<5.0
Bromomethane	µg/L	0.89	<0.50	<0.50	<0.50	<0.50	<0.50
Carbon tetrachloride	µg/L	0.79	<0.20	<0.20	<0.20	<0.20	<0.20
Chlorobenzene	µg/L	30	<0.50	<0.50	<0.50	<0.50	<0.95
Dibromochloromethane	µg/L	25	<2.0	<2.0	<2.0	<2.0	<2.0
Chloroform	µg/L	2.4	<1.0	**<4.2**	**<21**	<1.0	**<6.6**
1,2-Dibromoethane	µg/L	0.2	<0.20	**<1.3**	**<1.8**	<0.20	**<2.6**
1,2-Dichlorobenzene	µg/L	3	<0.50	**<10**	<0.50	<0.50	**<13**
1,3-Dichlorobenzene	µg/L	59	<0.50	<10	<0.50	<0.50	<13
1,4-Dichlorobenzene	µg/L	1	<0.50	<10	<0.50	<0.50	<13
Dichlorodifluoromethane	µg/L	590	<2.0	<2.0	<2.0	<2.0	<2.0
1,1-Dichloroethane	µg/L	5	<0.50	<0.50	<0.50	<0.50	<0.50
1,2-Dichloroethane	µg/L	1.6	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethylene	µg/L	1.6	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,2-Dichloroethylene	µg/L	1.6	<0.50	<0.50	**<2.5**	<0.50	<0.50
trans-1,2-Dichloroethylene	µg/L	1.6	<0.50	<0.50	<0.50	<0.50	<0.50
Methylene Chloride	µg/L	50	<5.0	<5.0	<5.0	<5.0	<5.0
1,2-Dichloropropane	µg/L	5	<0.50	<0.50	<0.50	<0.50	<0.50
1,3-Dichloropropene (cis & trans)	µg/L	0.5	<0.50	<0.50	**<1.0**	<0.50	<0.50
Ethylbenzene	µg/L	2.4	<0.50	0.67	**171**	<0.50	0.92
n-Hexane	µg/L	51	<0.50	16.3	**66**	<0.50	14.5
Methyl Ethyl Ketone	µg/L	1800	<20	<20	<56	<20	<20
Methyl Isobutyl Ketone	µg/L	640	<20	<20	<20	<20	<20
MTBE	µg/L	15	<2.0	<2.0	<2.0	<2.0	<2.0
Styrene	µg/L	5.4	<0.50	<0.50	1.09	<0.50	<0.50
1,1,1,2-Tetrachloroethane	µg/L	1.1	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2,2-Tetrachloroethane	µg/L	1	<0.50	**<15**	**<4.4**	<0.50	**<29**
Tetrachloroethylene	µg/L	1.6	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	µg/L	24	<0.50	<0.55	**35.1**	<0.50	<0.70
1,1,1-Trichloroethane	µg/L	200	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	µg/L	4.7	<0.50	**<12**	<3.2	<0.50	<1.5
Trichloroethylene	µg/L	1.6	<0.50	<0.50	<0.50	<0.50	<0.50
Trichlorofluoromethane	µg/L	150	<5.0	<5.0	<5.0	<5.0	<5.0
Vinyl chloride	µg/L	0.5	<0.50	<0.50	<0.50	<0.50	<0.50
Xylenes	µg/L	300	<0.50	2.3	**1530**	<0.50	2.1

Ministry of the Environment and Climate Change Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act , dated April 2011.
Value in bold and shaded exceeds MOECC Table 2 SCS

Table 7: Groundwater Quality Results
Metals and Inorganics

Parameter	Unit	Table 2 SCS All Types of Property Use - Coarse	Sample Identification		
			MW102	MW103	MW122 (Dup of MW102)
Date Sampled			**13-Feb-18**	**13-Feb-18**	**13-Feb-18**
Antimony	µg/L	6	<0.10	<1.0	<0.10
Arsenic	µg/L	25	0.41	<1.0	0.46
Barium	µg/L	1000	232	358	236
Beryllium	µg/L	4	<0.10	<1.0	<0.10
Boron	µg/L	5000	77	<100	76
Cadmium	µg/L	2.7	<0.010	0.143	<0.010
Chromium	µg/L	50	<0.50	<5.0	<0.50
Cobalt	µg/L	3.8	2.63	1.5	2.63
Copper	µg/L	87	0.62	<2.0	1.39
Lead	µg/L	10	0.211	4.03	0.27
Mercury	µg/L	0.29	<0.010	<0.010	<0.010
Molybdenum	µg/L	70	1.44	1.7	1.36
Nickel	µg/L	100	2.1	<5.0	2.13
Selenium	µg/L	10	2.19	0.7	1.95
Silver	µg/L	1.5	<0.050	<0.50	<0.050
Sodium	µg/L	490000	112000	398000	101000
Thallium	µg/L	2	<0.010	<0.10	<0.010
Uranium	µg/L	20	1.21	2.28	1.21
Vanadium	µg/L	6.2	0.82	<5.0	0.84
Zinc	µg/L	1100	1.7	<10	3
Conductivity	mS/cm	-	1.32	2.86	1.33
pH	pH units	-	7.24	7.63	7.4
Chloride	µg/L	790000	135000	730000	155000
Cyanide	µg/L	66	<2.0	<2.0	<2.0
Chromium, Hexavalent	µg/L	25	<1.0	<1.0	<1.0

MOECC Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, dated April 2011.

Table 8: Groundwater Quality Results
Polycyclic Aromatic Hydrocarbons
Page 1 of 2

Parameter	Unit	Table 2 SCS All Types of Property Use - Coarse	Sample Identification						
			MW102	MW102	MW103	MW103	MW122 (Dup of MW102)	MW201	MW202
Date Sampled			**13-Feb-18**	**23-Mar-18**	**13-Feb-18**	**23-Mar-18**	**13-Feb-18**	**23-Mar-18**	**23-Mar-18**
Acenaphthene	µg/L	4.1	**7.88**	2.59	0.319	0.272	**<11**	<0.020	<0.020
Acenaphthylene	µg/L	1	**4.63**	0.894	0.151	0.121	**4.28**	<0.020	<0.020
Anthracene	µg/L	2.4	**5.41**	2.01	0.052	0.038	**5.8**	<0.020	<0.020
Benzo(a)anthracene	µg/L	1	<0.40	0.072	<0.020	<0.020	0.152	<0.020	<0.020
Benzo(a)pyrene	µg/L	0.01	**<0.40**	<0.010	<0.010	<0.010	**<0.040**	<0.010	<0.010
Benzo(b)fluoranthene	µg/L	0.1	**<0.40**	<0.020	<0.020	<0.020	0.07	<0.020	<0.020
Benzo(g,h,i)perylene	µg/L	0.2	**<0.40**	<0.020	<0.020	<0.020	0.044	<0.020	<0.020
Benzo(k)fluoranthene	µg/L	0.1	**<0.40**	<0.020	<0.020	<0.020	<0.040	<0.020	<0.020
Chrysene	µg/L	0.1	**0.43**	**0.133**	<0.020	<0.020	**0.276**	<0.020	<0.020
Dibenzo(ah)anthracene	µg/L	0.2	**<0.40**	<0.020	<0.020	<0.020	<0.040	<0.020	<0.020
Fluoranthene	µg/L	0.41	**1.06**	0.236	0.064	0.05	**1.01**	<0.020	<0.020
Fluorene	µg/L	120	26.7	7.04	0.484	0.436	27.5	<0.020	<0.020
Indeno(1,2,3-cd)pyrene	µg/L	0.2	**<0.40**	<0.020	<0.020	<0.020	0.04	<0.020	<0.020
1+2-Methylnaphthalenes	µg/L	3.2	**169**	**30.6**	**253**	**164**	**157**	<0.028	<0.028
1-Methylnaphthalene	µg/L	3.2	**47.1**	**7.05**	**79.9**	**53.9**	**41.5**	<0.020	<0.020
2-Methylnaphthalene	µg/L	3.2	**122**	**23.5**	**173**	**110**	**115**	<0.020	<0.020
Naphthalene	µg/L	11	<8.0	<3.5	**311**	**92.6**	**<14**	<0.050	<0.050
Phenanthrene	µg/L	1	**70.3**	**26.8**	0.712	0.541	**70.2**	<0.020	<0.020
Pyrene	µg/L	4.1	**4.12**	1.16	0.098	0.09	3.33	<0.020	<0.020

MOECC Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, dated April 2011.
Value in bold and shaded exceeds MOECC Table 2 SCS

Table 8: Groundwater Quality Results
Polycyclic Aromatic Hydrocarbons
Page 2 of 2

Parameter	Unit	Table 2 SCS All Types of Property Use - Coarse	Sample Identification					
			MW203	MW204	MW205	MW206	MW207	MW221 (Dup of MW201)
Date Sampled			**23-Mar-18**	**23-Mar-18**	**23-Mar-18**	**23-Mar-18**	**23-Mar-18**	**23-Mar-18**
Acenaphthene	µg/L	4.1	<0.020	<0.020	<0.020	<0.020	0.696	<0.020
Acenaphthylene	µg/L	1	<0.020	<0.020	<0.020	<0.020	0.246	<0.020
Anthracene	µg/L	2.4	<0.020	<0.020	<0.020	<0.020	0.065	<0.020
Benzo(a)anthracene	µg/L	1	<0.020	<0.020	<0.020	<0.020	0.027	<0.020
Benzo(a)pyrene	µg/L	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(b)fluoranthene	µg/L	0.1	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(g,h,i)perylene	µg/L	0.2	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(k)fluoranthene	µg/L	0.1	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Chrysene	µg/L	0.1	<0.020	<0.020	<0.020	<0.020	0.026	<0.020
Dibenzo(ah)anthracene	µg/L	0.2	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Fluoranthene	µg/L	0.41	<0.020	<0.020	<0.020	<0.020	0.09	<0.020
Fluorene	µg/L	120	<0.020	<0.020	<0.020	<0.020	0.996	<0.020
Indeno(1,2,3-cd)pyrene	µg/L	0.2	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
1+2-Methylnaphthalenes	µg/L	3.2	<0.028	<0.028	<0.028	<0.028	**536**	<0.028
1-Methylnaphthalene	µg/L	3.2	<0.020	<0.020	<0.020	<0.020	**178**	<0.020
2-Methylnaphthalene	µg/L	3.2	<0.020	<0.020	<0.020	<0.020	**357**	<0.020
Naphthalene	µg/L	11	<0.050	<0.050	<0.050	<0.050	**826**	<0.050
Phenanthrene	µg/L	1	<0.020	<0.020	<0.020	<0.020	0.966	<0.020
Pyrene	µg/L	4.1	<0.020	<0.020	<0.020	<0.020	0.133	<0.020

MOECC Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, dated April 2011.
Value in bold and shaded exceeds MOECC Table 2 SCS

Appendix D:
Certificates of Analysis

G2S ENVIRONMENTAL CONSULTING, INC.
ATTN: DANA HASLETT
3370 S SERVICE ROAD
SUITE 107
BURLINGTON ON L7N 3M6

Date Received: 13-FEB-18
Report Date: 21-FEB-18 14:26 (MT)
Version: FINAL

Client Phone: 905-331-3735

Certificate of Analysis

Lab Work Order #: L2056150

Project P.O. #: NOT SUBMITTED
Job Reference: G2S18006
C of C Numbers: 17-637677
Legal Site Desc:

Mathy Mahadeva
Account Manager

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Summary of Guideline Exceedances

Guideline ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Soil-Res/Park/Inst. Property Use (Coarse)						
L2056150-4	BH102 SS4	Hydrocarbons	F1 (C6-C10)	156	55	ug/g
			F1-BTEX	156	55	ug/g
			F2 (C10-C16)	1990	98	ug/g
			F3 (C16-C34)	916	300	ug/g
		Polycyclic Aromatic Hydrocarbons	Acenaphthylene	0.176	0.15	ug/g
			1+2-Methylnaphthalenes	4.13	0.99	ug/g
			1-Methylnaphthalene	1.55	0.99	ug/g
			2-Methylnaphthalene	2.58	0.99	ug/g
L2056150-5	BH102 SS9	Volatile Organic Compounds	1,1,2,2-Tetrachloroethane	<0.060	0.05	ug/g
L2056150-7	BH103 SS6	Volatile Organic Compounds	Chloroform	<0.45	0.05	ug/g
			1,2-Dibromoethane	<0.32	0.05	ug/g
			1,1,2,2-Tetrachloroethane	<0.20	0.05	ug/g
			1,1,2-Trichloroethane	<1.7	0.05	ug/g
		Hydrocarbons	F1 (C6-C10)	536	55	ug/g
			F1-BTEX	535	55	ug/g
			F2 (C10-C16)	344	98	ug/g
		Polycyclic Aromatic Hydrocarbons	1+2-Methylnaphthalenes	11.2	0.99	ug/g
			1-Methylnaphthalene	3.44	0.99	ug/g
			2-Methylnaphthalene	7.75	0.99	ug/g
			Naphthalene	3.01	0.6	ug/g
L2056150-12	BH123 SS6	Hydrocarbons	F1 (C6-C10)	1370	55	ug/g
			F1-BTEX	1370	55	ug/g
			F2 (C10-C16)	244	98	ug/g

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Physical Tests - SOIL

		Guide Limits									
Lab ID				L2056150-1	L2056150-2	L2056150-3	L2056150-4	L2056150-5	L2056150-6	L2056150-7	L2056150-8	L2056150-9
Sample Date				08-FEB-18	08-FEB-18	08-FEB-18	08-FEB-18	08-FEB-18	09-FEB-18	09-FEB-18	09-FEB-18	09-FEB-18
Sample ID				BH101 SS1	BH101 SS6	BH102 SS2	BH102 SS4	BH102 SS9	BH103 SS2	BH103 SS6	BH104 SS5	BH104 SS7
Analyte	**Unit**	**#1**	**#2**									
Conductivity	mS/cm	0.7	-	0.193		0.0927	0.0748		0.200			
% Moisture	%	-	-	15.4	15.9	16.6	14.0	15.7	7.38	18.1	16.3	17.6
pH	pH units	-	-	7.50	8.06	7.50	8.00		7.46	7.92		

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Physical Tests - SOIL

		Guide Limits				
Lab ID				L2056150-10	L2056150-11	L2056150-12
Sample Date				09-FEB-18	09-FEB-18	09-FEB-18
Sample ID				BH105 SS5	BH105 SS8	BH123 SS6
Analyte	**Unit**	**#1**	**#2**			
Conductivity	mS/cm	0.7	-			
% Moisture	%	-	-	14.5	17.7	15.8
pH	pH units	-	-			

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Particle Size - SOIL

		Guide Limits		
Analyte	**Unit**	**#1**	**#2**	
Lab ID				L2056150-2
Sample Date				08-FEB-18
Sample ID				BH101 SS6
% >75um	%	-	-	94.1

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Cyanides - SOIL

		Guide Limits					
				Lab ID	L2056150-1	L2056150-3	L2056150-4	L2056150-6
				Sample Date	08-FEB-18	08-FEB-18	08-FEB-18	09-FEB-18
				Sample ID	BH101 SS1	BH102 SS2	BH102 SS4	BH103 SS2
Analyte	Unit	#1	#2					
Cyanide, Weak Acid Diss	ug/g	0.051	-		<0.050	<0.050	<0.050	<0.050

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Saturated Paste Extractables - SOIL

		Guide Limits					
Lab ID				L2056150-1	L2056150-3	L2056150-4	L2056150-6
Sample Date				08-FEB-18	08-FEB-18	08-FEB-18	09-FEB-18
Sample ID				BH101 SS1	BH102 SS2	BH102 SS4	BH103 SS2
Analyte	**Unit**	**#1**	**#2**				
SAR	SAR	5	-	0.16 SAR:M	1.34 SAR:M	0.35 SAR:M	1.73
Calcium (Ca)	mg/L	-	-	16.4	4.1	2.2	3.3
Magnesium (Mg)	mg/L	-	-	<1.0	<1.0	<1.0	1.6
Sodium (Na)	mg/L	-	-	2.4	9.8	1.9	15.2

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

ANALYTICAL REPORT

Metals - SOIL

			Lab ID	L2056150-1	L2056150-3	L2056150-4	L2056150-6
			Sample Date	08-FEB-18	08-FEB-18	08-FEB-18	09-FEB-18
			Sample ID	BH101 SS1	BH102 SS2	BH102 SS4	BH103 SS2
		Guide Limits					
Analyte	Unit	#1	#2				
Antimony (Sb)	ug/g	7.5	-	<1.0	<1.0	<1.0	<1.0
Arsenic (As)	ug/g	18	-	11.8	1.1	<1.0	1.3
Barium (Ba)	ug/g	390	-	148	19.3	6.9	27.9
Beryllium (Be)	ug/g	4	-	<0.50	<0.50	<0.50	<0.50
Boron (B)	ug/g	120	-	6.0	<5.0	<5.0	<5.0
Boron (B), Hot Water Ext.	ug/g	1.5	-	0.24	<0.10	<0.10	0.18
Cadmium (Cd)	ug/g	1.2	-	<0.50	<0.50	<0.50	<0.50
Chromium (Cr)	ug/g	160	-	18.4	8.8	7.1	12.0
Cobalt (Co)	ug/g	22	-	3.9	2.2	1.5	2.7
Copper (Cu)	ug/g	140	-	18.0	2.1	1.9	2.1
Lead (Pb)	ug/g	120	-	115	2.2	<1.0	1.5
Mercury (Hg)	ug/g	0.27	-	0.0811	0.0145	<0.0050	0.0133
Molybdenum (Mo)	ug/g	6.9	-	<1.0	<1.0	<1.0	<1.0
Nickel (Ni)	ug/g	100	-	7.5	4.4	2.5	5.2
Selenium (Se)	ug/g	2.4	-	1.7	<1.0	<1.0	<1.0
Silver (Ag)	ug/g	20	-	<0.20	<0.20	<0.20	<0.20
Thallium (Tl)	ug/g	1	-	<0.50	<0.50	<0.50	<0.50
Uranium (U)	ug/g	23	-	<1.0	<1.0	<1.0	<1.0
Vanadium (V)	ug/g	86	-	45.3	21.3	22.4	29.1
Zinc (Zn)	ug/g	340	-	187	12.5	5.5	10.0

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Speciated Metals - SOIL

		Guide Limits					
			Lab ID	L2056150-1	L2056150-3	L2056150-4	L2056150-6
			Sample Date	08-FEB-18	08-FEB-18	08-FEB-18	09-FEB-18
			Sample ID	BH101 SS1	BH102 SS2	BH102 SS4	BH103 SS2
Analyte	Unit	#1	#2				
Chromium, Hexavalent	ug/g	8	-	<0.20	0.44	<0.20	0.25

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Volatile Organic Compounds - SOIL

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID	L2056150-2	L2056150-4	L2056150-5	L2056150-7	L2056150-8	L2056150-9	L2056150-10	L2056150-11	L2056150-12
				Sample Date	08-FEB-18	08-FEB-18	08-FEB-18	09-FEB-18	09-FEB-18	09-FEB-18	09-FEB-18	09-FEB-18	09-FEB-18
				Sample ID	BH101 SS6	BH102 SS4	BH102 SS9	BH103 SS6	BH104 SS5	BH104 SS7	BH105 SS5	BH105 SS8	BH123 SS6
Acetone	ug/g	16	-			<0.50	<0.50		<0.50		<0.50	
Benzene	ug/g	0.21	-	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.11 DLI
Bromodichloromethane	ug/g	13	-			<0.050	<2.1 DLVH		<0.050		<0.050	
Bromoform	ug/g	0.27	-			<0.050	<0.050		<0.050		<0.050	
Bromomethane	ug/g	0.05	-			<0.050	<0.050		<0.050		<0.050	
Carbon tetrachloride	ug/g	0.05	-			<0.050	<0.050		<0.050		<0.050	
Chlorobenzene	ug/g	2.4	-			<0.050	<0.050		<0.050		<0.050	
Dibromochloromethane	ug/g	9.4	-			<0.050	<0.050		<0.050		<0.050	
Chloroform	ug/g	0.05	-			<0.050	<0.45 DLVH		<0.050		<0.050	
1,2-Dibromoethane	ug/g	0.05	-			<0.050	<0.32 DLVH		<0.050		<0.050	
1,2-Dichlorobenzene	ug/g	3.4	-			<0.050	<0.050		<0.050		<0.050	
1,3-Dichlorobenzene	ug/g	4.8	-			<0.050	<0.050		<0.050		<0.050	
1,4-Dichlorobenzene	ug/g	0.083	-			<0.050	<0.050		<0.050		<0.050	
Dichlorodifluoromethane	ug/g	16	-			<0.050	<0.050		<0.050		<0.050	
1,1-Dichloroethane	ug/g	3.5	-			<0.050	<0.050		<0.050		<0.050	
1,2-Dichloroethane	ug/g	0.05	-			<0.050	<0.050		<0.050		<0.050	
1,1-Dichloroethylene	ug/g	0.05	-			<0.050	<0.050		<0.050		<0.050	
cis-1,2-Dichloroethylene	ug/g	3.4	-			<0.050	<0.050		<0.050		<0.050	
trans-1,2-Dichloroethylene	ug/g	0.084	-			<0.050	<0.050		<0.050		<0.050	
Methylene Chloride	ug/g	0.1	-			<0.050	<0.050		<0.050		<0.050	
1,2-Dichloropropane	ug/g	0.05	-			<0.050	<0.050		<0.050		<0.050	
cis-1,3-Dichloropropene	ug/g	-	-			<0.030	<0.030		<0.030		<0.030	
trans-1,3-Dichloropropene	ug/g	-	-			<0.030	<0.030		<0.030		<0.030	
1,3-Dichloropropene (cis & trans)	ug/g	0.05	-			<0.042	<0.042		<0.042		<0.042	
Ethylbenzene	ug/g	2	-	<0.018	0.156	<0.018	0.041	<0.018	<0.018	<0.018	<0.018	<0.29 DLHC
n-Hexane	ug/g	2.8	-			<0.050	1.83		<0.050		<0.050	
Methyl Ethyl Ketone	ug/g	16	-			<0.50	<0.75 DLVH		<0.50		<0.50	
Methyl Isobutyl Ketone	ug/g	1.7	-			<0.50	<0.70 DLVH		<0.50		<0.50	
MTBE	ug/g	0.75	-			<0.050	<0.050		<0.050		<0.050	
Styrene	ug/g	0.7	-			<0.050	<0.050		<0.050		<0.050	

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Volatile Organic Compounds - SOIL

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID	L2056150-2	L2056150-4	L2056150-5	L2056150-7	L2056150-8	L2056150-9	L2056150-10	L2056150-11	L2056150-12
				Sample Date	08-FEB-18	08-FEB-18	08-FEB-18	09-FEB-18	09-FEB-18	09-FEB-18	09-FEB-18	09-FEB-18	09-FEB-18
				Sample ID	BH101 SS6	BH102 SS4	BH102 SS9	BH103 SS6	BH104 SS5	BH104 SS7	BH105 SS5	BH105 SS8	BH123 SS6
1,1,1,2-Tetrachloroethane	ug/g	0.058	-			<0.050	<0.050		<0.050		<0.050	
1,1,2,2-Tetrachloroethane	ug/g	0.05	-			<0.060 DLVH	<0.20 DLVH		<0.050		<0.050	
Tetrachloroethylene	ug/g	0.28	-			<0.050	<0.050		<0.050		<0.050	
Toluene	ug/g	2.3	-	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<1.3 DLHC
1,1,1-Trichloroethane	ug/g	0.38	-			<0.050	<0.050		<0.050		<0.050	
1,1,2-Trichloroethane	ug/g	0.05	-			<0.050	<1.7 DLVH		<0.050		<0.050	
Trichloroethylene	ug/g	0.061	-			<0.010	<0.010		<0.010		<0.010	
Trichlorofluoromethane	ug/g	4	-			<0.050	<0.050		<0.050		<0.050	
Vinyl chloride	ug/g	0.02	-			<0.020	<0.020		<0.020		<0.020	
o-Xylene	ug/g	-	-	<0.020	0.153	<0.020	0.080	<0.020	<0.020	<0.020	<0.020	<0.32 DLHC
m+p-Xylenes	ug/g	-	-	<0.030	0.496	<0.030	0.406	<0.030	<0.030	<0.030	<0.030	<0.48 DLHC
Xylenes (Total)	ug/g	3.1	-	<0.050	0.649	<0.050	0.486	<0.050	<0.050	<0.050	<0.050	<0.58
Surrogate: 4-Bromofluorobenzene	%	-	-	95.9	104.2	103.2	93.1	98.1	102.4	103.3	95.6	N/A SDO:R NA
Surrogate: 1,4-Difluorobenzene	%	-	-	91.8	91.6	97.8	94.5	93.0	98.8	94.0	93.1	N/A SDO:R NA

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Hydrocarbons - SOIL

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID	L2056150-2	L2056150-4	L2056150-7	L2056150-8	L2056150-10	L2056150-12
				Sample Date	08-FEB-18	08-FEB-18	09-FEB-18	09-FEB-18	09-FEB-18	09-FEB-18
				Sample ID	BH101 SS6	BH102 SS4	BH103 SS6	BH104 SS5	BH105 SS5	BH123 SS6
F1 (C6-C10)	ug/g	55	-		<5.0	156	536 DLHC	<5.0	<5.0	1370 DLHC
F1-BTEX	ug/g	55	-		<5.0	156	535	<5.0	<5.0	1370
F2 (C10-C16)	ug/g	98	-		<10	1990	344	<10	<10	244
F2-Naphth	ug/g	-	-			1990	341			
F3 (C16-C34)	ug/g	300	-		<50	916	<50	<50	<50	<50
F3-PAH	ug/g	-	-			912	<50			
F4 (C34-C50)	ug/g	2800	-		<50	<50	<50	60	<50	<50
Total Hydrocarbons (C6-C50)	ug/g	-	-		<72	3060	880	<72	<72	1620
Chrom. to baseline at nC50		-	-		YES	YES	YES	YES	YES	YES
Surrogate: 2-Bromobenzotrifluoride	%	-	-		78.4	85.5	95.6	90.1	91.2	102.4
Surrogate: 3,4-Dichlorotoluene	%	-	-		94.7	131.8	N/A SDO:R NA	97.3	100.7	N/A SDO:R NA

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Polycyclic Aromatic Hydrocarbons - SOIL

		Guide Limits			
Lab ID				L2056150-4	L2056150-7
Sample Date				08-FEB-18	09-FEB-18
Sample ID				BH102 SS4	BH103 SS6
Analyte	**Unit**	**#1**	**#2**		
Acenaphthene	ug/g	7.9	-	0.766	<0.050
Acenaphthylene	ug/g	0.15	-	0.176	<0.050
Anthracene	ug/g	0.67	-	0.207	<0.050
Benzo(a)anthracene	ug/g	0.5	-	<0.050	<0.050
Benzo(a)pyrene	ug/g	0.3	-	<0.050	<0.050
Benzo(b)fluoranthene	ug/g	0.78	-	<0.050	<0.050
Benzo(g,h,i)perylene	ug/g	6.6	-	<0.050	<0.050
Benzo(k)fluoranthene	ug/g	0.78	-	<0.050	<0.050
Chrysene	ug/g	7	-	<0.050	<0.050
Dibenzo(ah)anthracene	ug/g	0.1	-	<0.050	<0.050
Fluoranthene	ug/g	0.69	-	0.059 R	<0.050
Fluorene	ug/g	62	-	1.32	0.051
Indeno(1,2,3-cd)pyrene	ug/g	0.38	-	<0.050	<0.050
1+2-Methylnaphthalenes	ug/g	0.99	-	4.13	11.2
1-Methylnaphthalene	ug/g	0.99	-	1.55	3.44
2-Methylnaphthalene	ug/g	0.99	-	2.58	7.75
Naphthalene	ug/g	0.6	-	0.477 R	3.01
Phenanthrene	ug/g	6.2	-	3.06	0.072
Pyrene	ug/g	78	-	0.207	<0.050
Surrogate: 2-Fluorobiphenyl	%	-	-	91.9	88.0
Surrogate: p-Terphenyl d14	%	-	-	86.8	77.0

Guide Limit #1: T3-Soil-Res/Park/Inst. Property Use (Coarse)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Reference Information

Qualifiers for Individual Parameters Listed:

Qualifier	Description
R	The ion abundance ratio(s) did not meet the acceptance criteria. Value is an estimated maximum.
DLVH	Detection Limit raised due to interference from Volatile Hydrocarbons on VOC method. Chromatographic elution of interfering peaks in the same region as test analytes prevents a

Reference Information

determination of whether VOC analyte is present or absent (above/below regular detection limits).

DLI	Detection Limit Raised: Dilution required to address Internal Standard response problems caused by matrix interference.
SAR:M	Reported SAR represents a maximum value. Actual SAR may be lower if both Ca and Mg were detectable.
SDO:RNA	Surrogate diluted out:% recovery not available
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
B-HWS-R511-WT	Soil	Boron-HWE-O.Reg 153/04 (July 2011)	HW EXTR, EPA 6010B

A dried solid sample is extracted with calcium chloride, the sample undergoes a heating process. After cooling the sample is filtered and analyzed by ICP/OES.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

BTX-511-HS-WT	Soil	BTEX-O.Reg 153/04 (July 2011)	SW846 8260

BTX is determined by extracting a soil or sediment sample as received with methanol, then analyzing by headspace-GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CN-WAD-R511-WT	Soil	Cyanide (WAD)-O.Reg 153/04 (July 2011)	MOE 3015/APHA 4500CN I-WAD

The sample is extracted with a strong base for 16 hours, and then filtered. The filtrate is then distilled where the cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CR-CR6-IC-WT	Soil	Hexavalent Chromium in Soil	SW846 3060A/7199

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

EC-WT	Soil	Conductivity (EC)	MOEE E3138

A representative subsample is tumbled with de-ionized (DI) water. The ratio of water to soil is 2:1 v/w. After tumbling the sample is then analyzed by a conductivity meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

F1-F4-511-CALC-WT	Soil	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-S

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**

added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-HS-511-WT Soil F1-O.Reg 153/04 (July 2011) E3398/CCME TIER 1-HS

Fraction F1 is determined by extracting a soil or sediment sample as received with methanol, then analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F2-F4-511-WT Soil F2-F4-O.Reg 153/04 (July 2011) CCME Tier 1

Petroleum Hydrocarbons (F2-F4 fractions) are extracted from soil with 1:1 hexane:acetone using a rotary extractor. Extracts are treated with silica gel to remove polar organic interferences. F2, F3, & F4 are analyzed by GC-FID. F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons
5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where both F4 (C34-C50) and F4G-sg are reported for a sample, the larger of the two values is used for comparison against the relevant CCME guideline for F4.
7. F4G-sg cannot be added to the C6 to C50 hydrocarbon results to obtain an estimate of total extractable hydrocarbons.
8. This method is validated for use.
9. Data from analysis of validation and quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram, unless otherwise indicated.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

HG-200.2-CVAA-WT Soil Mercury in Soil by CVAAS EPA 200.2/1631E (mod)

Soil samples are digested with nitric and hydrochloric acids, followed by analysis by CVAAS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

MET-200.2-CCMS-WT Soil Metals in Soil by CRC ICPMS EPA 200.2/6020A (mod)

This method uses a heated strong acid digestion with HNO3 and HCl and is intended to liberate metals that may be environmentally available. Silicate minerals are not solubilized. Dependent on

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**

sample matrix, some metals may be only partially recovered, including Al, Ba, Be, Cr, Sr, Ti, Tl, V, W, and Zr. Volatile forms of sulfur (including sulfide) may not be captured, as they may be lost during sampling, storage, or digestion. Analysis is by Collision/Reaction Cell ICPMS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

METHYLNAPS-CALC-WT	Soil	ABN-Calculated Parameters	SW846 8270
MOISTURE-WT	Soil	% Moisture	Gravimetric: Oven Dried
PAH-511-WT	Soil	PAH-O.Reg 153/04 (July 2011)	SW846 3510/8270

A representative sub-sample of soil is fortified with deuterium-labelled surrogates and a mechanical shaking techniqueis used to extract the sample with a mixture of methanol and toluene. The extracts are concentrated and analyzed by GC/MS. Results for benzo(b) fluoranthene may include contributions from benzo(j)fluoranthene, if also present in the sample.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

PH-WT	Soil	pH	MOEE E3137A

A minimum 10g portion of the sample is extracted with 20mL of 0.01M calcium chloride solution by shaking for at least 30 minutes. The aqueous layer is separated from the soil and then analyzed using a pH meter and electrode.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

PSA-75UM-SIEVE-WT	Soil	% Particles>75um (Coarse/Fine)	ASTM D422-63-HYDROMETER/SIEVE

An air-dried sample is reduced to < 2 mm size and mixed with a dispersing agent (Calgon solution). The sample is washed through a 200 mesh (75 µm) sieve. The retained mass of sample is used to determine % sand fraction. If the percentage of sand is >50%, the soil is considered to be coarse textured soil. If the percentage of sand is <50%, the soil is considered to be fine textured.

Reference: ASTM D422-63

SAR-R511-WT	Soil	SAR-O.Reg 153/04 (July 2011)	SW846 6010C

A dried, disaggregated solid sample is extracted with deionized water, the aqueous extract is separated from the solid, acidified and then analyzed using a ICP/OES. The concentrations of Na, Ca and Mg are reported as per CALA requirements for calculated parameters. These individual parameters are not for comparison to any guideline.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

VOC-1,3-DCP-CALC-WT	Soil	Regulation 153 VOCs	SW8260B/SW8270C
VOC-511-HS-WT	Soil	VOC-O.Reg 153/04 (July 2011)	SW846 8260 (511)

Soil and sediment samples are extracted in methanol and analyzed by headspace-GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

XYLENES-SUM-CALC-WT	Soil	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

**ALS test methods may incorporate modifications from specified reference methods to improve performance.

Reference Information

Chain of Custody Numbers:

17-637677

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information.

Quality Control Report

Workorder: L2056150 Report Date: 21-FEB-18

Client: G2S ENVIRONMENTAL CONSULTING, INC.
3370 S SERVICE ROAD SUITE 107
BURLINGTON ON L7N 3M6
Contact: DANA HASLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
B-HWS-R511-WT	**Soil**							
Batch R3962116								
WG2717409-4 DUP		**L2056119-1**						
Boron (B), Hot Water Ext.		<0.10	<0.10	RPD-NA	ug/g	N/A	30	16-FEB-18
WG2717409-2 IRM		**HOTB-SAL_SOIL5**						
Boron (B), Hot Water Ext.			107.7		%		70-130	16-FEB-18
WG2717409-3 LCS								
Boron (B), Hot Water Ext.			105.2		%		70-130	16-FEB-18
WG2717409-1 MB								
Boron (B), Hot Water Ext.			<0.10		ug/g		0.1	16-FEB-18
Batch R3962296								
WG2717413-4 DUP		**L2056011-1**						
Boron (B), Hot Water Ext.		<0.10	<0.10	RPD-NA	ug/g	N/A	30	16-FEB-18
WG2717413-2 IRM		**HOTB-SAL_SOIL5**						
Boron (B), Hot Water Ext.			110.4		%		70-130	16-FEB-18
WG2717413-3 LCS								
Boron (B), Hot Water Ext.			90.8		%		70-130	16-FEB-18
WG2717413-1 MB								
Boron (B), Hot Water Ext.			<0.10		ug/g		0.1	16-FEB-18
BTX-511-HS-WT	**Soil**							
Batch R3961558								
WG2715925-4 DUP		**WG2715925-3**						
Benzene		<0.0068	<0.0068	RPD-NA	ug/g	N/A	40	15-FEB-18
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	15-FEB-18
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	40	15-FEB-18
o-Xylene		<0.020	<0.020	RPD-NA	ug/g	N/A	40	15-FEB-18
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	15-FEB-18
WG2715925-2 LCS								
Benzene			97.2		%		70-130	15-FEB-18
Ethylbenzene			89.2		%		70-130	15-FEB-18
m+p-Xylenes			94.3		%		70-130	15-FEB-18
o-Xylene			90.7		%		70-130	15-FEB-18
Toluene			92.7		%		70-130	15-FEB-18
WG2715925-1 MB								
Benzene			<0.0068		ug/g		0.0068	15-FEB-18
Ethylbenzene			<0.018		ug/g		0.018	15-FEB-18
m+p-Xylenes			<0.030		ug/g		0.03	15-FEB-18
o-Xylene			<0.020		ug/g		0.02	15-FEB-18

Quality Control Report

Client: G2S ENVIRONMENTAL CONSULTING, INC.
3370 S SERVICE ROAD SUITE 107
BURLINGTON ON L7N 3M6
Contact: DANA HASLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTX-511-HS-WT	**Soil**							
Batch R3961558								
WG2715925-1 MB								
Toluene			<0.080		ug/g		0.08	15-FEB-18
Surrogate: 1,4-Difluorobenzene			94.6		%		50-140	15-FEB-18
Surrogate: 4-Bromofluorobenzene			98.6		%		50-140	15-FEB-18
WG2715925-5 MS		**WG2715925-3**						
Benzene			96.0		%		60-140	15-FEB-18
Ethylbenzene			89.1		%		60-140	15-FEB-18
m+p-Xylenes			94.2		%		60-140	15-FEB-18
o-Xylene			90.2		%		60-140	15-FEB-18
Toluene			93.0		%		60-140	15-FEB-18
CN-WAD-R511-WT	**Soil**							
Batch R3961678								
WG2716395-3 DUP		**L2056119-1**						
Cyanide, Weak Acid Diss		<0.050	<0.050	RPD-NA	ug/g	N/A	35	15-FEB-18
WG2716395-2 LCS								
Cyanide, Weak Acid Diss			96.4		%		80-120	15-FEB-18
WG2716395-1 MB								
Cyanide, Weak Acid Diss			<0.050		ug/g		0.05	15-FEB-18
WG2716395-4 MS		**L2056119-1**						
Cyanide, Weak Acid Diss			103.4		%		70-130	15-FEB-18
CR-CR6-IC-WT	**Soil**							
Batch R3962249								
WG2716248-3 CRM		**WT-SQC012**						
Chromium, Hexavalent			105.8		%		70-130	15-FEB-18
WG2716248-4 DUP		**L2056119-1**						
Chromium, Hexavalent		0.26	<0.20	RPD-NA	ug/g	N/A	35	15-FEB-18
WG2716248-2 LCS								
Chromium, Hexavalent			105.6		%		80-120	15-FEB-18
WG2716248-1 MB								
Chromium, Hexavalent			<0.20		ug/g		0.2	15-FEB-18
Batch R3962261								
WG2717087-4 CRM		**WT-SQC012**						
Chromium, Hexavalent			83.9		%		70-130	16-FEB-18
WG2717087-3 DUP		**L2052892-9**						
Chromium, Hexavalent		<0.20	<0.20	RPD-NA	ug/g	N/A	35	16-FEB-18
WG2717087-2 LCS								
Chromium, Hexavalent			107.1		%		80-120	16-FEB-18

Quality Control Report

Client: G2S ENVIRONMENTAL CONSULTING, INC.
3370 S SERVICE ROAD SUITE 107
BURLINGTON ON L7N 3M6
Contact: DANA HASLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CR-CR6-IC-WT	**Soil**							
Batch R3962261								
WG2717087-1 MB								
Chromium, Hexavalent			<0.20		ug/g		0.2	16-FEB-18
EC-WT	**Soil**							
Batch R3962319								
WG2717393-4 DUP		**WG2717393-3**						
Conductivity		0.912	0.882		mS/cm	3.3	20	16-FEB-18
WG2717616-1 LCS								
Conductivity			99.5		%		90-110	16-FEB-18
WG2717393-1 MB								
Conductivity			<0.0040		mS/cm		0.004	16-FEB-18
F1-HS-511-WT	**Soil**							
Batch R3961558								
WG2715925-4 DUP		**WG2715925-3**						
F1 (C6-C10)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	15-FEB-18
WG2715925-2 LCS								
F1 (C6-C10)			104.2		%		80-120	15-FEB-18
WG2715925-1 MB								
F1 (C6-C10)			<5.0		ug/g		5	15-FEB-18
Surrogate: 3,4-Dichlorotoluene			99.3		%		60-140	15-FEB-18
WG2715925-7 MS		**WG2715925-6**						
F1 (C6-C10)			98.7		%		60-140	15-FEB-18
Batch R3962041								
WG2715965-4 DUP		**WG2715965-3**						
F1 (C6-C10)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	16-FEB-18
WG2715965-2 LCS								
F1 (C6-C10)			110.4		%		80-120	16-FEB-18
WG2715965-1 MB								
F1 (C6-C10)			<5.0		ug/g		5	16-FEB-18
Surrogate: 3,4-Dichlorotoluene			111.2		%		60-140	16-FEB-18
WG2715965-7 MS		**WG2715965-6**						
F1 (C6-C10)			102.9		%		60-140	16-FEB-18
F2-F4-511-WT	**Soil**							
Batch R3961930								
WG2716334-13 DUP		**WG2716334-11**						
F2 (C10-C16)		<10	<10	RPD-NA	ug/g	N/A	30	15-FEB-18
F3 (C16-C34)		53	77	J	ug/g	24	100	15-FEB-18

Quality Control Report

Client: G2S ENVIRONMENTAL CONSULTING, INC.
3370 S SERVICE ROAD SUITE 107
BURLINGTON ON L7N 3M6
Contact: DANA HASLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-F4-511-WT	**Soil**							
Batch R3961930								
WG2716334-13 DUP		**WG2716334-11**						
F4 (C34-C50)		141	229	J	ug/g	88	100	15-FEB-18
WG2716334-2 LCS								
F2 (C10-C16)			93.4		%		80-120	15-FEB-18
F3 (C16-C34)			98.9		%		80-120	15-FEB-18
F4 (C34-C50)			99.4		%		80-120	15-FEB-18
WG2716334-1 MB								
F2 (C10-C16)			<10		ug/g		10	15-FEB-18
F3 (C16-C34)			<50		ug/g		50	15-FEB-18
F4 (C34-C50)			<50		ug/g		50	15-FEB-18
Surrogate: 2-Bromobenzotrifluoride			79.8		%		60-140	15-FEB-18
WG2716334-12 MS		**WG2716334-11**						
F2 (C10-C16)			100.0		%		60-140	15-FEB-18
F3 (C16-C34)			102.1		%		60-140	15-FEB-18
F4 (C34-C50)			102.7		%		60-140	15-FEB-18
Batch R3966495								
WG2717997-4 DUP		**WG2717997-3**						
F2 (C10-C16)		<10	<10	RPD-NA	ug/g	N/A	30	20-FEB-18
F3 (C16-C34)		<50	<50	RPD-NA	ug/g	N/A	30	20-FEB-18
F4 (C34-C50)		<50	59	RPD-NA	ug/g	N/A	30	20-FEB-18
WG2717997-2 LCS								
F2 (C10-C16)			107.6		%		80-120	20-FEB-18
F3 (C16-C34)			105.7		%		80-120	20-FEB-18
F4 (C34-C50)			105.8		%		80-120	20-FEB-18
WG2717997-1 MB								
F2 (C10-C16)			<10		ug/g		10	20-FEB-18
F3 (C16-C34)			<50		ug/g		50	20-FEB-18
F4 (C34-C50)			<50		ug/g		50	20-FEB-18
Surrogate: 2-Bromobenzotrifluoride			95.6		%		60-140	20-FEB-18
WG2717997-5 MS		**WG2717997-3**						
F2 (C10-C16)			105.1		%		60-140	20-FEB-18
F3 (C16-C34)			106.7		%		60-140	20-FEB-18
F4 (C34-C50)			112.9		%		60-140	20-FEB-18
HG-200.2-CVAA-WT	**Soil**							

Quality Control Report

Client: G2S ENVIRONMENTAL CONSULTING, INC.
3370 S SERVICE ROAD SUITE 107
BURLINGTON ON L7N 3M6
Contact: DANA HASLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-200.2-CVAA-WT	**Soil**							
Batch R3962300								
WG2717388-2 CRM		**WT-CANMET-TILL1**						
Mercury (Hg)			92.4		%		70-130	16-FEB-18
WG2717388-6 DUP		**WG2717388-5**						
Mercury (Hg)		0.0202	0.0206		ug/g	2.1	40	16-FEB-18
WG2717388-3 LCS								
Mercury (Hg)			97.0		%		80-120	16-FEB-18
WG2717388-1 MB								
Mercury (Hg)			<0.0050		mg/kg		0.005	16-FEB-18
MET-200.2-CCMS-WT	**Soil**							
Batch R3962511								
WG2717388-2 CRM		**WT-CANMET-TILL1**						
Antimony (Sb)			103.2		%		70-130	16-FEB-18
Arsenic (As)			108.9		%		70-130	16-FEB-18
Barium (Ba)			107.7		%		70-130	16-FEB-18
Beryllium (Be)			100.8		%		70-130	16-FEB-18
Boron (B)			4.0		mg/kg		0-8.2	16-FEB-18
Cadmium (Cd)			100.4		%		70-130	16-FEB-18
Chromium (Cr)			110.7		%		70-130	16-FEB-18
Cobalt (Co)			110.4		%		70-130	16-FEB-18
Copper (Cu)			109.5		%		70-130	16-FEB-18
Lead (Pb)			103.8		%		70-130	16-FEB-18
Molybdenum (Mo)			102.8		%		70-130	16-FEB-18
Nickel (Ni)			111.4		%		70-130	16-FEB-18
Selenium (Se)			0.34		mg/kg		0.11-0.51	16-FEB-18
Silver (Ag)			0.25		mg/kg		0.13-0.33	16-FEB-18
Thallium (Tl)			0.127		mg/kg		0.077-0.18	16-FEB-18
Uranium (U)			96.7		%		70-130	16-FEB-18
Vanadium (V)			112.7		%		70-130	16-FEB-18
Zinc (Zn)			109.2		%		70-130	16-FEB-18
WG2717388-6 DUP		**WG2717388-5**						
Antimony (Sb)		<0.10	<0.10	RPD-NA	ug/g	N/A	30	16-FEB-18
Arsenic (As)		3.07	3.20		ug/g	4.0	30	16-FEB-18
Barium (Ba)		25.3	25.5		ug/g	0.6	40	16-FEB-18
Beryllium (Be)		0.25	0.25		ug/g	0.2	30	16-FEB-18
Boron (B)		8.1	9.3		ug/g	13	30	16-FEB-18

Quality Control Report

Workorder: L2056150 Report Date: 21-FEB-18

Client: G2S ENVIRONMENTAL CONSULTING, INC.
3370 S SERVICE ROAD SUITE 107
BURLINGTON ON L7N 3M6
Contact: DANA HASLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R3962511								
WG2717388-6 DUP		**WG2717388-5**						
Cadmium (Cd)		0.111	0.108		ug/g	3.0	30	16-FEB-18
Chromium (Cr)		10.0	10.4		ug/g	3.6	30	16-FEB-18
Cobalt (Co)		3.03	3.15		ug/g	4.0	30	16-FEB-18
Copper (Cu)		9.19	9.41		ug/g	2.4	30	16-FEB-18
Lead (Pb)		7.01	7.41		ug/g	5.5	40	16-FEB-18
Molybdenum (Mo)		0.26	0.27		ug/g	3.2	40	16-FEB-18
Nickel (Ni)		7.00	7.13		ug/g	2.0	30	16-FEB-18
Selenium (Se)		<0.20	<0.20	RPD-NA	ug/g	N/A	30	16-FEB-18
Silver (Ag)		<0.10	<0.10	RPD-NA	ug/g	N/A	40	16-FEB-18
Thallium (Tl)		0.056	0.060		ug/g	7.2	30	16-FEB-18
Uranium (U)		0.395	0.407		ug/g	2.9	30	16-FEB-18
Vanadium (V)		17.1	18.7		ug/g	9.3	30	16-FEB-18
Zinc (Zn)		39.7	41.0		ug/g	3.3	30	16-FEB-18
WG2717388-4 LCS								
Antimony (Sb)			99.7		%		80-120	16-FEB-18
Arsenic (As)			99.4		%		80-120	16-FEB-18
Barium (Ba)			110.3		%		80-120	16-FEB-18
Beryllium (Be)			94.3		%		80-120	16-FEB-18
Boron (B)			84.3		%		80-120	16-FEB-18
Cadmium (Cd)			106.8		%		80-120	16-FEB-18
Chromium (Cr)			106.1		%		80-120	16-FEB-18
Cobalt (Co)			107.4		%		80-120	16-FEB-18
Copper (Cu)			100.9		%		80-120	16-FEB-18
Lead (Pb)			98.9		%		80-120	16-FEB-18
Molybdenum (Mo)			97.0		%		80-120	16-FEB-18
Nickel (Ni)			104.8		%		80-120	16-FEB-18
Selenium (Se)			95.9		%		80-120	16-FEB-18
Silver (Ag)			106.5		%		80-120	16-FEB-18
Thallium (Tl)			98.8		%		80-120	16-FEB-18
Uranium (U)			97.1		%		80-120	16-FEB-18
Vanadium (V)			107.0		%		80-120	16-FEB-18
Zinc (Zn)			97.2		%		80-120	16-FEB-18
WG2717388-1 MB								
							0.1	

Quality Control Report

Client: G2S ENVIRONMENTAL CONSULTING, INC.
3370 S SERVICE ROAD SUITE 107
BURLINGTON ON L7N 3M6
Contact: DANA HASLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-200.2-CCMS-WT	**Soil**							
Batch R3962511								
WG2717388-1 MB								
Antimony (Sb)			<0.10		mg/kg		0.1	16-FEB-18
Arsenic (As)			<0.10		mg/kg		0.1	16-FEB-18
Barium (Ba)			<0.50		mg/kg		0.5	16-FEB-18
Beryllium (Be)			<0.10		mg/kg		0.1	16-FEB-18
Boron (B)			<5.0		mg/kg		5	16-FEB-18
Cadmium (Cd)			<0.020		mg/kg		0.02	16-FEB-18
Chromium (Cr)			<0.50		mg/kg		0.5	16-FEB-18
Cobalt (Co)			<0.10		mg/kg		0.1	16-FEB-18
Copper (Cu)			<0.50		mg/kg		0.5	16-FEB-18
Lead (Pb)			<0.50		mg/kg		0.5	16-FEB-18
Molybdenum (Mo)			<0.10		mg/kg		0.1	16-FEB-18
Nickel (Ni)			<0.50		mg/kg		0.5	16-FEB-18
Selenium (Se)			<0.20		mg/kg		0.2	16-FEB-18
Silver (Ag)			<0.10		mg/kg		0.1	16-FEB-18
Thallium (Tl)			<0.050		mg/kg		0.05	16-FEB-18
Uranium (U)			<0.050		mg/kg		0.05	16-FEB-18
Vanadium (V)			<0.20		mg/kg		0.2	16-FEB-18
Zinc (Zn)			<2.0		mg/kg		2	16-FEB-18
MOISTURE-WT	**Soil**							
Batch R3961356								
WG2715918-3 DUP		**L2056136-1**						
% Moisture		18.6	18.2		%	2.5	20	14-FEB-18
WG2715918-2 LCS								
% Moisture			99.98		%		90-110	14-FEB-18
WG2715918-1 MB								
% Moisture			<0.10		%		0.1	14-FEB-18
Batch R3961357								
WG2715919-3 DUP		**L2056150-6**						
% Moisture		7.38	7.68		%	4.1	20	14-FEB-18
WG2715919-2 LCS								
% Moisture			99.5		%		90-110	14-FEB-18
WG2715919-1 MB								
% Moisture			<0.10		%		0.1	14-FEB-18

Quality Control Report

Client: G2S ENVIRONMENTAL CONSULTING, INC.
3370 S SERVICE ROAD SUITE 107
BURLINGTON ON L7N 3M6
Contact: DANA HASLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MOISTURE-WT	**Soil**							
Batch R3961361								
WG2715920-3 DUP		**L2056150-8**						
% Moisture		16.3	14.7		%	10	20	14-FEB-18
WG2715920-2 LCS								
% Moisture			100.9		%		90-110	14-FEB-18
WG2715920-1 MB								
% Moisture			<0.10		%		0.1	14-FEB-18
PAH-511-WT	**Soil**							
Batch R3962184								
WG2716117-3 DUP		**WG2716117-5**						
1-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	16-FEB-18
2-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	16-FEB-18
Acenaphthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-FEB-18
Acenaphthylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-FEB-18
Anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-FEB-18
Benzo(a)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-FEB-18
Benzo(a)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-FEB-18
Benzo(b)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-FEB-18
Benzo(g,h,i)perylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-FEB-18
Benzo(k)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-FEB-18
Chrysene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-FEB-18
Dibenzo(ah)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-FEB-18
Fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-FEB-18
Fluorene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-FEB-18
Indeno(1,2,3-cd)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-FEB-18
Naphthalene		<0.013	<0.013	RPD-NA	ug/g	N/A	40	16-FEB-18
Phenanthrene		<0.046	<0.046	RPD-NA	ug/g	N/A	40	16-FEB-18
Pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-FEB-18
WG2716117-2 LCS								
1-Methylnaphthalene			107.1		%		50-140	16-FEB-18
2-Methylnaphthalene			108.4		%		50-140	16-FEB-18
Acenaphthene			109.4		%		50-140	16-FEB-18
Acenaphthylene			104.6		%		50-140	16-FEB-18
Anthracene			95.3		%		50-140	16-FEB-18
Benzo(a)anthracene			105.7		%		50-140	16-FEB-18
Benzo(a)pyrene			91.7		%		50-140	16-FEB-18

Quality Control Report

Client: G2S ENVIRONMENTAL CONSULTING, INC.
3370 S SERVICE ROAD SUITE 107
BURLINGTON ON L7N 3M6
Contact: DANA HASLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R3962184								
WG2716117-2 LCS								
Benzo(b)fluoranthene			94.8		%		50-140	16-FEB-18
Benzo(g,h,i)perylene			82.0		%		50-140	16-FEB-18
Benzo(k)fluoranthene			95.7		%		50-140	16-FEB-18
Chrysene			107.4		%		50-140	16-FEB-18
Dibenzo(ah)anthracene			83.8		%		50-140	16-FEB-18
Fluoranthene			93.4		%		50-140	16-FEB-18
Fluorene			102.8		%		50-140	16-FEB-18
Indeno(1,2,3-cd)pyrene			78.1		%		50-140	16-FEB-18
Naphthalene			108.6		%		50-140	16-FEB-18
Phenanthrene			98.5		%		50-140	16-FEB-18
Pyrene			94.1		%		50-140	16-FEB-18
WG2716117-1 MB								
1-Methylnaphthalene			<0.030		ug/g		0.03	16-FEB-18
2-Methylnaphthalene			<0.030		ug/g		0.03	16-FEB-18
Acenaphthene			<0.050		ug/g		0.05	16-FEB-18
Acenaphthylene			<0.050		ug/g		0.05	16-FEB-18
Anthracene			<0.050		ug/g		0.05	16-FEB-18
Benzo(a)anthracene			<0.050		ug/g		0.05	16-FEB-18
Benzo(a)pyrene			<0.050		ug/g		0.05	16-FEB-18
Benzo(b)fluoranthene			<0.050		ug/g		0.05	16-FEB-18
Benzo(g,h,i)perylene			<0.050		ug/g		0.05	16-FEB-18
Benzo(k)fluoranthene			<0.050		ug/g		0.05	16-FEB-18
Chrysene			<0.050		ug/g		0.05	16-FEB-18
Dibenzo(ah)anthracene			<0.050		ug/g		0.05	16-FEB-18
Fluoranthene			<0.050		ug/g		0.05	16-FEB-18
Fluorene			<0.050		ug/g		0.05	16-FEB-18
Indeno(1,2,3-cd)pyrene			<0.050		ug/g		0.05	16-FEB-18
Naphthalene			<0.013		ug/g		0.013	16-FEB-18
Phenanthrene			<0.046		ug/g		0.046	16-FEB-18
Pyrene			<0.050		ug/g		0.05	16-FEB-18
Surrogate: 2-Fluorobiphenyl			91.4		%		50-140	16-FEB-18
Surrogate: p-Terphenyl d14			82.7		%		50-140	16-FEB-18
WG2716117-4 MS		**WG2716117-5**						
1-Methylnaphthalene			105.9		%		50-140	16-FEB-18

Quality Control Report

Client: G2S ENVIRONMENTAL CONSULTING, INC.
3370 S SERVICE ROAD SUITE 107
BURLINGTON ON L7N 3M6
Contact: DANA HASLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R3962184								
WG2716117-4 MS		**WG2716117-5**						
2-Methylnaphthalene			106.3		%		50-140	16-FEB-18
Acenaphthene			107.4		%		50-140	16-FEB-18
Acenaphthylene			98.7		%		50-140	16-FEB-18
Anthracene			93.7		%		50-140	16-FEB-18
Benzo(a)anthracene			103.9		%		50-140	16-FEB-18
Benzo(a)pyrene			91.4		%		50-140	16-FEB-18
Benzo(b)fluoranthene			96.4		%		50-140	16-FEB-18
Benzo(g,h,i)perylene			83.6		%		50-140	16-FEB-18
Benzo(k)fluoranthene			94.8		%		50-140	16-FEB-18
Chrysene			108.1		%		50-140	16-FEB-18
Dibenzo(ah)anthracene			85.3		%		50-140	16-FEB-18
Fluoranthene			90.5		%		50-140	16-FEB-18
Fluorene			100.1		%		50-140	16-FEB-18
Indeno(1,2,3-cd)pyrene			79.4		%		50-140	16-FEB-18
Naphthalene			107.5		%		50-140	16-FEB-18
Phenanthrene			99.7		%		50-140	16-FEB-18
Pyrene			91.9		%		50-140	16-FEB-18
Batch R3966747								
WG2716519-4 DUP		**WG2716519-3**						
1-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	21-FEB-18
2-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	21-FEB-18
Acenaphthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-FEB-18
Acenaphthylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-FEB-18
Anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-FEB-18
Benzo(a)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-FEB-18
Benzo(a)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-FEB-18
Benzo(b)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-FEB-18
Benzo(g,h,i)perylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-FEB-18
Benzo(k)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-FEB-18
Chrysene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-FEB-18
Dibenzo(ah)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-FEB-18
Fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-FEB-18
Fluorene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-FEB-18

Quality Control Report

Workorder: L2056150 Report Date: 21-FEB-18

Client: G2S ENVIRONMENTAL CONSULTING, INC.
3370 S SERVICE ROAD SUITE 107
BURLINGTON ON L7N 3M6
Contact: DANA HASLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R3966747								
WG2716519-4 DUP		**WG2716519-3**						
Indeno(1,2,3-cd)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-FEB-18
Naphthalene		<0.013	<0.013	RPD-NA	ug/g	N/A	40	21-FEB-18
Phenanthrene		<0.046	<0.046	RPD-NA	ug/g	N/A	40	21-FEB-18
Pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	21-FEB-18
WG2716519-2 LCS								
1-Methylnaphthalene			98.1		%		50-140	21-FEB-18
2-Methylnaphthalene			98.0		%		50-140	21-FEB-18
Acenaphthene			100.3		%		50-140	21-FEB-18
Acenaphthylene			91.8		%		50-140	21-FEB-18
Anthracene			85.0		%		50-140	21-FEB-18
Benzo(a)anthracene			92.4		%		50-140	21-FEB-18
Benzo(a)pyrene			83.5		%		50-140	21-FEB-18
Benzo(b)fluoranthene			87.6		%		50-140	21-FEB-18
Benzo(g,h,i)perylene			72.1		%		50-140	21-FEB-18
Benzo(k)fluoranthene			88.8		%		50-140	21-FEB-18
Chrysene			101.0		%		50-140	21-FEB-18
Dibenzo(ah)anthracene			74.2		%		50-140	21-FEB-18
Fluoranthene			82.2		%		50-140	21-FEB-18
Fluorene			93.2		%		50-140	21-FEB-18
Indeno(1,2,3-cd)pyrene			67.3		%		50-140	21-FEB-18
Naphthalene			100.7		%		50-140	21-FEB-18
Phenanthrene			91.7		%		50-140	21-FEB-18
Pyrene			83.9		%		50-140	21-FEB-18
WG2716519-1 MB								
1-Methylnaphthalene			<0.030		ug/g		0.03	21-FEB-18
2-Methylnaphthalene			<0.030		ug/g		0.03	21-FEB-18
Acenaphthene			<0.050		ug/g		0.05	21-FEB-18
Acenaphthylene			<0.050		ug/g		0.05	21-FEB-18
Anthracene			<0.050		ug/g		0.05	21-FEB-18
Benzo(a)anthracene			<0.050		ug/g		0.05	21-FEB-18
Benzo(a)pyrene			<0.050		ug/g		0.05	21-FEB-18
Benzo(b)fluoranthene			<0.050		ug/g		0.05	21-FEB-18
Benzo(g,h,i)perylene			<0.050		ug/g		0.05	21-FEB-18
Benzo(k)fluoranthene			<0.050		ug/g		0.05	21-FEB-18

Quality Control Report

Client: G2S ENVIRONMENTAL CONSULTING, INC.
3370 S SERVICE ROAD SUITE 107
BURLINGTON ON L7N 3M6
Contact: DANA HASLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R3966747								
WG2716519-1 MB								
Chrysene			<0.050		ug/g		0.05	21-FEB-18
Dibenzo(ah)anthracene			<0.050		ug/g		0.05	21-FEB-18
Fluoranthene			<0.050		ug/g		0.05	21-FEB-18
Fluorene			<0.050		ug/g		0.05	21-FEB-18
Indeno(1,2,3-cd)pyrene			<0.050		ug/g		0.05	21-FEB-18
Naphthalene			<0.013		ug/g		0.013	21-FEB-18
Phenanthrene			<0.046		ug/g		0.046	21-FEB-18
Pyrene			<0.050		ug/g		0.05	21-FEB-18
Surrogate: 2-Fluorobiphenyl			80.1		%		50-140	21-FEB-18
Surrogate: p-Terphenyl d14			72.3		%		50-140	21-FEB-18
WG2716519-5 MS		**WG2716519-3**						
1-Methylnaphthalene			101.1		%		50-140	21-FEB-18
2-Methylnaphthalene			101.1		%		50-140	21-FEB-18
Acenaphthene			102.1		%		50-140	21-FEB-18
Acenaphthylene			92.5		%		50-140	21-FEB-18
Anthracene			87.1		%		50-140	21-FEB-18
Benzo(a)anthracene			94.0		%		50-140	21-FEB-18
Benzo(a)pyrene			86.7		%		50-140	21-FEB-18
Benzo(b)fluoranthene			91.8		%		50-140	21-FEB-18
Benzo(g,h,i)perylene			70.7		%		50-140	21-FEB-18
Benzo(k)fluoranthene			91.8		%		50-140	21-FEB-18
Chrysene			104.8		%		50-140	21-FEB-18
Dibenzo(ah)anthracene			73.1		%		50-140	21-FEB-18
Fluoranthene			83.8		%		50-140	21-FEB-18
Fluorene			94.5		%		50-140	21-FEB-18
Indeno(1,2,3-cd)pyrene			66.8		%		50-140	21-FEB-18
Naphthalene			103.7		%		50-140	21-FEB-18
Phenanthrene			94.6		%		50-140	21-FEB-18
Pyrene			85.9		%		50-140	21-FEB-18
PH-WT	**Soil**							
Batch R3962829								
WG2716964-1 DUP		**L2056152-3**						
pH		7.71	7.69	J	pH units	0.02	0.3	16-FEB-18
WG2717618-1 LCS								

Quality Control Report

Client: G2S ENVIRONMENTAL CONSULTING, INC.
3370 S SERVICE ROAD SUITE 107
BURLINGTON ON L7N 3M6
Contact: DANA HASLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PH-WT	**Soil**							
Batch R3962829								
WG2717618-1 LCS								
pH			6.99		pH units		6.9-7.1	16-FEB-18
PSA-75UM-SIEVE-WT	**Soil**							
Batch R3966287								
WG2719081-1 DUP		**L2056152-5**						
% >75um		95.6	95.6	J	%	0.0	5	20-FEB-18
SAR-R511-WT	**Soil**							
Batch R3966935								
WG2719483-7 DUP		**L2056289-6**						
Calcium (Ca)		46.5	46.9		mg/L	1.0	30	21-FEB-18
Sodium (Na)		37.9	37.9		mg/L	0.0	30	21-FEB-18
Magnesium (Mg)		53.4	53.6		mg/L	0.4	30	21-FEB-18
WG2719483-6 IRM		**WT SAR1**						
Calcium (Ca)			94.3		%		70-130	21-FEB-18
Sodium (Na)			98.3		%		70-130	21-FEB-18
Magnesium (Mg)			95.9		%		70-130	21-FEB-18
WG2719483-5 MB								
Calcium (Ca)			<1.0		mg/L		1	21-FEB-18
Sodium (Na)			<1.0		mg/L		1	21-FEB-18
Magnesium (Mg)			<1.0		mg/L		1	21-FEB-18
VOC-511-HS-WT	**Soil**							
Batch R3961645								
WG2715905-4 DUP		**WG2715905-3**						
1,1,1,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-FEB-18
1,1,2,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-FEB-18
1,1,1-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-FEB-18
1,1,2-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-FEB-18
1,1-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-FEB-18
1,1-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-FEB-18
1,2-Dibromoethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-FEB-18
1,2-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-FEB-18
1,2-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-FEB-18
1,2-Dichloropropane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-FEB-18

Quality Control Report

Client: G2S ENVIRONMENTAL CONSULTING, INC.
3370 S SERVICE ROAD SUITE 107
BURLINGTON ON L7N 3M6
Contact: DANA HASLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3961645								
WG2715905-4 DUP		**WG2715905-3**						
1,3-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-FEB-18
1,4-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-FEB-18
Acetone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	15-FEB-18
Benzene		<0.0068	<0.0068	RPD-NA	ug/g	N/A	40	15-FEB-18
Bromodichloromethane		<0.060	<0.070	RPD-NA	ug/g	N/A	40	15-FEB-18
Bromoform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-FEB-18
Bromomethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-FEB-18
Carbon tetrachloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-FEB-18
Chlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-FEB-18
Chloroform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-FEB-18
cis-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-FEB-18
cis-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	15-FEB-18
Dibromochloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-FEB-18
Dichlorodifluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-FEB-18
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	15-FEB-18
n-Hexane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-FEB-18
Methylene Chloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-FEB-18
MTBE		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-FEB-18
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	40	15-FEB-18
Methyl Ethyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	15-FEB-18
Methyl Isobutyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	15-FEB-18
o-Xylene		<0.020	<0.020	RPD-NA	ug/g	N/A	40	15-FEB-18
Styrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-FEB-18
Tetrachloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-FEB-18
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	15-FEB-18
trans-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-FEB-18
trans-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	15-FEB-18
Trichloroethylene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	15-FEB-18
Trichlorofluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	15-FEB-18
Vinyl chloride		<0.020	<0.020	RPD-NA	ug/g	N/A	40	15-FEB-18
WG2715905-2 LCS								
1,1,1,2-Tetrachloroethane			101.1		%		60-130	15-FEB-18
1,1,2,2-Tetrachloroethane			102.6		%		60-130	15-FEB-18

Quality Control Report

Client: G2S ENVIRONMENTAL CONSULTING, INC.
3370 S SERVICE ROAD SUITE 107
BURLINGTON ON L7N 3M6
Contact: DANA HASLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3961645								
WG2715905-2 LCS								
1,1,1-Trichloroethane			101.7		%		60-130	15-FEB-18
1,1,2-Trichloroethane			102.5		%		60-130	15-FEB-18
1,1-Dichloroethane			102.8		%		60-130	15-FEB-18
1,1-Dichloroethylene			95.3		%		60-130	15-FEB-18
1,2-Dibromoethane			101.2		%		70-130	15-FEB-18
1,2-Dichlorobenzene			105.1		%		70-130	15-FEB-18
1,2-Dichloroethane			101.1		%		60-130	15-FEB-18
1,2-Dichloropropane			106.5		%		70-130	15-FEB-18
1,3-Dichlorobenzene			103.2		%		70-130	15-FEB-18
1,4-Dichlorobenzene			105.9		%		70-130	15-FEB-18
Acetone			114.7		%		60-140	15-FEB-18
Benzene			106.0		%		70-130	15-FEB-18
Bromodichloromethane			98.9		%		50-140	15-FEB-18
Bromoform			98.0		%		70-130	15-FEB-18
Bromomethane			95.5		%		50-140	15-FEB-18
Carbon tetrachloride			100.2		%		70-130	15-FEB-18
Chlorobenzene			105.7		%		70-130	15-FEB-18
Chloroform			103.2		%		70-130	15-FEB-18
cis-1,2-Dichloroethylene			104.9		%		70-130	15-FEB-18
cis-1,3-Dichloropropene			104.7		%		70-130	15-FEB-18
Dibromochloromethane			102.9		%		60-130	15-FEB-18
Dichlorodifluoromethane			51.6		%		50-140	15-FEB-18
Ethylbenzene			103.3		%		70-130	15-FEB-18
n-Hexane			110.9		%		70-130	15-FEB-18
Methylene Chloride			104.5		%		70-130	15-FEB-18
MTBE			105.4		%		70-130	15-FEB-18
m+p-Xylenes			105.2		%		70-130	15-FEB-18
Methyl Ethyl Ketone			111.2		%		60-140	15-FEB-18
Methyl Isobutyl Ketone			108.5		%		60-140	15-FEB-18
o-Xylene			102.7		%		70-130	15-FEB-18
Styrene			99.9		%		70-130	15-FEB-18
Tetrachloroethylene			105.8		%		60-130	15-FEB-18
Toluene			104.6		%		70-130	15-FEB-18

Quality Control Report

Client: G2S ENVIRONMENTAL CONSULTING, INC.
3370 S SERVICE ROAD SUITE 107
BURLINGTON ON L7N 3M6
Contact: DANA HASLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3961645								
WG2715905-2 LCS								
trans-1,2-Dichloroethylene			105.5		%		60-130	15-FEB-18
trans-1,3-Dichloropropene			104.6		%		70-130	15-FEB-18
Trichloroethylene			106.1		%		60-130	15-FEB-18
Trichlorofluoromethane			96.5		%		50-140	15-FEB-18
Vinyl chloride			78.3		%		60-140	15-FEB-18
WG2715905-1 MB								
1,1,1,2-Tetrachloroethane			<0.050		ug/g		0.05	15-FEB-18
1,1,2,2-Tetrachloroethane			<0.050		ug/g		0.05	15-FEB-18
1,1,1-Trichloroethane			<0.050		ug/g		0.05	15-FEB-18
1,1,2-Trichloroethane			<0.050		ug/g		0.05	15-FEB-18
1,1-Dichloroethane			<0.050		ug/g		0.05	15-FEB-18
1,1-Dichloroethylene			<0.050		ug/g		0.05	15-FEB-18
1,2-Dibromoethane			<0.050		ug/g		0.05	15-FEB-18
1,2-Dichlorobenzene			<0.050		ug/g		0.05	15-FEB-18
1,2-Dichloroethane			<0.050		ug/g		0.05	15-FEB-18
1,2-Dichloropropane			<0.050		ug/g		0.05	15-FEB-18
1,3-Dichlorobenzene			<0.050		ug/g		0.05	15-FEB-18
1,4-Dichlorobenzene			<0.050		ug/g		0.05	15-FEB-18
Acetone			<0.50		ug/g		0.5	15-FEB-18
Benzene			<0.0068		ug/g		0.0068	15-FEB-18
Bromodichloromethane			<0.050		ug/g		0.05	15-FEB-18
Bromoform			<0.050		ug/g		0.05	15-FEB-18
Bromomethane			<0.050		ug/g		0.05	15-FEB-18
Carbon tetrachloride			<0.050		ug/g		0.05	15-FEB-18
Chlorobenzene			<0.050		ug/g		0.05	15-FEB-18
Chloroform			<0.050		ug/g		0.05	15-FEB-18
cis-1,2-Dichloroethylene			<0.050		ug/g		0.05	15-FEB-18
cis-1,3-Dichloropropene			<0.030		ug/g		0.03	15-FEB-18
Dibromochloromethane			<0.050		ug/g		0.05	15-FEB-18
Dichlorodifluoromethane			<0.050		ug/g		0.05	15-FEB-18
Ethylbenzene			<0.018		ug/g		0.018	15-FEB-18
n-Hexane			<0.050		ug/g		0.05	15-FEB-18
Methylene Chloride			<0.050		ug/g		0.05	15-FEB-18
MTBE			<0.050		ug/g		0.05	15-FEB-18

Quality Control Report

Client: G2S ENVIRONMENTAL CONSULTING, INC.
3370 S SERVICE ROAD SUITE 107
BURLINGTON ON L7N 3M6
Contact: DANA HASLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3961645								
WG2715905-1 MB								
m+p-Xylenes			<0.030		ug/g		0.03	15-FEB-18
Methyl Ethyl Ketone			<0.50		ug/g		0.5	15-FEB-18
Methyl Isobutyl Ketone			<0.50		ug/g		0.5	15-FEB-18
o-Xylene			<0.020		ug/g		0.02	15-FEB-18
Styrene			<0.050		ug/g		0.05	15-FEB-18
Tetrachloroethylene			<0.050		ug/g		0.05	15-FEB-18
Toluene			<0.080		ug/g		0.08	15-FEB-18
trans-1,2-Dichloroethylene			<0.050		ug/g		0.05	15-FEB-18
trans-1,3-Dichloropropene			<0.030		ug/g		0.03	15-FEB-18
Trichloroethylene			<0.010		ug/g		0.01	15-FEB-18
Trichlorofluoromethane			<0.050		ug/g		0.05	15-FEB-18
Vinyl chloride			<0.020		ug/g		0.02	15-FEB-18
Surrogate: 1,4-Difluorobenzene			100.5		%		50-140	15-FEB-18
Surrogate: 4-Bromofluorobenzene			103.2		%		50-140	15-FEB-18
WG2715905-5 MS		**WG2715905-3**						
1,1,1,2-Tetrachloroethane			106.3		%		50-140	15-FEB-18
1,1,2,2-Tetrachloroethane			110.4		%		50-140	15-FEB-18
1,1,1-Trichloroethane			105.2		%		50-140	15-FEB-18
1,1,2-Trichloroethane			110.7		%		50-140	15-FEB-18
1,1-Dichloroethane			106.8		%		50-140	15-FEB-18
1,1-Dichloroethylene			96.4		%		50-140	15-FEB-18
1,2-Dibromoethane			108.9		%		50-140	15-FEB-18
1,2-Dichlorobenzene			109.9		%		50-140	15-FEB-18
1,2-Dichloroethane			106.9		%		50-140	15-FEB-18
1,2-Dichloropropane			112.3		%		50-140	15-FEB-18
1,3-Dichlorobenzene			107.0		%		50-140	15-FEB-18
1,4-Dichlorobenzene			109.9		%		50-140	15-FEB-18
Acetone			119.0		%		50-140	15-FEB-18
Benzene			111.3		%		50-140	15-FEB-18
Bromodichloromethane			104.0		%		50-140	15-FEB-18
Bromoform			105.2		%		50-140	15-FEB-18
Bromomethane			95.6		%		50-140	15-FEB-18
Carbon tetrachloride			103.2		%		50-140	15-FEB-18
Chlorobenzene			111.1		%		50-140	15-FEB-18

Quality Control Report

Client: G2S ENVIRONMENTAL CONSULTING, INC.
3370 S SERVICE ROAD SUITE 107
BURLINGTON ON L7N 3M6
Contact: DANA HASLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3961645								
WG2715905-5 MS		**WG2715905-3**						
Chloroform			108.4		%		50-140	15-FEB-18
cis-1,2-Dichloroethylene			109.7		%		50-140	15-FEB-18
cis-1,3-Dichloropropene			108.0		%		50-140	15-FEB-18
Dibromochloromethane			109.7		%		50-140	15-FEB-18
Dichlorodifluoromethane			39.5	K	%		50-140	15-FEB-18
Ethylbenzene			109.2		%		50-140	15-FEB-18
n-Hexane			107.0		%		50-140	15-FEB-18
Methylene Chloride			109.1		%		50-140	15-FEB-18
MTBE			109.6		%		50-140	15-FEB-18
m+p-Xylenes			109.7		%		50-140	15-FEB-18
Methyl Ethyl Ketone			123.6		%		50-140	15-FEB-18
Methyl Isobutyl Ketone			119.5		%		50-140	15-FEB-18
o-Xylene			108.6		%		50-140	15-FEB-18
Styrene			105.8		%		50-140	15-FEB-18
Tetrachloroethylene			108.7		%		50-140	15-FEB-18
Toluene			110.3		%		50-140	15-FEB-18
trans-1,2-Dichloroethylene			108.1		%		50-140	15-FEB-18
trans-1,3-Dichloropropene			107.5		%		50-140	15-FEB-18
Trichloroethylene			110.4		%		50-140	15-FEB-18
Trichlorofluoromethane			95.2		%		50-140	15-FEB-18
Vinyl chloride			76.5		%		50-140	15-FEB-18
Batch R3962041								
WG2715965-4 DUP		**WG2715965-3**						
1,1,1,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-FEB-18
1,1,2,2-Tetrachloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-FEB-18
1,1,1-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-FEB-18
1,1,2-Trichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-FEB-18
1,1-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-FEB-18
1,1-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-FEB-18
1,2-Dibromoethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-FEB-18
1,2-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-FEB-18
1,2-Dichloroethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-FEB-18
1,2-Dichloropropane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-FEB-18

Quality Control Report

Client: G2S ENVIRONMENTAL CONSULTING, INC.
3370 S SERVICE ROAD SUITE 107
BURLINGTON ON L7N 3M6
Contact: DANA HASLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3962041								
WG2715965-4 DUP		**WG2715965-3**						
1,3-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-FEB-18
1,4-Dichlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-FEB-18
Acetone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	16-FEB-18
Benzene		<0.0068	<0.0068	RPD-NA	ug/g	N/A	40	16-FEB-18
Bromodichloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-FEB-18
Bromoform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-FEB-18
Bromomethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-FEB-18
Carbon tetrachloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-FEB-18
Chlorobenzene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-FEB-18
Chloroform		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-FEB-18
cis-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-FEB-18
cis-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	16-FEB-18
Dibromochloromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-FEB-18
Dichlorodifluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-FEB-18
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	16-FEB-18
n-Hexane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-FEB-18
Methylene Chloride		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-FEB-18
MTBE		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-FEB-18
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	40	16-FEB-18
Methyl Ethyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	16-FEB-18
Methyl Isobutyl Ketone		<0.50	<0.50	RPD-NA	ug/g	N/A	40	16-FEB-18
o-Xylene		<0.020	<0.020	RPD-NA	ug/g	N/A	40	16-FEB-18
Styrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-FEB-18
Tetrachloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-FEB-18
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	16-FEB-18
trans-1,2-Dichloroethylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-FEB-18
trans-1,3-Dichloropropene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	16-FEB-18
Trichloroethylene		<0.010	<0.010	RPD-NA	ug/g	N/A	40	16-FEB-18
Trichlorofluoromethane		<0.050	<0.050	RPD-NA	ug/g	N/A	40	16-FEB-18
Vinyl chloride		<0.020	<0.020	RPD-NA	ug/g	N/A	40	16-FEB-18
WG2715965-2 LCS								
1,1,1,2-Tetrachloroethane			104.2		%		60-130	16-FEB-18
1,1,2,2-Tetrachloroethane			104.0		%		60-130	16-FEB-18

Quality Control Report

Client: G2S ENVIRONMENTAL CONSULTING, INC.
3370 S SERVICE ROAD SUITE 107
BURLINGTON ON L7N 3M6
Contact: DANA HASLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3962041								
WG2715965-2 LCS								
1,1,1-Trichloroethane			102.2		%		60-130	16-FEB-18
1,1,2-Trichloroethane			105.1		%		60-130	16-FEB-18
1,1-Dichloroethane			100.3		%		60-130	16-FEB-18
1,1-Dichloroethylene			90.6		%		60-130	16-FEB-18
1,2-Dibromoethane			105.8		%		70-130	16-FEB-18
1,2-Dichlorobenzene			104.8		%		70-130	16-FEB-18
1,2-Dichloroethane			105.2		%		60-130	16-FEB-18
1,2-Dichloropropane			109.9		%		70-130	16-FEB-18
1,3-Dichlorobenzene			102.1		%		70-130	16-FEB-18
1,4-Dichlorobenzene			104.4		%		70-130	16-FEB-18
Acetone			114.2		%		60-140	16-FEB-18
Benzene			106.3		%		70-130	16-FEB-18
Bromodichloromethane			101.6		%		50-140	16-FEB-18
Bromoform			105.7		%		70-130	16-FEB-18
Bromomethane			91.7		%		50-140	16-FEB-18
Carbon tetrachloride			98.0		%		70-130	16-FEB-18
Chlorobenzene			105.8		%		70-130	16-FEB-18
Chloroform			102.2		%		70-130	16-FEB-18
cis-1,2-Dichloroethylene			100.7		%		70-130	16-FEB-18
cis-1,3-Dichloropropene			112.3		%		70-130	16-FEB-18
Dibromochloromethane			107.2		%		60-130	16-FEB-18
Dichlorodifluoromethane			50.8		%		50-140	16-FEB-18
Ethylbenzene			105.2		%		70-130	16-FEB-18
n-Hexane			106.8		%		70-130	16-FEB-18
Methylene Chloride			103.4		%		70-130	16-FEB-18
MTBE			107.0		%		70-130	16-FEB-18
m+p-Xylenes			104.9		%		70-130	16-FEB-18
Methyl Ethyl Ketone			112.1		%		60-140	16-FEB-18
Methyl Isobutyl Ketone			114.8		%		60-140	16-FEB-18
o-Xylene			106.3		%		70-130	16-FEB-18
Styrene			108.1		%		70-130	16-FEB-18
Tetrachloroethylene			98.1		%		60-130	16-FEB-18
Toluene			105.0		%		70-130	16-FEB-18

Quality Control Report

Client: G2S ENVIRONMENTAL CONSULTING, INC.
3370 S SERVICE ROAD SUITE 107
BURLINGTON ON L7N 3M6
Contact: DANA HASLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch	**R3962041**							
WG2715965-2	**LCS**							
trans-1,2-Dichloroethylene			102.9		%		60-130	16-FEB-18
trans-1,3-Dichloropropene			115.3		%		70-130	16-FEB-18
Trichloroethylene			102.2		%		60-130	16-FEB-18
Trichlorofluoromethane			92.2		%		50-140	16-FEB-18
Vinyl chloride			76.1		%		60-140	16-FEB-18
WG2715965-1	**MB**							
1,1,1,2-Tetrachloroethane			<0.050		ug/g		0.05	16-FEB-18
1,1,2,2-Tetrachloroethane			<0.050		ug/g		0.05	16-FEB-18
1,1,1-Trichloroethane			<0.050		ug/g		0.05	16-FEB-18
1,1,2-Trichloroethane			<0.050		ug/g		0.05	16-FEB-18
1,1-Dichloroethane			<0.050		ug/g		0.05	16-FEB-18
1,1-Dichloroethylene			<0.050		ug/g		0.05	16-FEB-18
1,2-Dibromoethane			<0.050		ug/g		0.05	16-FEB-18
1,2-Dichlorobenzene			<0.050		ug/g		0.05	16-FEB-18
1,2-Dichloroethane			<0.050		ug/g		0.05	16-FEB-18
1,2-Dichloropropane			<0.050		ug/g		0.05	16-FEB-18
1,3-Dichlorobenzene			<0.050		ug/g		0.05	16-FEB-18
1,4-Dichlorobenzene			<0.050		ug/g		0.05	16-FEB-18
Acetone			<0.50		ug/g		0.5	16-FEB-18
Benzene			<0.0068		ug/g		0.0068	16-FEB-18
Bromodichloromethane			<0.050		ug/g		0.05	16-FEB-18
Bromoform			<0.050		ug/g		0.05	16-FEB-18
Bromomethane			<0.050		ug/g		0.05	16-FEB-18
Carbon tetrachloride			<0.050		ug/g		0.05	16-FEB-18
Chlorobenzene			<0.050		ug/g		0.05	16-FEB-18
Chloroform			<0.050		ug/g		0.05	16-FEB-18
cis-1,2-Dichloroethylene			<0.050		ug/g		0.05	16-FEB-18
cis-1,3-Dichloropropene			<0.030		ug/g		0.03	16-FEB-18
Dibromochloromethane			<0.050		ug/g		0.05	16-FEB-18
Dichlorodifluoromethane			<0.050		ug/g		0.05	16-FEB-18
Ethylbenzene			<0.018		ug/g		0.018	16-FEB-18
n-Hexane			<0.050		ug/g		0.05	16-FEB-18
Methylene Chloride			<0.050		ug/g		0.05	16-FEB-18
MTBE			<0.050		ug/g		0.05	16-FEB-18

Quality Control Report

Client: G2S ENVIRONMENTAL CONSULTING, INC.
3370 S SERVICE ROAD SUITE 107
BURLINGTON ON L7N 3M6
Contact: DANA HASLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3962041								
WG2715965-1 MB								
m+p-Xylenes			<0.030		ug/g		0.03	16-FEB-18
Methyl Ethyl Ketone			<0.50		ug/g		0.5	16-FEB-18
Methyl Isobutyl Ketone			<0.50		ug/g		0.5	16-FEB-18
o-Xylene			<0.020		ug/g		0.02	16-FEB-18
Styrene			<0.050		ug/g		0.05	16-FEB-18
Tetrachloroethylene			<0.050		ug/g		0.05	16-FEB-18
Toluene			<0.080		ug/g		0.08	16-FEB-18
trans-1,2-Dichloroethylene			<0.050		ug/g		0.05	16-FEB-18
trans-1,3-Dichloropropene			<0.030		ug/g		0.03	16-FEB-18
Trichloroethylene			<0.010		ug/g		0.01	16-FEB-18
Trichlorofluoromethane			<0.050		ug/g		0.05	16-FEB-18
Vinyl chloride			<0.020		ug/g		0.02	16-FEB-18
Surrogate: 1,4-Difluorobenzene			104.6		%		50-140	16-FEB-18
Surrogate: 4-Bromofluorobenzene			107.6		%		50-140	16-FEB-18
WG2715965-5 MS		**WG2715965-3**						
1,1,1,2-Tetrachloroethane			103.5		%		50-140	16-FEB-18
1,1,2,2-Tetrachloroethane			100.9		%		50-140	16-FEB-18
1,1,1-Trichloroethane			102.2		%		50-140	16-FEB-18
1,1,2-Trichloroethane			104.4		%		50-140	16-FEB-18
1,1-Dichloroethane			101.1		%		50-140	16-FEB-18
1,1-Dichloroethylene			91.0		%		50-140	16-FEB-18
1,2-Dibromoethane			105.7		%		50-140	16-FEB-18
1,2-Dichlorobenzene			103.3		%		50-140	16-FEB-18
1,2-Dichloroethane			104.7		%		50-140	16-FEB-18
1,2-Dichloropropane			108.3		%		50-140	16-FEB-18
1,3-Dichlorobenzene			100.6		%		50-140	16-FEB-18
1,4-Dichlorobenzene			102.7		%		50-140	16-FEB-18
Acetone			117.1		%		50-140	16-FEB-18
Benzene			105.5		%		50-140	16-FEB-18
Bromodichloromethane			100.6		%		50-140	16-FEB-18
Bromoform			103.6		%		50-140	16-FEB-18
Bromomethane			92.7		%		50-140	16-FEB-18
Carbon tetrachloride			98.3		%		50-140	16-FEB-18
Chlorobenzene			104.8		%		50-140	16-FEB-18

Quality Control Report

Client: G2S ENVIRONMENTAL CONSULTING, INC.
3370 S SERVICE ROAD SUITE 107
BURLINGTON ON L7N 3M6
Contact: DANA HASLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Soil**							
Batch R3962041								
WG2715965-5 MS		**WG2715965-3**						
Chloroform			102.4		%		50-140	16-FEB-18
cis-1,2-Dichloroethylene			100.8		%		50-140	16-FEB-18
cis-1,3-Dichloropropene			108.7		%		50-140	16-FEB-18
Dibromochloromethane			106.9		%		50-140	16-FEB-18
Dichlorodifluoromethane			52.9		%		50-140	16-FEB-18
Ethylbenzene			104.2		%		50-140	16-FEB-18
n-Hexane			108.1		%		50-140	16-FEB-18
Methylene Chloride			104.0		%		50-140	16-FEB-18
MTBE			106.6		%		50-140	16-FEB-18
m+p-Xylenes			103.6		%		50-140	16-FEB-18
Methyl Ethyl Ketone			111.3		%		50-140	16-FEB-18
Methyl Isobutyl Ketone			108.9		%		50-140	16-FEB-18
o-Xylene			104.9		%		50-140	16-FEB-18
Styrene			102.5		%		50-140	16-FEB-18
Tetrachloroethylene			98.5		%		50-140	16-FEB-18
Toluene			104.9		%		50-140	16-FEB-18
trans-1,2-Dichloroethylene			102.2		%		50-140	16-FEB-18
trans-1,3-Dichloropropene			112.1		%		50-140	16-FEB-18
Trichloroethylene			101.5		%		50-140	16-FEB-18
Trichlorofluoromethane			94.2		%		50-140	16-FEB-18
Vinyl chloride			77.0		%		50-140	16-FEB-18

Quality Control Report

Workorder: L2056150 Report Date: 21-FEB-18

Client: G2S ENVIRONMENTAL CONSULTING, INC.
3370 S SERVICE ROAD SUITE 107
BURLINGTON ON L7N 3M6
Contact: DANA HASLETT

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
K	Matrix Spike recovery outside ALS DQO due to sample matrix effects.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

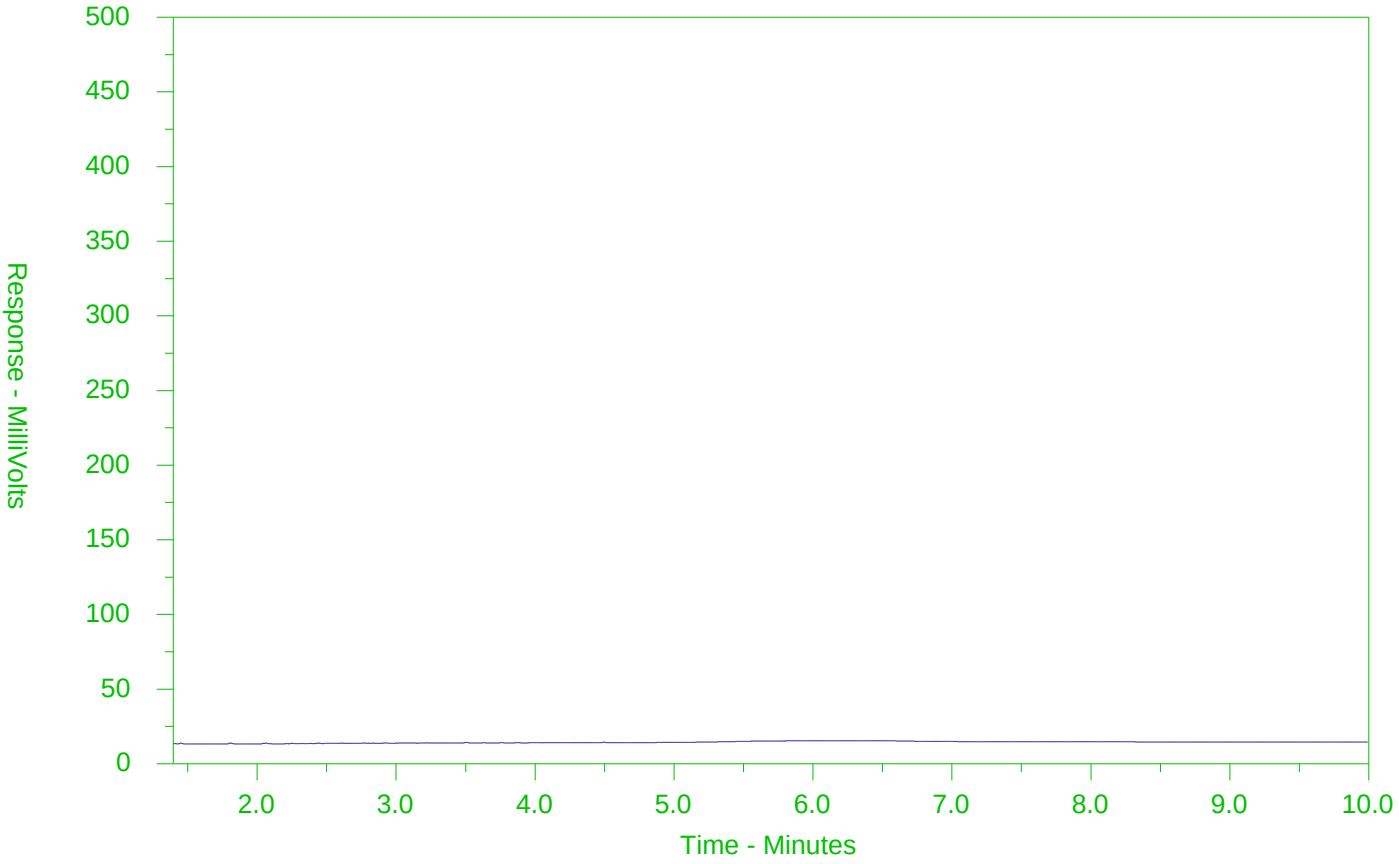
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2056150-2
Client Sample ID: BH101 SS6



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →	← Motor Oils/Lube Oils/Grease →		
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

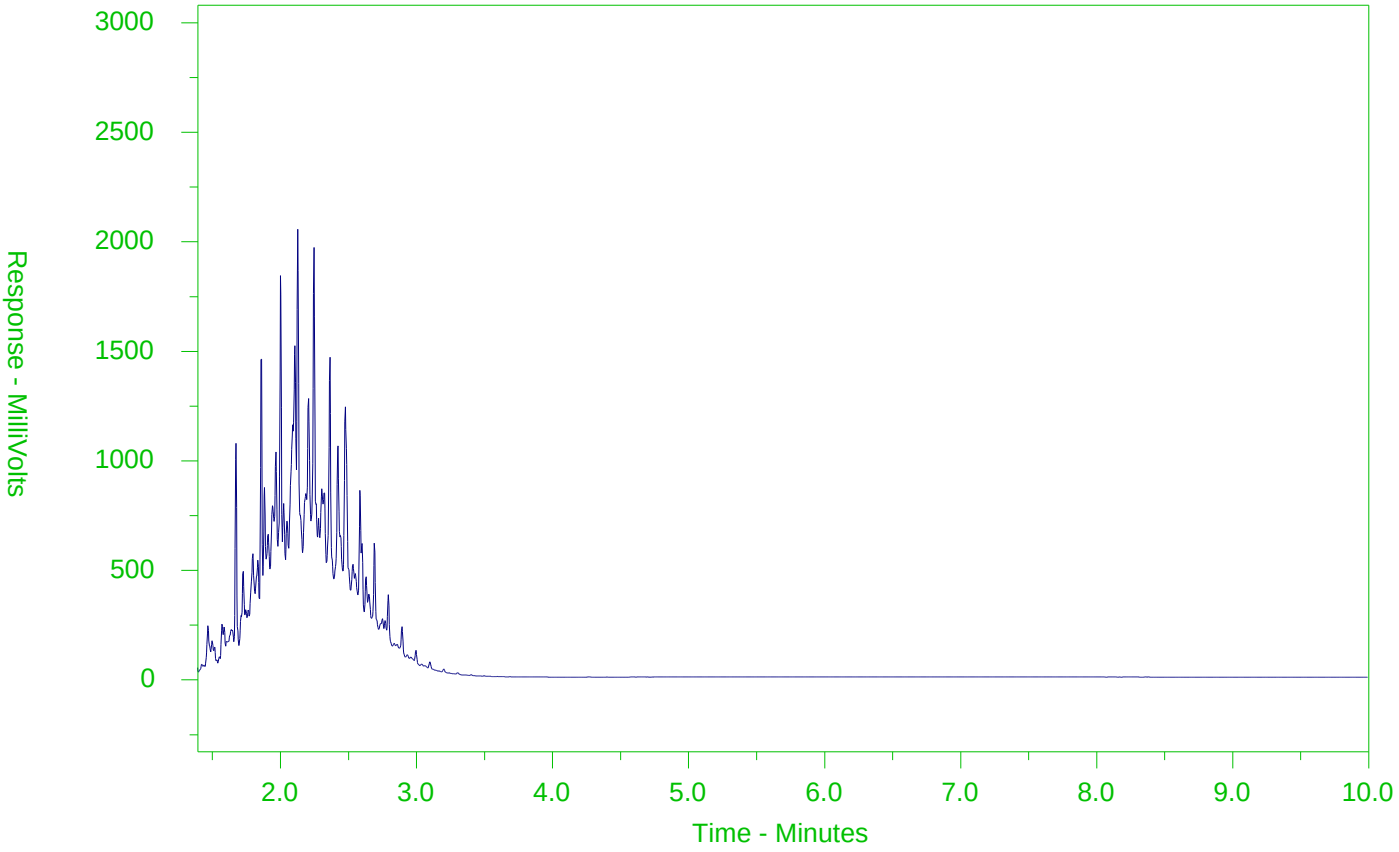
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2056150-4
Client Sample ID: BH102 SS4



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

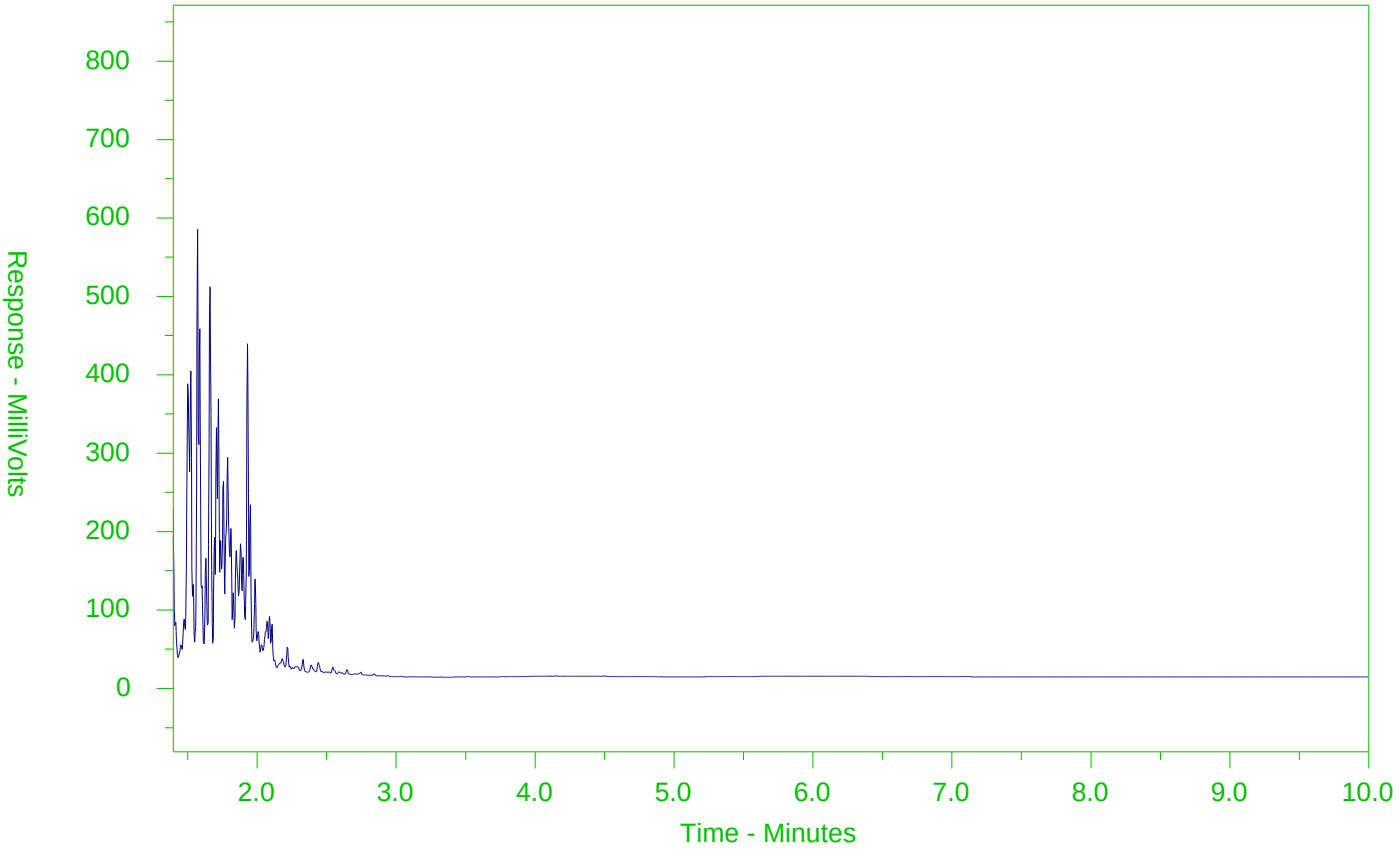
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2056150-7
Client Sample ID: BH103 SS6



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

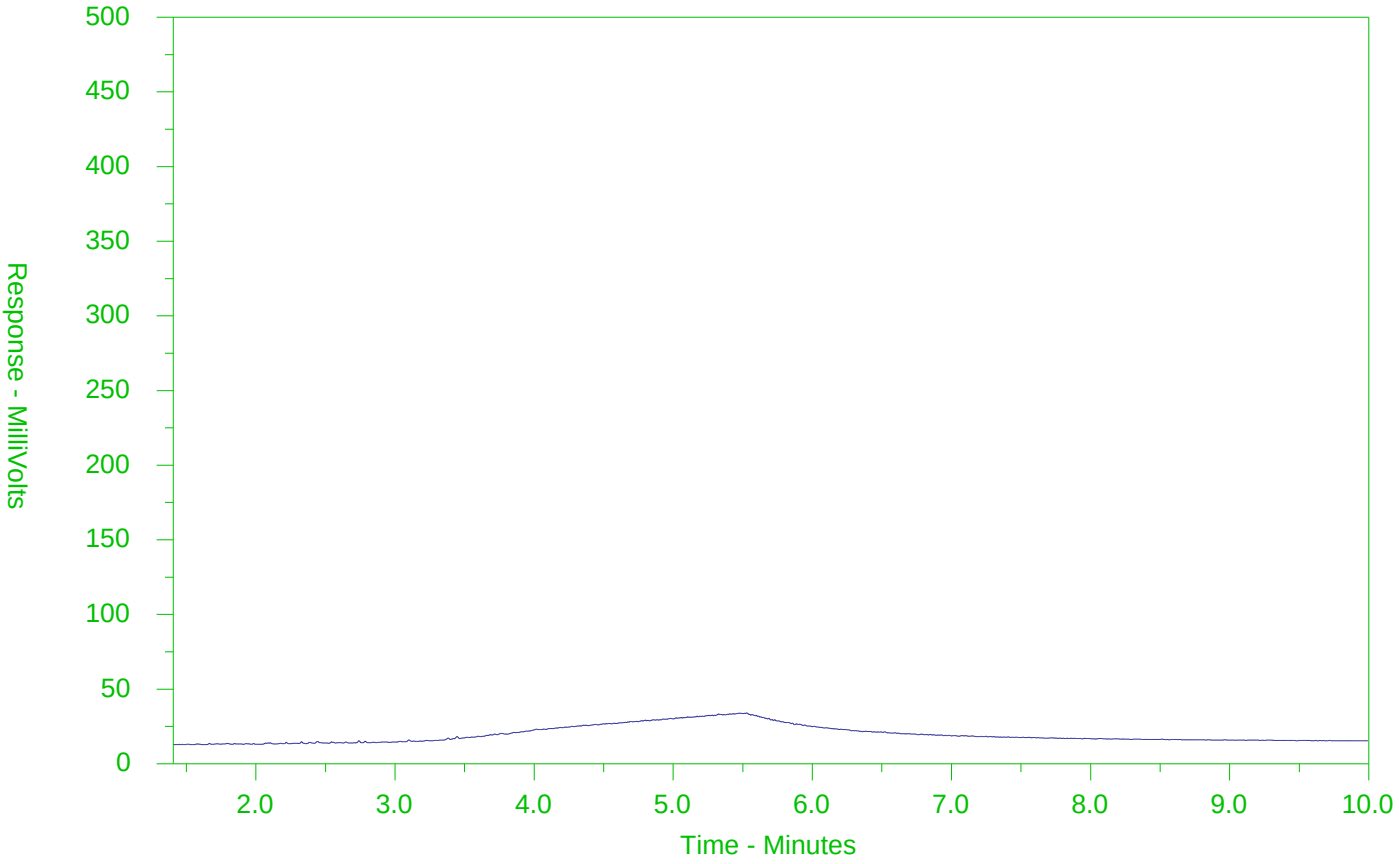
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2056150-8
Client Sample ID: BH104 SS5



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →	← Motor Oils/Lube Oils/Grease →		
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

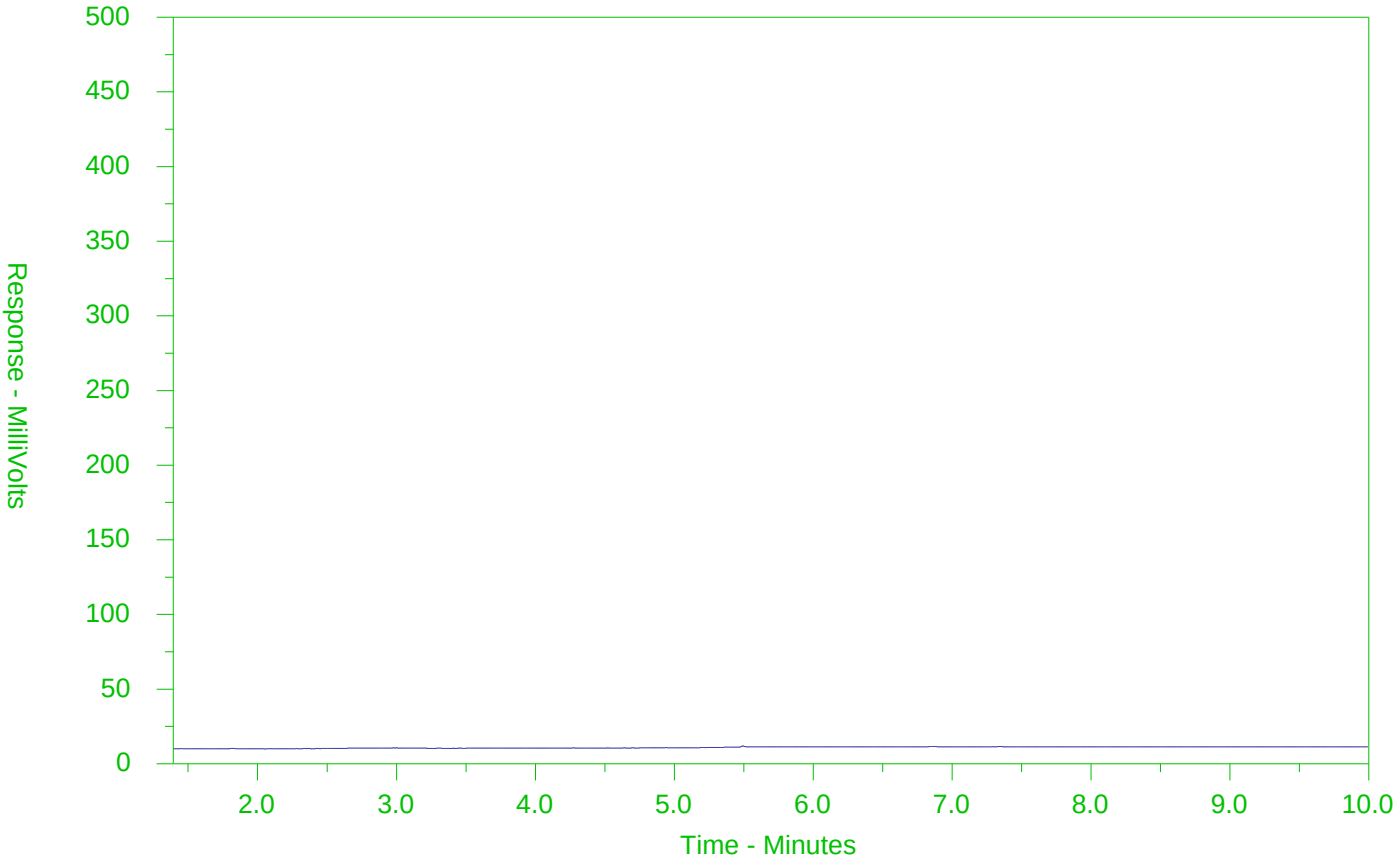
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2056150-10
Client Sample ID: BH105 SS5



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →	← Motor Oils/Lube Oils/Grease →		
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

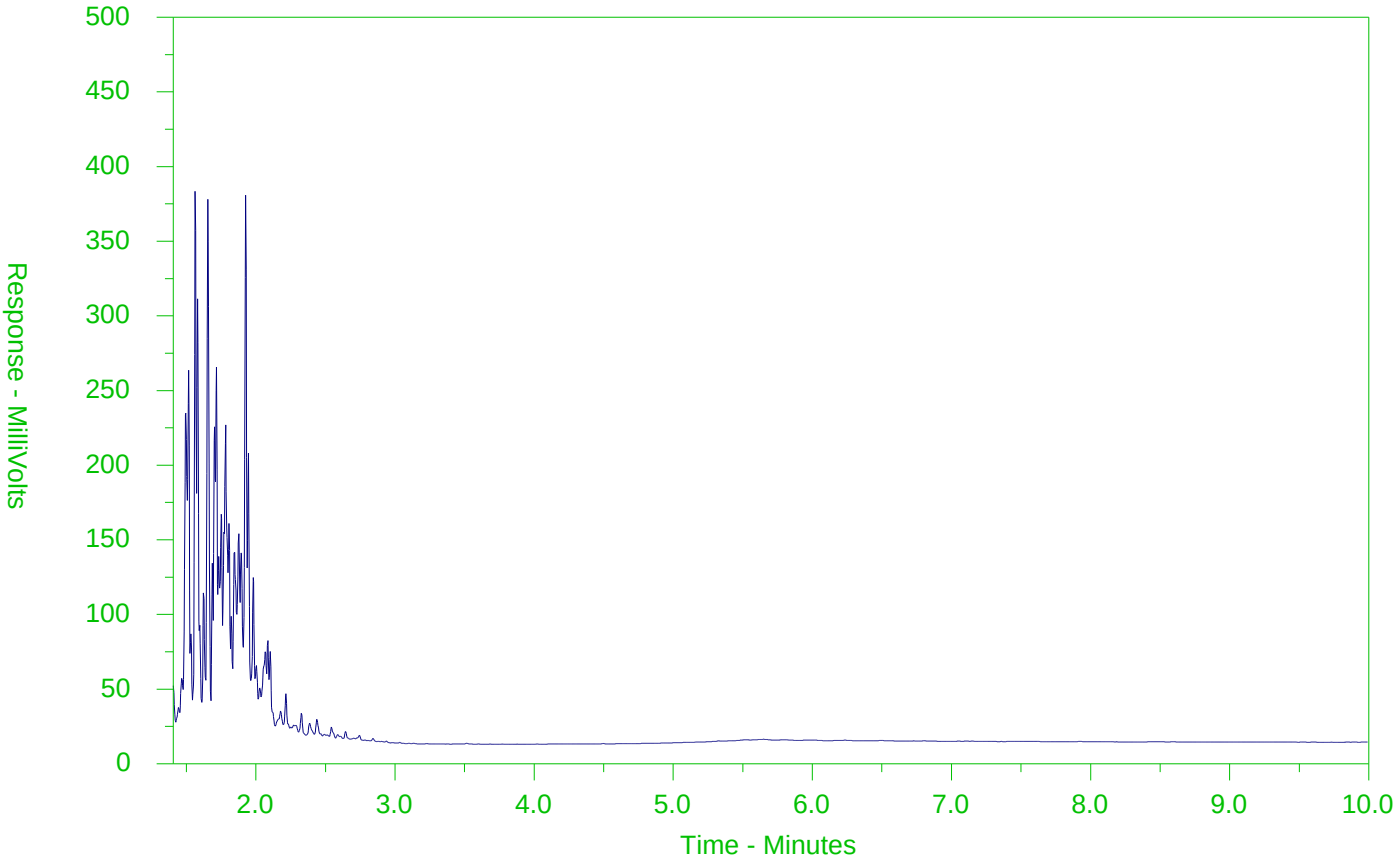
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2056150-12
Client Sample ID: BH123 SS6



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →	← Motor Oils/Lube Oils/Grease →		
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

Chain of Custody (COC) / Analytical Request Form

ALS Environmental
www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2056150-COFC

COC Number: 17 - 637677

Page 1 of 1

Report To	Contact and company name below will appear on the final report	Report Format / Distribution	Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)
Company:	G2S Environmental	Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)	Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply
Contact:	Dana Haslett	Quality Control (QC) Report with Report ☑ YES ☐ NO	PRIORITY (Business Days): 4 day [P4-20%] ☐ / 3 day [P3-25%] ☐ / 2 day [P2-50%] ☐
Phone:	905-331-3735	☑ Compare Results to Criteria on Report - provide details below if box checked	EMERGENCY: 1 Business day [E-100%] ☐ / Same Day, Weekend or Statutory holiday [E2-200% (Laboratory opening fees may apply)] ☐
	Company address below will appear on the final report	Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm
Street:	3370 S. Service Road, Suite 107	Email 1 or Fax danah@g2senvironmental.com	For tests that can not be performed according to the service level selected, you will be contacted.
City/Province:	Burlington, ON	Email 2 stevec@g2s...	
Postal Code:	L7N 3M6	Email 3 jackys@g2s...	
Invoice To	Same as Report To ☑ YES ☐ NO	Invoice Distribution	Analysis Request
	Copy of Invoice with Report ☑ YES ☐ NO	Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below
Company:		Email 1 or Fax	
Contact:		Email 2	

Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:	Std. Offer	AFE/Cost Center:	PO#
Job #:	G2S18006	Major/Minor Code:	Routing Code:
PO / AFE:		Requisitioner:	
LSD:		Location:	
ALS Lab Work Order # (lab use only):	L2056150	ALS Contact: Mathy	Sampler: DH / DM.

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Metals & Inorganics	PHCs + BTEX	PAHs	VOCs	pH	Grain Size (+75µg)	SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
1	BH101 SS1	08-Feb-18	13:00	SOIL	✓				✓				1
2	BH101 SS6	↓	↓	↓	✓	✓			✓	✓			3
3	BH102 SS2		15:00		✓								1
4	BH102 SS4		↓		✓	✓	✓						4
5	BH102 SS9		↓					✓					3
6	BH103 SS2	09-Feb-18	9:00		✓				✓				1
7	BH103 SS6	↓	↓	↓	✓	✓	✓	✓	✓				4
8	BH104 SS5		11:00			✓							3
9	BH104 SS7		↓					✓					3
10	BH105 SS5		12:40			✓							3
11	BH105 SS6		↓					✓					3
12	BH123 SS6		9:00			✓							2

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)
Are samples taken from a Regulated DW System? ☐ YES ☐ NO	Table 3 residential, coarse, RSC Site
Are samples for human consumption/ use? ☐ YES ☐ NO	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen	☐	SIF Observations	Yes ☐	No	☐
Ice Packs	☒	Ice Cubes ☒	Custody seal intact	Yes ☐	No ☐
Cooling Initiated	☒				

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
2.0°C				5.1			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
	Feb. 13/18		AARon Burton	13-Feb-2018	14:20	DM	13/02/18	16:45

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JULY 2017 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

G2S ENVIRONMENTAL CONSULTING, INC.
ATTN: DANA HASSLETT
3370 S SERVICE RD
BURLINGTON ON L2N 3M6

Date Received: 14-FEB-18
Report Date: 27-FEB-18 13:24 (MT)
Version: FINAL REV. 2

Client Phone: 905-766-4054

Certificate of Analysis

Lab Work Order #: L2056732

Project P.O. #: ESSA
Job Reference: G2S18006
C of C Numbers: 17-618276
Legal Site Desc:

Mathy Mahadeva
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

Summary of Guideline Exceedances

Guideline ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit
Ontario Regulation 153/04 - April 15, 2011 Standards - T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)						
L2056732-2	MW102	Volatile Organic Compounds	Chloroform	<4.2	2.4	ug/L
			1,2-Dibromoethane	<1.3	0.25	ug/L
			1,4-Dichlorobenzene	<10	8	ug/L
			1,1,2,2-Tetrachloroethane	<15	3.2	ug/L
			1,1,2-Trichloroethane	<12	4.7	ug/L
		Hydrocarbons	F1 (C6-C10)	14100	750	ug/L
			F1-BTEX	14100	750	ug/L
			F2 (C10-C16)	44900	150	ug/L
			F3 (C16-C34)	19900	500	ug/L
		Polycyclic Aromatic Hydrocarbons	Acenaphthylene	4.63	1.8	ug/L
			Anthracene	5.41	2.4	ug/L
			Benzo(g,h,i)perylene	<0.40	0.2	ug/L
			Indeno(1,2,3-cd)pyrene	<0.40	0.2	ug/L
L2056732-3	MW122	Volatile Organic Compounds	Chloroform	<6.6	2.4	ug/L
			1,2-Dibromoethane	<2.6	0.25	ug/L
			1,4-Dichlorobenzene	<13	8	ug/L
			1,1,2,2-Tetrachloroethane	<29	3.2	ug/L
		Hydrocarbons	F1 (C6-C10)	6440	750	ug/L
			F1-BTEX	6430	750	ug/L
			F2 (C10-C16)	38400	150	ug/L
			F3 (C16-C34)	14900	500	ug/L
		Polycyclic Aromatic Hydrocarbons	Acenaphthylene	4.28	1.8	ug/L
			Anthracene	5.80	2.4	ug/L
L2056732-4	MW103	Volatile Organic Compounds	Chloroform	<21	2.4	ug/L
			1,2-Dibromoethane	<1.8	0.25	ug/L
			cis-1,2-Dichloroethylene	<2.5	1.6	ug/L
			n-Hexane	66.0	51	ug/L
			1,1,2,2-Tetrachloroethane	<4.4	3.2	ug/L
		Hydrocarbons	F1 (C6-C10)	11100	750	ug/L
			F1-BTEX	9350	750	ug/L
			F2 (C10-C16)	5760	150	ug/L

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Physical Tests - WATER

		Guide Limits				
Lab ID				L2056732-2	L2056732-3	L2056732-4
Sample Date				13-FEB-18	13-FEB-18	13-FEB-18
Sample ID				MW102	MW122	MW103
Analyte	**Unit**	**#1**	**#2**			
Conductivity	mS/cm	-	-	1.32	1.33	2.86
pH	pH units	-	-	7.24	7.40	7.63

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Anions and Nutrients - WATER

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID	Sample Date	Sample ID
				L2056732-2	13-FEB-18	MW102
				L2056732-3	13-FEB-18	MW122
				L2056732-4	13-FEB-18	MW103
Chloride (Cl)	mg/L	2300	-	135 DLHC	155	730 DLHC

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

Cyanides - WATER

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID	Sample Date	Sample ID
				L2056732-2	13-FEB-18	MW102
				L2056732-3	13-FEB-18	MW122
				L2056732-4	13-FEB-18	MW103
Cyanide, Weak Acid Diss	ug/L	66	-	<2.0	<2.0	<2.0

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

ANALYTICAL REPORT

Dissolved Metals - WATER

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID	Sample Date	Sample ID
				L2056732-2	13-FEB-18	MW102
				L2056732-3	13-FEB-18	MW122
				L2056732-4	13-FEB-18	MW103
Dissolved Mercury Filtration Location		-	-	FIELD	FIELD	FIELD
Dissolved Metals Filtration Location		-	-	FIELD	FIELD	FIELD
Antimony (Sb)-Dissolved	ug/L	20000	-	<0.10	<0.10	<1.0 DLHC
Arsenic (As)-Dissolved	ug/L	1900	-	0.41	0.46	<1.0 DLHC
Barium (Ba)-Dissolved	ug/L	29000	-	232	236	358 DLHC
Beryllium (Be)-Dissolved	ug/L	67	-	<0.10	<0.10	<1.0 DLHC
Boron (B)-Dissolved	ug/L	45000	-	77	76	<100 DLHC
Cadmium (Cd)-Dissolved	ug/L	2.7	-	<0.010	<0.010	0.143 DLHC
Chromium (Cr)-Dissolved	ug/L	810	-	<0.50	<0.50	<5.0 DLHC
Cobalt (Co)-Dissolved	ug/L	66	-	2.63	2.63	1.5 DLHC
Copper (Cu)-Dissolved	ug/L	87	-	0.62	1.39	<2.0 DLHC
Lead (Pb)-Dissolved	ug/L	25	-	0.211	0.270	4.03 DLHC
Mercury (Hg)-Dissolved	ug/L	0.29	-	<0.010	<0.010	<0.010
Molybdenum (Mo)-Dissolved	ug/L	9200	-	1.44	1.36	1.70 DLHC
Nickel (Ni)-Dissolved	ug/L	490	-	2.10	2.13	<5.0 DLHC
Selenium (Se)-Dissolved	ug/L	63	-	2.19	1.95	0.70 DLHC
Silver (Ag)-Dissolved	ug/L	1.5	-	<0.050	<0.050	<0.50 DLHC
Sodium (Na)-Dissolved	ug/L	2300000	-	112000 DLHC	101000	398000 DLHC
Thallium (Tl)-Dissolved	ug/L	510	-	<0.010	<0.010	<0.10 DLHC
Uranium (U)-Dissolved	ug/L	420	-	1.21	1.21	2.28 DLHC
Vanadium (V)-Dissolved	ug/L	250	-	0.82	0.84	<5.0 DLHC
Zinc (Zn)-Dissolved	ug/L	1100	-	1.7	3.0	<10 DLHC

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Speciated Metals - WATER

		Guide Limits				
				Lab ID	L2056732-2	L2056732-3	L2056732-4
				Sample Date	13-FEB-18	13-FEB-18	13-FEB-18
				Sample ID	MW102	MW122	MW103
Analyte	**Unit**	**#1**	**#2**			
Chromium, Hexavalent	ug/L	140	-	<1.0	<1.0	<1.0

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Volatile Organic Compounds - WATER

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID	L2056732-1	L2056732-2	L2056732-3	L2056732-4	L2056732-5	L2056732-6	L2056732-7
				Sample Date	13-FEB-18	13-FEB-18	13-FEB-18	13-FEB-18	13-FEB-18	13-FEB-18	13-FEB-18
				Sample ID	MW101	MW102	MW122	MW103	MW105	TRIP BLANK	TRIP SPIKE
Acetone	%	-	-								99
Acetone	ug/L	130000	-		<30	<30	<30	<30	<30	<30	
Benzene	%	-	-								99.0
Benzene	ug/L	44	-		<0.50	<0.50	<0.50	<0.85 DLVH	<0.50	<0.50	
Bromodichloromethane	%	-	-								93.7
Bromodichloromethane	ug/L	85000	-		<2.0	<39 DLVH	<42 DLVH	<18 DLVH	<2.0	<2.0	
Bromoform	%	-	-								102
Bromoform	ug/L	380	-		<5.0	<5.0	<5.0	<5.0 RRR	<5.0	<5.0	
Bromomethane	%	-	-								94.9
Bromomethane	ug/L	5.6	-		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Carbon tetrachloride	%	-	-								97.0
Carbon tetrachloride	ug/L	0.79	-		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	
Chlorobenzene	%	-	-								102
Chlorobenzene	ug/L	630	-		<0.50	<0.50	<0.95 DLVH	<0.50	<0.50	<0.50	
Dibromochloromethane	%	-	-								104
Dibromochloromethane	ug/L	82000	-		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
Chloroform	%	-	-								99.6
Chloroform	ug/L	2.4	-		<1.0	<4.2 DLVH	<6.6 DLVH	<21 DLVH	<1.0	<1.0	
1,2-Dibromoethane	%	-	-								101
1,2-Dibromoethane	ug/L	0.25	-		<0.20	<1.3 DLVH	<2.6 DLVH	<1.8 DLVH	<0.20	<0.20	
1,2-Dichlorobenzene	%	-	-								98.8
1,2-Dichlorobenzene	ug/L	4600	-		<0.50	<10 DLI	<13 DLI	<0.50	<0.50	<0.50	
1,3-Dichlorobenzene	%	-	-								94.9
1,3-Dichlorobenzene	ug/L	9600	-		<0.50	<10 DLI	<13 DLI	<0.50	<0.50	<0.50	
1,4-Dichlorobenzene	%	-	-								95.9
1,4-Dichlorobenzene	ug/L	8	-		<0.50	<10 DLI	<13 DLI	<0.50	<0.50	<0.50	
Dichlorodifluoromethane	%	-	-								69.9
Dichlorodifluoromethane	ug/L	4400	-		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
1,1-Dichloroethane	%	-	-								98.3
1,1-Dichloroethane	ug/L	320	-		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Volatile Organic Compounds - WATER

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID	L2056732-1	L2056732-2	L2056732-3	L2056732-4	L2056732-5	L2056732-6	L2056732-7
				Sample Date	13-FEB-18	13-FEB-18	13-FEB-18	13-FEB-18	13-FEB-18	13-FEB-18	13-FEB-18
				Sample ID	MW101	MW102	MW122	MW103	MW105	TRIP BLANK	TRIP SPIKE
1,2-Dichloroethane	%	-	-								96.3
1,2-Dichloroethane	ug/L	1.6	-		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
1,1-Dichloroethylene	%	-	-								90.4
1,1-Dichloroethylene	ug/L	1.6	-		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
cis-1,2-Dichloroethylene	%	-	-								97.3
cis-1,2-Dichloroethylene	ug/L	1.6	-		<0.50	<0.50	<0.50	<2.5 DLVH	<0.50	<0.50	
trans-1,2-Dichloroethylene	%	-	-								97.0
trans-1,2-Dichloroethylene	ug/L	1.6	-		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Methylene Chloride	%	-	-								98.9
Methylene Chloride	ug/L	610	-		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	
1,2-Dichloropropane	%	-	-								99.9
1,2-Dichloropropane	ug/L	16	-		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
cis-1,3-Dichloropropene	%	-	-								99.0
cis-1,3-Dichloropropene	ug/L	-	-		<0.30	<0.30	<0.30	<0.99 DLVH	<0.30	<0.30	
trans-1,3-Dichloropropene	%	-	-								101
trans-1,3-Dichloropropene	ug/L	-	-		<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	
1,3-Dichloropropene (cis & trans)	ug/L	5.2	-		<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	
Ethylbenzene	%	-	-								98.5
Ethylbenzene	ug/L	2300	-		<0.50	0.67	0.92	171	<0.50	<0.50	
n-Hexane	%	-	-								73.2
n-Hexane	ug/L	51	-		<0.50	16.3	14.5	66.0	<0.50	<0.50	
Methyl Ethyl Ketone	%	-	-								90
Methyl Ethyl Ketone	ug/L	470000	-		<20	<20	<20	<56 DLVH	<20	<20	
Methyl Isobutyl Ketone	%	-	-								106
Methyl Isobutyl Ketone	ug/L	140000	-		<20	<20	<20	<20	<20	<20	
MTBE	%	-	-								95.7
MTBE	ug/L	190	-		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
Styrene	%	-	-								101
Styrene	ug/L	1300	-		<0.50	<0.50	<0.50	1.09	<0.50	<0.50	
1,1,1,2-Tetrachloroethane	%	-	-								102

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Volatile Organic Compounds - WATER

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID	L2056732-1	L2056732-2	L2056732-3	L2056732-4	L2056732-5	L2056732-6	L2056732-7
				Sample Date	13-FEB-18	13-FEB-18	13-FEB-18	13-FEB-18	13-FEB-18	13-FEB-18	13-FEB-18
				Sample ID	MW101	MW102	MW122	MW103	MW105	TRIP BLANK	TRIP SPIKE
1,1,1,2-Tetrachloroethane	ug/L	3.3	-		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
1,1,2,2-Tetrachloroethane	%	-	-								102
1,1,2,2-Tetrachloroethane	ug/L	3.2	-		<0.50	<15 DLVH	<29 DLVH	<4.4 DLVH	<0.50	<0.50	
Tetrachloroethylene	%	-	-								99.1
Tetrachloroethylene	ug/L	1.6	-		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Toluene	%	-	-								100
Toluene	ug/L	18000	-		<0.50	<0.55 DLVH	<0.70 DLVH	35.1	<0.50	<0.50	
1,1,1-Trichloroethane	%	-	-								99.0
1,1,1-Trichloroethane	ug/L	640	-		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
1,1,2-Trichloroethane	%	-	-								102
1,1,2-Trichloroethane	ug/L	4.7	-		<0.50	<12 DLVH	<1.5 DLVH	<3.2 DLVH	<0.50	<0.50	
Trichloroethylene	%	-	-								98.9
Trichloroethylene	ug/L	1.6	-		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Trichlorofluoromethane	%	-	-								98.6
Trichlorofluoromethane	ug/L	2500	-		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	
Vinyl chloride	%	-	-								94.0
Vinyl chloride	ug/L	0.5	-		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
o-Xylene	%	-	-								101
o-Xylene	ug/L	-	-		<0.30	<1.2 DLVH	<0.99 DLVH	317	<0.30	<0.30	
m+p-Xylenes	%	-	-								97.9
m+p-Xylenes	ug/L	-	-		<0.40	2.27	2.13	1210 DLHC	<0.40	<0.40	
Xylenes (Total)	ug/L	4200	-		<0.50	2.3	2.1	1530	<0.50	<0.50	
Surrogate: 4-Bromofluorobenzene	%	-	-		97.0	101.8	104.1	104.1	97.6	96.8	98.2
Surrogate: 1,4-Difluorobenzene	%	-	-		93.8	107.8	110.9	102.0	93.4	93.4	92.3

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Hydrocarbons - WATER

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID / Sample Date / Sample ID: L2056732-1 13-FEB-18 MW101	L2056732-2 13-FEB-18 MW102	L2056732-3 13-FEB-18 MW122	L2056732-4 13-FEB-18 MW103	L2056732-5 13-FEB-18 MW105
F1 (C6-C10)	ug/L	750	-	<25	14100 RHR	6440 DLHC	11100 DLHC	<25
F1-BTEX	ug/L	750	-	<25	14100	6430	9350	<25
F2 (C10-C16)	ug/L	150	-	<100	44900	38400	5760	<100
F2-Naphth	ug/L	-	-		44900	38400	5450	
F3 (C16-C34)	ug/L	500	-	<250	19900	14900	<250	<250
F3-PAH	ug/L	-	-		19800	14800	<250	
F4 (C34-C50)	ug/L	500	-	<250	<250	<250	<250	<250
Total Hydrocarbons (C6-C50)	ug/L	-	-	<370	78900	59700	16800	<370
Chrom. to baseline at nC50		-	-	YES	YES	YES	YES	YES
Surrogate: 2-Bromobenzotrifluoride	%	-	-	103.8	127.2	116.8	140.5 SOL:MI	99.1
Surrogate: 3,4-Dichlorotoluene	%	-	-	79.5	99.0	117.0	88.5	62.1

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Polycyclic Aromatic Hydrocarbons - WATER

			Lab ID	L2056732-2	L2056732-3	L2056732-4
			Sample Date	13-FEB-18	13-FEB-18	13-FEB-18
			Sample ID	MW102	MW122	MW103
Analyte	**Unit**	**Guide Limits #1**	**#2**			
Acenaphthene	ug/L	600	-	7.88 DLM	<11.0 DLQ	0.319 R
Acenaphthylene	ug/L	1.8	-	4.63 DLM	4.28 DLM	0.151
Anthracene	ug/L	2.4	-	5.41 DLM	5.80 DLM	0.052
Benzo(a)anthracene	ug/L	4.7	-	<0.40 DLM	0.152 DLM	<0.020
Benzo(a)pyrene	ug/L	0.81	-	<0.40 DLM	<0.040 DLM	<0.010
Benzo(b)fluoranthene	ug/L	0.75	-	<0.40 DLM	0.072 DLM	<0.020
Benzo(g,h,i)perylene	ug/L	0.2	-	<0.40 DLM	0.044 DLM	<0.020
Benzo(k)fluoranthene	ug/L	0.4	-	<0.40 DLM	<0.040 DLM	<0.020
Chrysene	ug/L	1	-	0.43 DLM	0.276 DLM	<0.020
Dibenzo(ah)anthracene	ug/L	0.52	-	<0.40 DLM	<0.040 DLM	<0.020
Fluoranthene	ug/L	130	-	1.06 DLM	1.01 DLM	0.064
Fluorene	ug/L	400	-	26.7 DLM	27.5 DLM	0.484
Indeno(1,2,3-cd)pyrene	ug/L	0.2	-	<0.40 DLM	0.040 DLM	<0.020
1+2-Methylnaphthalenes	ug/L	1800	-	169	157	253
1-Methylnaphthalene	ug/L	1800	-	47.1 DLM	41.5 DLM	79.9 DLHC
2-Methylnaphthalene	ug/L	1800	-	122 DLM	115 DLHC	173 DLHC
Naphthalene	ug/L	1400	-	<8.0 DLQ	<14.0 DLQ	311 DLHC
Phenanthrene	ug/L	580	-	70.3 DLM	70.2 DLM	0.712
Pyrene	ug/L	68	-	4.12 DLM	3.33 DLM	0.098
Surrogate: d10-Acenaphthene	%	-	-	N/A SDO:R NA	112.7	76.0
Surrogate: d12-Chrysene	%	-	-	N/A SDO:R NA	97.7	99.2
Surrogate: d8-Naphthalene	%	-	-	N/A SDO:R NA	62.7	99.8
Surrogate: d10-Phenanthrene	%	-	-	N/A SDO:R NA	111.1	77.5

Guide Limit #1: T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Reference Information

Qualifiers for Individual Parameters Listed:

Qualifier	Description
R	The ion abundance ratio(s) did not meet the acceptance criteria. Value is an estimated maximum.
DLQ	Detection Limit raised due to co-eluting interference. GCMS qualifier ion ratio did not meet acceptance criteria.
DLVH	Detection Limit raised due to interference from Volatile Hydrocarbons on VOC method. Chromatographic elution of interfering peaks in the same region as test analytes prevents a

Reference Information

	determination of whether VOC analyte is present or absent (above/below regular detection limits).
DLI	Detection Limit Raised: Dilution required to address Internal Standard response problems caused by matrix interference.
RHR	Reported Highest Result: Sample is not homogenous.
SOL:MI	Surrogate recovery outside acceptable limits due to matrix interference
SDO:RNA	Surrogate diluted out:% recovery not available
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).
RRR	Refer to Report Remarks for issues regarding this analysis

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
CL-IC-N-WT	Water	Chloride by IC	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CN-WAD-R511-WT	Water	Cyanide (WAD)-O.Reg 153/04	APHA 4500CN I-Weak acid Dist Colorimet

Weak acid dissociable cyanide (WAD) is determined by undergoing a distillation procedure. Cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CR-CR6-IC-R511-WT	Water	Hex Chrom-O.Reg 153/04 (July 2011)	EPA 7199

This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution. Chromium (III) is calculated as the difference between the total chromium and the chromium (VI) results.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

EC-R511-WT	Water	Conductivity-O.Reg 153/04 (July 2011)	APHA 2510 B

Water samples can be measured directly by immersing the conductivity cell into the sample.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

F1-F4-511-CALC-WT	Water	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-L

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-HS-511-WT	Water	F1-O.Reg 153/04 (July 2011)	E3398/CCME TIER 1-HS

Fraction F1 is determined by analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F2-F4-511-WT	Water	F2-F4-O.Reg 153/04 (July 2011)	EPA 3511/CCME Tier 1

Petroleum Hydrocarbons (F2-F4 fractions) are extracted from water using a hexane micro-extraction technique. Instrumental analysis is by GC-FID, as per the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Tier 1 Method, CCME, 2001.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

HG-D-UG/L-CVAA-WT	Water	Diss. Mercury in Water by CVAAS (ug/L)	EPA 1631E (mod)

Water samples are filtered (0.45 um), preserved with hydrochloric acid, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

MET-D-UG/L-MS-WT	Water	Diss. Metals in Water by ICPMS (ug/L)	EPA 200.8

The metal constituents of a non-acidified sample that pass through a membrane filter prior to ICP/MS analysis.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

METHYLNAPS-CALC-WT	Water	PAH-Calculated Parameters	SW846 8270
PAH-511-WT	Water	PAH-O. Reg 153/04 (July 2011)	SW846 3510/8270

Aqueous samples, fortified with surrogates, are extracted using liquid/liquid extraction technique. The sample extracts are concentrated and then analyzed using GC/MS. Results for benzo(b) fluoranthene may include contributions from benzo(j)fluoranthene, if also present in the sample.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

PH-WT	Water	pH	APHA 4500 H-Electrode

Water samples are analyzed directly by a calibrated pH meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011). Holdtime for samples under this regulation is 28 days

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
VOC-1,3-DCP-CALC-WT	Water	Regulation 153 VOCs	SW8260B/SW8270C
VOC-511-HS-WT	Water	VOC by GCMS HS O.Reg 153/04 (July 2011)	SW846 8260

Liquid samples are analyzed by headspace GC/MSD.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

XYLENES-SUM-CALC-WT	Water	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

**ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody Numbers:

17-618276

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information.

Quality Control Report

Workorder: L2056732 Report Date: 27-FEB-18

Client: G2S ENVIRONMENTAL CONSULTING, INC.
3370 S SERVICE RD
BURLINGTON ON L2N 3M6
Contact: DANA HASSLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CL-IC-N-WT	**Water**							
Batch R3962672								
WG2716805-10 DUP		**WG2716805-8**						
Chloride (Cl)		197	196		mg/L	0.1	20	15-FEB-18
WG2716805-7 LCS								
Chloride (Cl)			101.4		%		90-110	15-FEB-18
WG2716805-6 MB								
Chloride (Cl)			<0.50		mg/L		0.5	15-FEB-18
WG2716805-9 MS		**WG2716805-8**						
Chloride (Cl)			N/A	MS-B	%		-	15-FEB-18
Batch R3966030								
WG2717633-4 DUP		**WG2717633-3**						
Chloride (Cl)		27.5	27.6		mg/L	0.3	20	16-FEB-18
WG2717633-2 LCS								
Chloride (Cl)			100.6		%		90-110	16-FEB-18
WG2717633-1 MB								
Chloride (Cl)			<0.50		mg/L		0.5	16-FEB-18
WG2717633-5 MS		**WG2717633-3**						
Chloride (Cl)			100.1		%		75-125	16-FEB-18
CN-WAD-R511-WT	**Water**							
Batch R3966088								
WG2717761-3 DUP		**L2057359-2**						
Cyanide, Weak Acid Diss		<2.0	<2.0	RPD-NA	ug/L	N/A	20	16-FEB-18
WG2717761-2 LCS								
Cyanide, Weak Acid Diss			107.6		%		80-120	16-FEB-18
WG2717761-1 MB								
Cyanide, Weak Acid Diss			<2.0		ug/L		2	16-FEB-18
WG2717761-4 MS		**L2057359-2**						
Cyanide, Weak Acid Diss			102.8		%		70-130	16-FEB-18
CR-CR6-IC-R511-WT	**Water**							
Batch R3965987								
WG2717583-4 DUP		**WG2717583-3**						
Chromium, Hexavalent		<1.0	<1.0	RPD-NA	ug/L	N/A	20	16-FEB-18
WG2717583-2 LCS								
Chromium, Hexavalent			106.5		%		80-120	16-FEB-18
WG2717583-1 MB								
Chromium, Hexavalent			<1.0		ug/L		1	16-FEB-18
WG2717583-5 MS		**WG2717583-3**						
Chromium, Hexavalent			111.8		%		70-130	16-FEB-18

Quality Control Report

Client: G2S ENVIRONMENTAL CONSULTING, INC.
3370 S SERVICE RD
BURLINGTON ON L2N 3M6
Contact: DANA HASSLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
EC-R511-WT	**Water**							
Batch R3961670								
WG2716704-4 DUP		**WG2716704-3**						
Conductivity		3.27	3.25		mS/cm	0.6	10	15-FEB-18
WG2716704-2 LCS								
Conductivity			99.0		%		90-110	15-FEB-18
WG2716704-1 MB								
Conductivity			<0.0030		mS/cm		0.003	15-FEB-18
Batch R3962156								
WG2717497-4 DUP		**WG2717497-3**						
Conductivity		1.32	1.32		mS/cm	0.2	10	16-FEB-18
WG2717497-2 LCS								
Conductivity			98.0		%		90-110	16-FEB-18
WG2717497-1 MB								
Conductivity			<0.0030		mS/cm		0.003	16-FEB-18
F1-HS-511-WT	**Water**							
Batch R3961385								
WG2715941-4 DUP		**WG2715941-3**						
F1 (C6-C10)		<25	<25	RPD-NA	ug/L	N/A	30	15-FEB-18
WG2715941-1 LCS								
F1 (C6-C10)			109.2		%		80-120	15-FEB-18
WG2715941-2 MB								
F1 (C6-C10)			<25		ug/L		25	15-FEB-18
Surrogate: 3,4-Dichlorotoluene			103.0		%		60-140	15-FEB-18
WG2715941-5 MS		**WG2715941-3**						
F1 (C6-C10)			102.7		%		60-140	15-FEB-18
Batch R3962176								
WG2715373-1 LCS								
F1 (C6-C10)			104.9		%		80-120	16-FEB-18
WG2715373-2 MB								
F1 (C6-C10)			<25		ug/L		25	16-FEB-18
Surrogate: 3,4-Dichlorotoluene			102.0		%		60-140	16-FEB-18
Batch R3962253								
WG2714931-4 DUP		**WG2714931-3**						
F1 (C6-C10)		<25	<25	RPD-NA	ug/L	N/A	30	16-FEB-18
WG2714931-1 LCS								
F1 (C6-C10)			104.6		%		80-120	16-FEB-18
WG2714931-2 MB								
F1 (C6-C10)			<25		ug/L		25	16-FEB-18

Quality Control Report

Client: G2S ENVIRONMENTAL CONSULTING, INC.
3370 S SERVICE RD
BURLINGTON ON L2N 3M6
Contact: DANA HASSLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT	**Water**							
Batch R3962253								
WG2714931-2 MB								
Surrogate: 3,4-Dichlorotoluene			95.2		%		60-140	16-FEB-18
WG2714931-5 MS		**WG2714931-3**						
F1 (C6-C10)			93.5		%		60-140	16-FEB-18
F2-F4-511-WT	**Water**							
Batch R3962111								
WG2716706-2 LCS								
F2 (C10-C16)			116.2		%		70-130	15-FEB-18
F3 (C16-C34)			116.5		%		70-130	15-FEB-18
F4 (C34-C50)			114.5		%		70-130	15-FEB-18
WG2716706-3 LCSD		**WG2716706-2**						
F2 (C10-C16)		116.2	110.0		%	5.5	50	15-FEB-18
F3 (C16-C34)		116.5	113.2		%	2.9	50	15-FEB-18
F4 (C34-C50)		114.5	113.0		%	1.3	50	15-FEB-18
WG2716706-1 MB								
F2 (C10-C16)			<100		ug/L		100	15-FEB-18
F3 (C16-C34)			<250		ug/L		250	15-FEB-18
F4 (C34-C50)			<250		ug/L		250	15-FEB-18
Surrogate: 2-Bromobenzotrifluoride			108.6		%		60-140	15-FEB-18
Batch R3965813								
WG2717468-2 LCS								
F2 (C10-C16)			106.4		%		70-130	16-FEB-18
F3 (C16-C34)			105.1		%		70-130	16-FEB-18
F4 (C34-C50)			106.2		%		70-130	16-FEB-18
WG2717468-3 LCSD		**WG2717468-2**						
F2 (C10-C16)		106.4	119.5		%	12	50	16-FEB-18
F3 (C16-C34)		105.1	119.0		%	12	50	16-FEB-18
F4 (C34-C50)		106.2	119.8		%	12	50	16-FEB-18
WG2717468-1 MB								
F2 (C10-C16)			<100		ug/L		100	16-FEB-18
F3 (C16-C34)			<250		ug/L		250	16-FEB-18
F4 (C34-C50)			<250		ug/L		250	16-FEB-18
Surrogate: 2-Bromobenzotrifluoride			103.9		%		60-140	16-FEB-18
HG-D-UG/L-CVAA-WT	**Water**							

Quality Control Report

Client: G2S ENVIRONMENTAL CONSULTING, INC.
3370 S SERVICE RD
BURLINGTON ON L2N 3M6
Contact: DANA HASSLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-D-UG/L-CVAA-WT	**Water**							
Batch R3961587								
WG2716781-4 DUP		**WG2716781-3**						
Mercury (Hg)-Dissolved		<0.010	<0.010	RPD-NA	ug/L	N/A	20	15-FEB-18
WG2716781-2 LCS								
Mercury (Hg)-Dissolved			108.0		%		80-120	15-FEB-18
WG2716781-1 MB								
Mercury (Hg)-Dissolved			<0.010		ug/L		0.01	15-FEB-18
WG2716781-6 MS		**WG2716781-5**						
Mercury (Hg)-Dissolved			85.1		%		70-130	15-FEB-18
MET-D-UG/L-MS-WT	**Water**							
Batch R3961949								
WG2716644-4 DUP		**WG2716644-3**						
Antimony (Sb)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	15-FEB-18
Arsenic (As)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	15-FEB-18
Barium (Ba)-Dissolved		236	236		ug/L	0.2	20	15-FEB-18
Beryllium (Be)-Dissolved		<1.0	<1.0	RPD-NA	ug/L	N/A	20	15-FEB-18
Boron (B)-Dissolved		<100	<100	RPD-NA	ug/L	N/A	20	15-FEB-18
Cadmium (Cd)-Dissolved		<0.050	0.051	RPD-NA	ug/L	N/A	20	15-FEB-18
Chromium (Cr)-Dissolved		<5.0	<5.0	RPD-NA	ug/L	N/A	20	15-FEB-18
Cobalt (Co)-Dissolved		2.4	2.3		ug/L	3.7	20	15-FEB-18
Copper (Cu)-Dissolved		<2.0	<2.0	RPD-NA	ug/L	N/A	20	15-FEB-18
Lead (Pb)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	15-FEB-18
Molybdenum (Mo)-Dissolved		2.99	2.99		ug/L	0.0	20	15-FEB-18
Nickel (Ni)-Dissolved		10.7	10.9		ug/L	1.2	20	15-FEB-18
Selenium (Se)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	15-FEB-18
Silver (Ag)-Dissolved		<0.50	<0.50	RPD-NA	ug/L	N/A	20	15-FEB-18
Sodium (Na)-Dissolved		466000	463000		ug/L	0.8	20	15-FEB-18
Thallium (Tl)-Dissolved		<0.10	<0.10	RPD-NA	ug/L	N/A	20	15-FEB-18
Uranium (U)-Dissolved		3.02	3.13		ug/L	3.6	20	15-FEB-18
Vanadium (V)-Dissolved		<5.0	<5.0	RPD-NA	ug/L	N/A	20	15-FEB-18
Zinc (Zn)-Dissolved		791	784		ug/L	0.9	20	15-FEB-18
WG2716644-2 LCS								
Antimony (Sb)-Dissolved			97.6		%		80-120	15-FEB-18
Arsenic (As)-Dissolved			100.7		%		80-120	15-FEB-18
Barium (Ba)-Dissolved			106.2		%		80-120	15-FEB-18
Beryllium (Be)-Dissolved			101.2		%		80-120	15-FEB-18

Quality Control Report

Client: G2S ENVIRONMENTAL CONSULTING, INC.
3370 S SERVICE RD
BURLINGTON ON L2N 3M6
Contact: DANA HASSLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT	**Water**							
Batch	**R3961949**							
WG2716644-2	**LCS**							
Boron (B)-Dissolved			101.0		%		80-120	15-FEB-18
Cadmium (Cd)-Dissolved			104.7		%		80-120	15-FEB-18
Chromium (Cr)-Dissolved			100.4		%		80-120	15-FEB-18
Cobalt (Co)-Dissolved			98.9		%		80-120	15-FEB-18
Copper (Cu)-Dissolved			98.3		%		80-120	15-FEB-18
Lead (Pb)-Dissolved			102.9		%		80-120	15-FEB-18
Molybdenum (Mo)-Dissolved			101.9		%		80-120	15-FEB-18
Nickel (Ni)-Dissolved			99.97		%		80-120	15-FEB-18
Selenium (Se)-Dissolved			98.8		%		80-120	15-FEB-18
Silver (Ag)-Dissolved			97.1		%		80-120	15-FEB-18
Sodium (Na)-Dissolved			96.5		%		80-120	15-FEB-18
Thallium (Tl)-Dissolved			95.6		%		80-120	15-FEB-18
Uranium (U)-Dissolved			103.2		%		80-120	15-FEB-18
Vanadium (V)-Dissolved			102.5		%		80-120	15-FEB-18
Zinc (Zn)-Dissolved			95.4		%		80-120	15-FEB-18
WG2716644-1	**MB**							
Antimony (Sb)-Dissolved			<0.10		ug/L		0.1	15-FEB-18
Arsenic (As)-Dissolved			<0.10		ug/L		0.1	15-FEB-18
Barium (Ba)-Dissolved			<0.10		ug/L		0.1	15-FEB-18
Beryllium (Be)-Dissolved			<0.10		ug/L		0.1	15-FEB-18
Boron (B)-Dissolved			<10		ug/L		10	15-FEB-18
Cadmium (Cd)-Dissolved			<0.0050		ug/L		0.005	15-FEB-18
Chromium (Cr)-Dissolved			<0.50		ug/L		0.5	15-FEB-18
Cobalt (Co)-Dissolved			<0.10		ug/L		0.1	15-FEB-18
Copper (Cu)-Dissolved			<0.20		ug/L		0.2	15-FEB-18
Lead (Pb)-Dissolved			<0.050		ug/L		0.05	15-FEB-18
Molybdenum (Mo)-Dissolved			<0.050		ug/L		0.05	15-FEB-18
Nickel (Ni)-Dissolved			<0.50		ug/L		0.5	15-FEB-18
Selenium (Se)-Dissolved			<0.050		ug/L		0.05	15-FEB-18
Silver (Ag)-Dissolved			<0.050		ug/L		0.05	15-FEB-18
Sodium (Na)-Dissolved			<500		ug/L		500	15-FEB-18
Thallium (Tl)-Dissolved			<0.010		ug/L		0.01	15-FEB-18
Uranium (U)-Dissolved			<0.010		ug/L		0.01	15-FEB-18
Vanadium (V)-Dissolved			<0.50		ug/L		0.5	15-FEB-18

Quality Control Report

Client: G2S ENVIRONMENTAL CONSULTING, INC.
3370 S SERVICE RD
BURLINGTON ON L2N 3M6
Contact: DANA HASSLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-UG/L-MS-WT	**Water**							
Batch R3961949								
WG2716644-1 MB								
Zinc (Zn)-Dissolved			<1.0		ug/L		1	15-FEB-18
WG2716644-5 MS		**WG2716644-6**						
Antimony (Sb)-Dissolved			97.0		%		70-130	15-FEB-18
Arsenic (As)-Dissolved			107.6		%		70-130	15-FEB-18
Barium (Ba)-Dissolved			N/A	MS-B	%		-	15-FEB-18
Beryllium (Be)-Dissolved			98.9		%		70-130	15-FEB-18
Boron (B)-Dissolved			90.3		%		70-130	15-FEB-18
Cadmium (Cd)-Dissolved			101.6		%		70-130	15-FEB-18
Chromium (Cr)-Dissolved			103.4		%		70-130	15-FEB-18
Cobalt (Co)-Dissolved			96.6		%		70-130	15-FEB-18
Copper (Cu)-Dissolved			90.5		%		70-130	15-FEB-18
Lead (Pb)-Dissolved			95.8		%		70-130	15-FEB-18
Molybdenum (Mo)-Dissolved			95.9		%		70-130	15-FEB-18
Nickel (Ni)-Dissolved			91.8		%		70-130	15-FEB-18
Selenium (Se)-Dissolved			104.7		%		70-130	15-FEB-18
Silver (Ag)-Dissolved			94.3		%		70-130	15-FEB-18
Sodium (Na)-Dissolved			N/A	MS-B	%		-	15-FEB-18
Thallium (Tl)-Dissolved			95.2		%		70-130	15-FEB-18
Uranium (U)-Dissolved			N/A	MS-B	%		-	15-FEB-18
Vanadium (V)-Dissolved			106.1		%		70-130	15-FEB-18
Zinc (Zn)-Dissolved			96.6		%		70-130	15-FEB-18
PAH-511-WT	**Water**							
Batch R3967050								
WG2716706-2 LCS								
1-Methylnaphthalene			80.1		%		50-140	21-FEB-18
2-Methylnaphthalene			82.4		%		50-140	21-FEB-18
Acenaphthene			80.2		%		50-140	21-FEB-18
Acenaphthylene			87.0		%		50-140	21-FEB-18
Anthracene			106.6		%		50-140	21-FEB-18
Benzo(a)anthracene			116.4		%		50-140	21-FEB-18
Benzo(a)pyrene			128.4		%		50-140	21-FEB-18
Benzo(b)fluoranthene			132.6		%		50-140	21-FEB-18
Benzo(g,h,i)perylene			107.6		%		50-140	21-FEB-18
Benzo(k)fluoranthene			127.0		%		50-140	21-FEB-18

Quality Control Report

Client: G2S ENVIRONMENTAL CONSULTING, INC.
3370 S SERVICE RD
BURLINGTON ON L2N 3M6
Contact: DANA HASSLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Water**							
Batch R3967050								
WG2716706-2 LCS								
Chrysene			126.4		%		50-140	21-FEB-18
Dibenzo(ah)anthracene			104.9		%		50-140	21-FEB-18
Fluoranthene			104.1		%		50-140	21-FEB-18
Fluorene			94.9		%		50-140	21-FEB-18
Indeno(1,2,3-cd)pyrene			126.2		%		50-140	21-FEB-18
Naphthalene			85.8		%		50-140	21-FEB-18
Phenanthrene			96.5		%		50-140	21-FEB-18
Pyrene			103.8		%		50-140	21-FEB-18
WG2716706-3 LCSD		**WG2716706-2**						
1-Methylnaphthalene		80.1	84.8		%	5.7	50	21-FEB-18
2-Methylnaphthalene		82.4	87.0		%	5.5	50	21-FEB-18
Acenaphthene		80.2	85.0		%	5.8	50	21-FEB-18
Acenaphthylene		87.0	91.4		%	4.9	50	21-FEB-18
Anthracene		106.6	113.0		%	5.8	50	21-FEB-18
Benzo(a)anthracene		116.4	123.1		%	5.6	50	21-FEB-18
Benzo(a)pyrene		128.4	124.7		%	2.9	50	21-FEB-18
Benzo(b)fluoranthene		132.6	134.2		%	1.1	50	21-FEB-18
Benzo(g,h,i)perylene		107.6	117.5		%	8.8	50	21-FEB-18
Benzo(k)fluoranthene		127.0	133.1		%	4.7	50	21-FEB-18
Chrysene		126.4	135.4		%	6.9	50	21-FEB-18
Dibenzo(ah)anthracene		104.9	116.5		%	10	50	21-FEB-18
Fluoranthene		104.1	110.6		%	6.0	50	21-FEB-18
Fluorene		94.9	99.2		%	4.5	50	21-FEB-18
Indeno(1,2,3-cd)pyrene		126.2	130.5		%	3.4	50	21-FEB-18
Naphthalene		85.8	87.4		%	1.8	50	21-FEB-18
Phenanthrene		96.5	101.8		%	5.3	50	21-FEB-18
Pyrene		103.8	110.7		%	6.5	50	21-FEB-18
WG2716706-1 MB								
1-Methylnaphthalene			<0.020		ug/L		0.02	21-FEB-18
2-Methylnaphthalene			<0.020		ug/L		0.02	21-FEB-18
Acenaphthene			<0.020		ug/L		0.02	21-FEB-18
Acenaphthylene			<0.020		ug/L		0.02	21-FEB-18
Anthracene			<0.020		ug/L		0.02	21-FEB-18

Quality Control Report

Client: G2S ENVIRONMENTAL CONSULTING, INC.
3370 S SERVICE RD
BURLINGTON ON L2N 3M6
Contact: DANA HASSLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Water**							
Batch R3967050								
WG2716706-1 MB								
Benzo(a)anthracene			<0.020		ug/L		0.02	21-FEB-18
Benzo(a)pyrene			<0.010		ug/L		0.01	21-FEB-18
Benzo(b)fluoranthene			<0.020		ug/L		0.02	21-FEB-18
Benzo(g,h,i)perylene			<0.020		ug/L		0.02	21-FEB-18
Benzo(k)fluoranthene			<0.020		ug/L		0.02	21-FEB-18
Chrysene			<0.020		ug/L		0.02	21-FEB-18
Dibenzo(ah)anthracene			<0.020		ug/L		0.02	21-FEB-18
Fluoranthene			<0.020		ug/L		0.02	21-FEB-18
Fluorene			<0.020		ug/L		0.02	21-FEB-18
Indeno(1,2,3-cd)pyrene			<0.020		ug/L		0.02	21-FEB-18
Naphthalene			<0.050		ug/L		0.05	21-FEB-18
Phenanthrene			<0.020		ug/L		0.02	21-FEB-18
Pyrene			<0.020		ug/L		0.02	21-FEB-18
Surrogate: d8-Naphthalene			115.6		%		60-140	21-FEB-18
Surrogate: d10-Phenanthrene			115.6		%		60-140	21-FEB-18
Surrogate: d12-Chrysene			111.6		%		60-140	21-FEB-18
Surrogate: d10-Acenaphthene			83.5		%		60-140	21-FEB-18
Batch R3967397								
WG2717468-2 LCS								
1-Methylnaphthalene			85.4		%		50-140	21-FEB-18
2-Methylnaphthalene			87.7		%		50-140	21-FEB-18
Acenaphthene			85.8		%		50-140	21-FEB-18
Acenaphthylene			93.8		%		50-140	21-FEB-18
Anthracene			116.0		%		50-140	21-FEB-18
Benzo(a)anthracene			129.5		%		50-140	21-FEB-18
Benzo(a)pyrene			132.6		%		50-140	21-FEB-18
Benzo(b)fluoranthene			133.2		%		50-140	21-FEB-18
Benzo(g,h,i)perylene			119.4		%		50-140	21-FEB-18
Benzo(k)fluoranthene			135.6		%		50-140	21-FEB-18
Chrysene			135.5		%		50-140	21-FEB-18
Dibenzo(ah)anthracene			117.9		%		50-140	21-FEB-18
Fluoranthene			112.5		%		50-140	21-FEB-18
Fluorene			102.2		%		50-140	21-FEB-18
Indeno(1,2,3-cd)pyrene			135.8		%		50-140	21-FEB-18

Quality Control Report

Client: G2S ENVIRONMENTAL CONSULTING, INC.
3370 S SERVICE RD
BURLINGTON ON L2N 3M6
Contact: DANA HASSLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Water**							
Batch R3967397								
WG2717468-2 LCS								
Naphthalene			91.0		%		50-140	21-FEB-18
Phenanthrene			103.8		%		50-140	21-FEB-18
Pyrene			113.0		%		50-140	21-FEB-18
WG2717468-3 LCSD		**WG2717468-2**						
1-Methylnaphthalene		85.4	85.4		%	0.1	50	21-FEB-18
2-Methylnaphthalene		87.7	88.3		%	0.7	50	21-FEB-18
Acenaphthene		85.8	85.4		%	0.4	50	21-FEB-18
Acenaphthylene		93.8	93.4		%	0.5	50	21-FEB-18
Anthracene		116.0	115.8		%	0.2	50	21-FEB-18
Benzo(a)anthracene		129.5	126.6		%	2.2	50	21-FEB-18
Benzo(a)pyrene		132.6	127.7		%	3.8	50	21-FEB-18
Benzo(b)fluoranthene		133.2	135.8		%	1.9	50	21-FEB-18
Benzo(g,h,i)perylene		119.4	115.5		%	3.3	50	21-FEB-18
Benzo(k)fluoranthene		135.6	132.6		%	2.3	50	21-FEB-18
Chrysene		135.5	131.4		%	3.1	50	21-FEB-18
Dibenzo(ah)anthracene		117.9	113.6		%	3.7	50	21-FEB-18
Fluoranthene		112.5	111.2		%	1.1	50	21-FEB-18
Fluorene		102.2	101.7		%	0.5	50	21-FEB-18
Indeno(1,2,3-cd)pyrene		135.8	133.8		%	1.5	50	21-FEB-18
Naphthalene		91.0	88.0		%	3.3	50	21-FEB-18
Phenanthrene		103.8	103.8		%	0.1	50	21-FEB-18
Pyrene		113.0	112.1		%	0.9	50	21-FEB-18
WG2717468-1 MB								
1-Methylnaphthalene			<0.020		ug/L		0.02	21-FEB-18
2-Methylnaphthalene			<0.020		ug/L		0.02	21-FEB-18
Acenaphthene			<0.020		ug/L		0.02	21-FEB-18
Acenaphthylene			<0.020		ug/L		0.02	21-FEB-18
Anthracene			<0.020		ug/L		0.02	21-FEB-18
Benzo(a)anthracene			<0.020		ug/L		0.02	21-FEB-18
Benzo(a)pyrene			<0.010		ug/L		0.01	21-FEB-18
Benzo(b)fluoranthene			<0.020		ug/L		0.02	21-FEB-18
Benzo(g,h,i)perylene			<0.020		ug/L		0.02	21-FEB-18
Benzo(k)fluoranthene			<0.020		ug/L		0.02	21-FEB-18

Quality Control Report

Client: G2S ENVIRONMENTAL CONSULTING, INC.
3370 S SERVICE RD
BURLINGTON ON L2N 3M6
Contact: DANA HASSLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Water**							
Batch R3967397								
WG2717468-1 MB								
Chrysene			<0.020		ug/L		0.02	21-FEB-18
Dibenzo(ah)anthracene			<0.020		ug/L		0.02	21-FEB-18
Fluoranthene			<0.020		ug/L		0.02	21-FEB-18
Fluorene			<0.020		ug/L		0.02	21-FEB-18
Indeno(1,2,3-cd)pyrene			<0.020		ug/L		0.02	21-FEB-18
Naphthalene			<0.050		ug/L		0.05	21-FEB-18
Phenanthrene			<0.020		ug/L		0.02	21-FEB-18
Pyrene			<0.020		ug/L		0.02	21-FEB-18
Surrogate: d8-Naphthalene			109.7		%		60-140	21-FEB-18
Surrogate: d10-Phenanthrene			112.9		%		60-140	21-FEB-18
Surrogate: d12-Chrysene			108.0		%		60-140	21-FEB-18
Surrogate: d10-Acenaphthene			80.0		%		60-140	21-FEB-18
PH-WT	**Water**							
Batch R3961670								
WG2716704-4 DUP		**WG2716704-3**						
pH		7.83	7.84	J	pH units	0.01	0.2	15-FEB-18
WG2716704-2 LCS								
pH			6.98		pH units		6.9-7.1	15-FEB-18
Batch R3962159								
WG2717463-3 DUP		**WG2717463-2**						
pH		7.24	7.26	J	pH units	0.02	0.2	16-FEB-18
WG2717463-1 LCS								
pH			7.00		pH units		6.9-7.1	16-FEB-18
VOC-511-HS-WT	**Water**							
Batch R3961385								
WG2715941-4 DUP		**WG2715941-3**						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	15-FEB-18
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	15-FEB-18
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	15-FEB-18
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	15-FEB-18
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	15-FEB-18
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	15-FEB-18
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	15-FEB-18
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	15-FEB-18

Quality Control Report

Client: G2S ENVIRONMENTAL CONSULTING, INC.
3370 S SERVICE RD
BURLINGTON ON L2N 3M6
Contact: DANA HASSLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3961385								
WG2715941-4 DUP		**WG2715941-3**						
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	15-FEB-18
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	15-FEB-18
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	15-FEB-18
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	15-FEB-18
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	15-FEB-18
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	15-FEB-18
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	15-FEB-18
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	15-FEB-18
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	15-FEB-18
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	15-FEB-18
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	15-FEB-18
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	15-FEB-18
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	15-FEB-18
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	15-FEB-18
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	15-FEB-18
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	15-FEB-18
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	15-FEB-18
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	15-FEB-18
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	15-FEB-18
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	15-FEB-18
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	15-FEB-18
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	15-FEB-18
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	15-FEB-18
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	15-FEB-18
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	15-FEB-18
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	15-FEB-18
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	15-FEB-18
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	15-FEB-18
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	15-FEB-18
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	15-FEB-18
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	15-FEB-18
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	15-FEB-18
WG2715941-1 LCS								

Quality Control Report

Client: G2S ENVIRONMENTAL CONSULTING, INC.
3370 S SERVICE RD
BURLINGTON ON L2N 3M6
Contact: DANA HASSLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3961385								
WG2715941-1 LCS								
1,1,1,2-Tetrachloroethane			102.5		%		70-130	15-FEB-18
1,1,2,2-Tetrachloroethane			103.3		%		70-130	15-FEB-18
1,1,1-Trichloroethane			104.3		%		70-130	15-FEB-18
1,1,2-Trichloroethane			102.1		%		70-130	15-FEB-18
1,1-Dichloroethane			103.3		%		70-130	15-FEB-18
1,1-Dichloroethylene			90.5		%		70-130	15-FEB-18
1,2-Dibromoethane			101.2		%		70-130	15-FEB-18
1,2-Dichlorobenzene			103.4		%		70-130	15-FEB-18
1,2-Dichloroethane			102.4		%		70-130	15-FEB-18
1,2-Dichloropropane			105.5		%		70-130	15-FEB-18
1,3-Dichlorobenzene			104.8		%		70-130	15-FEB-18
1,4-Dichlorobenzene			106.4		%		70-130	15-FEB-18
Acetone			96.0		%		60-140	15-FEB-18
Benzene			104.2		%		70-130	15-FEB-18
Bromodichloromethane			99.4		%		70-130	15-FEB-18
Bromoform			102.7		%		70-130	15-FEB-18
Bromomethane			98.9		%		60-140	15-FEB-18
Carbon tetrachloride			103.6		%		70-130	15-FEB-18
Chlorobenzene			105.3		%		70-130	15-FEB-18
Chloroform			104.8		%		70-130	15-FEB-18
cis-1,2-Dichloroethylene			102.4		%		70-130	15-FEB-18
cis-1,3-Dichloropropene			113.1		%		70-130	15-FEB-18
Dibromochloromethane			105.4		%		70-130	15-FEB-18
Dichlorodifluoromethane			67.2		%		50-140	15-FEB-18
Ethylbenzene			102.6		%		70-130	15-FEB-18
n-Hexane			110.1		%		70-130	15-FEB-18
m+p-Xylenes			103.9		%		70-130	15-FEB-18
Methyl Ethyl Ketone			94.3		%		60-140	15-FEB-18
Methyl Isobutyl Ketone			108.7		%		60-140	15-FEB-18
Methylene Chloride			104.8		%		70-130	15-FEB-18
MTBE			100.1		%		70-130	15-FEB-18
o-Xylene			103.5		%		70-130	15-FEB-18
Styrene			105.3		%		70-130	15-FEB-18

Quality Control Report

Client: G2S ENVIRONMENTAL CONSULTING, INC.
3370 S SERVICE RD
BURLINGTON ON L2N 3M6
Contact: DANA HASSLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3961385								
WG2715941-1 LCS								
Tetrachloroethylene			107.4		%		70-130	15-FEB-18
Toluene			102.2		%		70-130	15-FEB-18
trans-1,2-Dichloroethylene			105.5		%		70-130	15-FEB-18
trans-1,3-Dichloropropene			109.8		%		70-130	15-FEB-18
Trichloroethylene			107.5		%		70-130	15-FEB-18
Trichlorofluoromethane			104.9		%		60-140	15-FEB-18
Vinyl chloride			82.2		%		60-140	15-FEB-18
WG2715941-2 MB								
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	15-FEB-18
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	15-FEB-18
1,1,1-Trichloroethane			<0.50		ug/L		0.5	15-FEB-18
1,1,2-Trichloroethane			<0.50		ug/L		0.5	15-FEB-18
1,1-Dichloroethane			<0.50		ug/L		0.5	15-FEB-18
1,1-Dichloroethylene			<0.50		ug/L		0.5	15-FEB-18
1,2-Dibromoethane			<0.20		ug/L		0.2	15-FEB-18
1,2-Dichlorobenzene			<0.50		ug/L		0.5	15-FEB-18
1,2-Dichloroethane			<0.50		ug/L		0.5	15-FEB-18
1,2-Dichloropropane			<0.50		ug/L		0.5	15-FEB-18
1,3-Dichlorobenzene			<0.50		ug/L		0.5	15-FEB-18
1,4-Dichlorobenzene			<0.50		ug/L		0.5	15-FEB-18
Acetone			<30		ug/L		30	15-FEB-18
Benzene			<0.50		ug/L		0.5	15-FEB-18
Bromodichloromethane			<2.0		ug/L		2	15-FEB-18
Bromoform			<5.0		ug/L		5	15-FEB-18
Bromomethane			<0.50		ug/L		0.5	15-FEB-18
Carbon tetrachloride			<0.20		ug/L		0.2	15-FEB-18
Chlorobenzene			<0.50		ug/L		0.5	15-FEB-18
Chloroform			<1.0		ug/L		1	15-FEB-18
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	15-FEB-18
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	15-FEB-18
Dibromochloromethane			<2.0		ug/L		2	15-FEB-18
Dichlorodifluoromethane			<2.0		ug/L		2	15-FEB-18
Ethylbenzene			<0.50		ug/L		0.5	15-FEB-18
n-Hexane			<0.50		ug/L		0.5	15-FEB-18

Quality Control Report

Workorder: L2056732 Report Date: 27-FEB-18

Client: G2S ENVIRONMENTAL CONSULTING, INC.
3370 S SERVICE RD
BURLINGTON ON L2N 3M6
Contact: DANA HASSLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3961385								
WG2715941-2 MB								
m+p-Xylenes			<0.40		ug/L		0.4	15-FEB-18
Methyl Ethyl Ketone			<20		ug/L		20	15-FEB-18
Methyl Isobutyl Ketone			<20		ug/L		20	15-FEB-18
Methylene Chloride			<5.0		ug/L		5	15-FEB-18
MTBE			<2.0		ug/L		2	15-FEB-18
o-Xylene			<0.30		ug/L		0.3	15-FEB-18
Styrene			<0.50		ug/L		0.5	15-FEB-18
Tetrachloroethylene			<0.50		ug/L		0.5	15-FEB-18
Toluene			<0.50		ug/L		0.5	15-FEB-18
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	15-FEB-18
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	15-FEB-18
Trichloroethylene			<0.50		ug/L		0.5	15-FEB-18
Trichlorofluoromethane			<5.0		ug/L		5	15-FEB-18
Vinyl chloride			<0.50		ug/L		0.5	15-FEB-18
Surrogate: 1,4-Difluorobenzene			92.8		%		70-130	15-FEB-18
Surrogate: 4-Bromofluorobenzene			97.3		%		70-130	15-FEB-18
WG2715941-5 MS		**WG2715941-3**						
1,1,1,2-Tetrachloroethane			103.6		%		50-140	15-FEB-18
1,1,2,2-Tetrachloroethane			105.3		%		50-140	15-FEB-18
1,1,1-Trichloroethane			102.2		%		50-140	15-FEB-18
1,1,2-Trichloroethane			103.9		%		50-140	15-FEB-18
1,1-Dichloroethane			102.6		%		50-140	15-FEB-18
1,1-Dichloroethylene			92.5		%		50-140	15-FEB-18
1,2-Dibromoethane			103.5		%		50-140	15-FEB-18
1,2-Dichlorobenzene			104.1		%		50-140	15-FEB-18
1,2-Dichloroethane			102.7		%		50-140	15-FEB-18
1,2-Dichloropropane			105.5		%		50-140	15-FEB-18
1,3-Dichlorobenzene			104.4		%		50-140	15-FEB-18
1,4-Dichlorobenzene			104.9		%		50-140	15-FEB-18
Acetone			98.9		%		50-140	15-FEB-18
Benzene			103.8		%		50-140	15-FEB-18
Bromodichloromethane			99.7		%		50-140	15-FEB-18
Bromoform			105.6		%		50-140	15-FEB-18
Bromomethane			93.3		%		50-140	15-FEB-18

Quality Control Report

Client: G2S ENVIRONMENTAL CONSULTING, INC.
3370 S SERVICE RD
BURLINGTON ON L2N 3M6
Contact: DANA HASSLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3961385								
WG2715941-5 MS		**WG2715941-3**						
Carbon tetrachloride			101.2		%		50-140	15-FEB-18
Chlorobenzene			105.9		%		50-140	15-FEB-18
Chloroform			105.0		%		50-140	15-FEB-18
cis-1,2-Dichloroethylene			102.4		%		50-140	15-FEB-18
cis-1,3-Dichloropropene			111.6		%		50-140	15-FEB-18
Dibromochloromethane			106.4		%		50-140	15-FEB-18
Dichlorodifluoromethane			56.7		%		50-140	15-FEB-18
Ethylbenzene			101.7		%		50-140	15-FEB-18
n-Hexane			104.5		%		50-140	15-FEB-18
m+p-Xylenes			103.2		%		50-140	15-FEB-18
Methyl Ethyl Ketone			95.3		%		50-140	15-FEB-18
Methyl Isobutyl Ketone			111.5		%		50-140	15-FEB-18
Methylene Chloride			104.5		%		50-140	15-FEB-18
MTBE			101.0		%		50-140	15-FEB-18
o-Xylene			103.3		%		50-140	15-FEB-18
Styrene			105.4		%		50-140	15-FEB-18
Tetrachloroethylene			105.8		%		50-140	15-FEB-18
Toluene			102.1		%		50-140	15-FEB-18
trans-1,2-Dichloroethylene			103.9		%		50-140	15-FEB-18
trans-1,3-Dichloropropene			109.1		%		50-140	15-FEB-18
Trichloroethylene			106.2		%		50-140	15-FEB-18
Trichlorofluoromethane			98.3		%		50-140	15-FEB-18
Vinyl chloride			75.4		%		50-140	15-FEB-18
Batch R3961469								
WG2715372-4 DUP		**WG2715372-3**						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	15-FEB-18
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	15-FEB-18
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	15-FEB-18
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	15-FEB-18
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	15-FEB-18
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	15-FEB-18
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	15-FEB-18
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	15-FEB-18

Quality Control Report

Client: G2S ENVIRONMENTAL CONSULTING, INC.
3370 S SERVICE RD
BURLINGTON ON L2N 3M6
Contact: DANA HASSLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3961469								
WG2715372-4 DUP		**WG2715372-3**						
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	15-FEB-18
Acetone		35	37		ug/L	6.1	30	15-FEB-18
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	15-FEB-18
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	15-FEB-18
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	15-FEB-18
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	15-FEB-18
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	15-FEB-18
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	15-FEB-18
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	15-FEB-18
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	15-FEB-18
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	15-FEB-18
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	15-FEB-18
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	15-FEB-18
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	15-FEB-18
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	15-FEB-18
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	15-FEB-18
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	15-FEB-18
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	15-FEB-18
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	15-FEB-18
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	15-FEB-18
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	15-FEB-18
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	15-FEB-18
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	15-FEB-18
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	15-FEB-18
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	15-FEB-18
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	15-FEB-18
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	15-FEB-18
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	15-FEB-18
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	15-FEB-18
WG2715372-1 LCS								
1,1,1,2-Tetrachloroethane			101.7		%		70-130	14-FEB-18
1,1,2,2-Tetrachloroethane			106.0		%		70-130	14-FEB-18
1,1,1-Trichloroethane			100.6		%		70-130	14-FEB-18

Quality Control Report

Client: G2S ENVIRONMENTAL CONSULTING, INC.
3370 S SERVICE RD
BURLINGTON ON L2N 3M6
Contact: DANA HASSLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3961469								
WG2715372-1 LCS								
1,1,2-Trichloroethane			103.7		%		70-130	14-FEB-18
1,1-Dichloroethane			102.7		%		70-130	14-FEB-18
1,1-Dichloroethylene			92.9		%		70-130	14-FEB-18
1,2-Dibromoethane			102.7		%		70-130	14-FEB-18
1,2-Dichloroethane			106.8		%		70-130	14-FEB-18
1,2-Dichloropropane			108.2		%		70-130	14-FEB-18
Acetone			101.4		%		60-140	14-FEB-18
Benzene			105.0		%		70-130	14-FEB-18
Bromodichloromethane			100.3		%		70-130	14-FEB-18
Bromoform			100.8		%		70-130	14-FEB-18
Bromomethane			98.5		%		60-140	14-FEB-18
Carbon tetrachloride			100.0		%		70-130	14-FEB-18
Chlorobenzene			102.8		%		70-130	14-FEB-18
Chloroform			105.5		%		70-130	14-FEB-18
cis-1,2-Dichloroethylene			90.1		%		70-130	14-FEB-18
cis-1,3-Dichloropropene			111.6		%		70-130	14-FEB-18
Dibromochloromethane			103.9		%		70-130	14-FEB-18
Dichlorodifluoromethane			75.5		%		50-140	14-FEB-18
Ethylbenzene			100.3		%		70-130	14-FEB-18
n-Hexane			104.4		%		70-130	14-FEB-18
m+p-Xylenes			102.1		%		70-130	14-FEB-18
Methyl Ethyl Ketone			99.98		%		60-140	14-FEB-18
Methyl Isobutyl Ketone			103.3		%		60-140	14-FEB-18
Methylene Chloride			105.5		%		70-130	14-FEB-18
MTBE			104.0		%		70-130	14-FEB-18
o-Xylene			97.2		%		70-130	14-FEB-18
Styrene			102.8		%		70-130	14-FEB-18
Tetrachloroethylene			98.0		%		70-130	14-FEB-18
Toluene			97.3		%		70-130	14-FEB-18
trans-1,2-Dichloroethylene			103.3		%		70-130	14-FEB-18
trans-1,3-Dichloropropene			106.7		%		70-130	14-FEB-18
Trichloroethylene			104.2		%		70-130	14-FEB-18
Trichlorofluoromethane			102.0		%		60-140	14-FEB-18

Quality Control Report

Client: G2S ENVIRONMENTAL CONSULTING, INC.
3370 S SERVICE RD
BURLINGTON ON L2N 3M6
Contact: DANA HASSLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3961469								
WG2715372-1 LCS								
Vinyl chloride			82.1		%		60-140	14-FEB-18
WG2715372-2 MB								
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	15-FEB-18
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	15-FEB-18
1,1,1-Trichloroethane			<0.50		ug/L		0.5	15-FEB-18
1,1,2-Trichloroethane			<0.50		ug/L		0.5	15-FEB-18
1,1-Dichloroethane			<0.50		ug/L		0.5	15-FEB-18
1,1-Dichloroethylene			<0.50		ug/L		0.5	15-FEB-18
1,2-Dibromoethane			<0.20		ug/L		0.2	15-FEB-18
1,2-Dichloroethane			<0.50		ug/L		0.5	15-FEB-18
1,2-Dichloropropane			<0.50		ug/L		0.5	15-FEB-18
Acetone			<30		ug/L		30	15-FEB-18
Benzene			<0.50		ug/L		0.5	15-FEB-18
Bromodichloromethane			<2.0		ug/L		2	15-FEB-18
Bromoform			<5.0		ug/L		5	15-FEB-18
Bromomethane			<0.50		ug/L		0.5	15-FEB-18
Carbon tetrachloride			<0.20		ug/L		0.2	15-FEB-18
Chlorobenzene			<0.50		ug/L		0.5	15-FEB-18
Chloroform			<1.0		ug/L		1	15-FEB-18
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	15-FEB-18
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	15-FEB-18
Dibromochloromethane			<2.0		ug/L		2	15-FEB-18
Dichlorodifluoromethane			<2.0		ug/L		2	15-FEB-18
Ethylbenzene			<0.50		ug/L		0.5	15-FEB-18
n-Hexane			<0.50		ug/L		0.5	15-FEB-18
m+p-Xylenes			<0.40		ug/L		0.4	15-FEB-18
Methyl Ethyl Ketone			<20		ug/L		20	15-FEB-18
Methyl Isobutyl Ketone			<20		ug/L		20	15-FEB-18
Methylene Chloride			<5.0		ug/L		5	15-FEB-18
MTBE			<2.0		ug/L		2	15-FEB-18
o-Xylene			<0.30		ug/L		0.3	15-FEB-18
Styrene			<0.50		ug/L		0.5	15-FEB-18
Tetrachloroethylene			<0.50		ug/L		0.5	15-FEB-18
Toluene			<0.50		ug/L		0.5	15-FEB-18

Quality Control Report

Client: G2S ENVIRONMENTAL CONSULTING, INC.
3370 S SERVICE RD
BURLINGTON ON L2N 3M6
Contact: DANA HASSLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3961469								
WG2715372-2 MB								
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	15-FEB-18
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	15-FEB-18
Trichloroethylene			<0.50		ug/L		0.5	15-FEB-18
Trichlorofluoromethane			<5.0		ug/L		5	15-FEB-18
Vinyl chloride			<0.50		ug/L		0.5	15-FEB-18
Surrogate: 1,4-Difluorobenzene			94.2		%		70-130	15-FEB-18
Surrogate: 4-Bromofluorobenzene			96.5		%		70-130	15-FEB-18
WG2715372-5 MS		**WG2715372-3**						
1,1,1,2-Tetrachloroethane			101.8		%		50-140	15-FEB-18
1,1,2,2-Tetrachloroethane			100.2		%		50-140	15-FEB-18
1,1,1-Trichloroethane			102.5		%		50-140	15-FEB-18
1,1,2-Trichloroethane			100.6		%		50-140	15-FEB-18
1,1-Dichloroethane			102.8		%		50-140	15-FEB-18
1,1-Dichloroethylene			92.7		%		50-140	15-FEB-18
1,2-Dibromoethane			99.2		%		50-140	15-FEB-18
1,2-Dichloroethane			103.6		%		50-140	15-FEB-18
1,2-Dichloropropane			106.8		%		50-140	15-FEB-18
Acetone			95.7		%		50-140	15-FEB-18
Benzene			105.2		%		50-140	15-FEB-18
Bromodichloromethane			99.0		%		50-140	15-FEB-18
Bromoform			96.6		%		50-140	15-FEB-18
Bromomethane			94.1		%		50-140	15-FEB-18
Carbon tetrachloride			102.0		%		50-140	15-FEB-18
Chlorobenzene			103.1		%		50-140	15-FEB-18
Chloroform			105.8		%		50-140	15-FEB-18
cis-1,2-Dichloroethylene			101.9		%		50-140	15-FEB-18
cis-1,3-Dichloropropene			104.7		%		50-140	15-FEB-18
Dibromochloromethane			101.6		%		50-140	15-FEB-18
Dichlorodifluoromethane			66.3		%		50-140	15-FEB-18
Ethylbenzene			100.7		%		50-140	15-FEB-18
n-Hexane			103.5		%		50-140	15-FEB-18
m+p-Xylenes			103.7		%		50-140	15-FEB-18
Methyl Ethyl Ketone			90.2		%		50-140	15-FEB-18
Methyl Isobutyl Ketone			92.6		%		50-140	15-FEB-18

Quality Control Report

Client: G2S ENVIRONMENTAL CONSULTING, INC.
3370 S SERVICE RD
BURLINGTON ON L2N 3M6
Contact: DANA HASSLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3961469								
WG2715372-5 MS		**WG2715372-3**						
Methylene Chloride			104.6		%		50-140	15-FEB-18
MTBE			104.4		%		50-140	15-FEB-18
o-Xylene			97.0		%		50-140	15-FEB-18
Styrene			100.3		%		50-140	15-FEB-18
Tetrachloroethylene			99.5		%		50-140	15-FEB-18
Toluene			98.1		%		50-140	15-FEB-18
trans-1,2-Dichloroethylene			102.2		%		50-140	15-FEB-18
trans-1,3-Dichloropropene			98.5		%		50-140	15-FEB-18
Trichloroethylene			104.6		%		50-140	15-FEB-18
Trichlorofluoromethane			101.7		%		50-140	15-FEB-18
Vinyl chloride			77.6		%		50-140	15-FEB-18
Batch R3962176								
WG2715373-1 LCS								
1,2-Dichlorobenzene			102.7		%		70-130	16-FEB-18
1,3-Dichlorobenzene			104.1		%		70-130	16-FEB-18
1,4-Dichlorobenzene			104.7		%		70-130	16-FEB-18
m+p-Xylenes			108.1		%		70-130	16-FEB-18
WG2715373-2 MB								
1,2-Dichlorobenzene			<0.50		ug/L		0.5	16-FEB-18
1,3-Dichlorobenzene			<0.50		ug/L		0.5	16-FEB-18
1,4-Dichlorobenzene			<0.50		ug/L		0.5	16-FEB-18
m+p-Xylenes			<0.40		ug/L		0.4	16-FEB-18
Batch R3962253								
WG2714931-4 DUP		**WG2714931-3**						
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	16-FEB-18
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	16-FEB-18
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	16-FEB-18
WG2714931-1 LCS								
1,2-Dichlorobenzene			107.6		%		70-130	16-FEB-18
1,3-Dichlorobenzene			110.6		%		70-130	16-FEB-18
1,4-Dichlorobenzene			111.7		%		70-130	16-FEB-18
WG2714931-2 MB								
1,2-Dichlorobenzene			<0.50		ug/L		0.5	16-FEB-18
1,3-Dichlorobenzene			<0.50		ug/L		0.5	16-FEB-18
							0.5	

Quality Control Report

Client: G2S ENVIRONMENTAL CONSULTING, INC.
3370 S SERVICE RD
BURLINGTON ON L2N 3M6
Contact: DANA HASSLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3962253								
WG2714931-2 MB								
1,4-Dichlorobenzene			<0.50		ug/L		0.5	16-FEB-18
WG2714931-5 MS		**WG2714931-3**						
1,2-Dichlorobenzene			107.7		%		50-140	16-FEB-18
1,3-Dichlorobenzene			106.3		%		50-140	16-FEB-18
1,4-Dichlorobenzene			108.2		%		50-140	16-FEB-18
Batch R3966435								
WG2717902-4 DUP		**WG2717902-3**						
m+p-Xylenes		7.73	7.48		ug/L	3.3	30	21-FEB-18
WG2717902-1 LCS								
m+p-Xylenes			96.7		%		70-130	20-FEB-18
WG2717902-2 MB								
m+p-Xylenes			<0.40		ug/L		0.4	20-FEB-18
WG2717902-5 MS		**WG2717902-3**						
m+p-Xylenes			94.8		%		50-140	21-FEB-18

Quality Control Report

Workorder: L2056732 Report Date: 27-FEB-18

Client: G2S ENVIRONMENTAL CONSULTING, INC.
3370 S SERVICE RD
BURLINGTON ON L2N 3M6
Contact: DANA HASSLETT

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

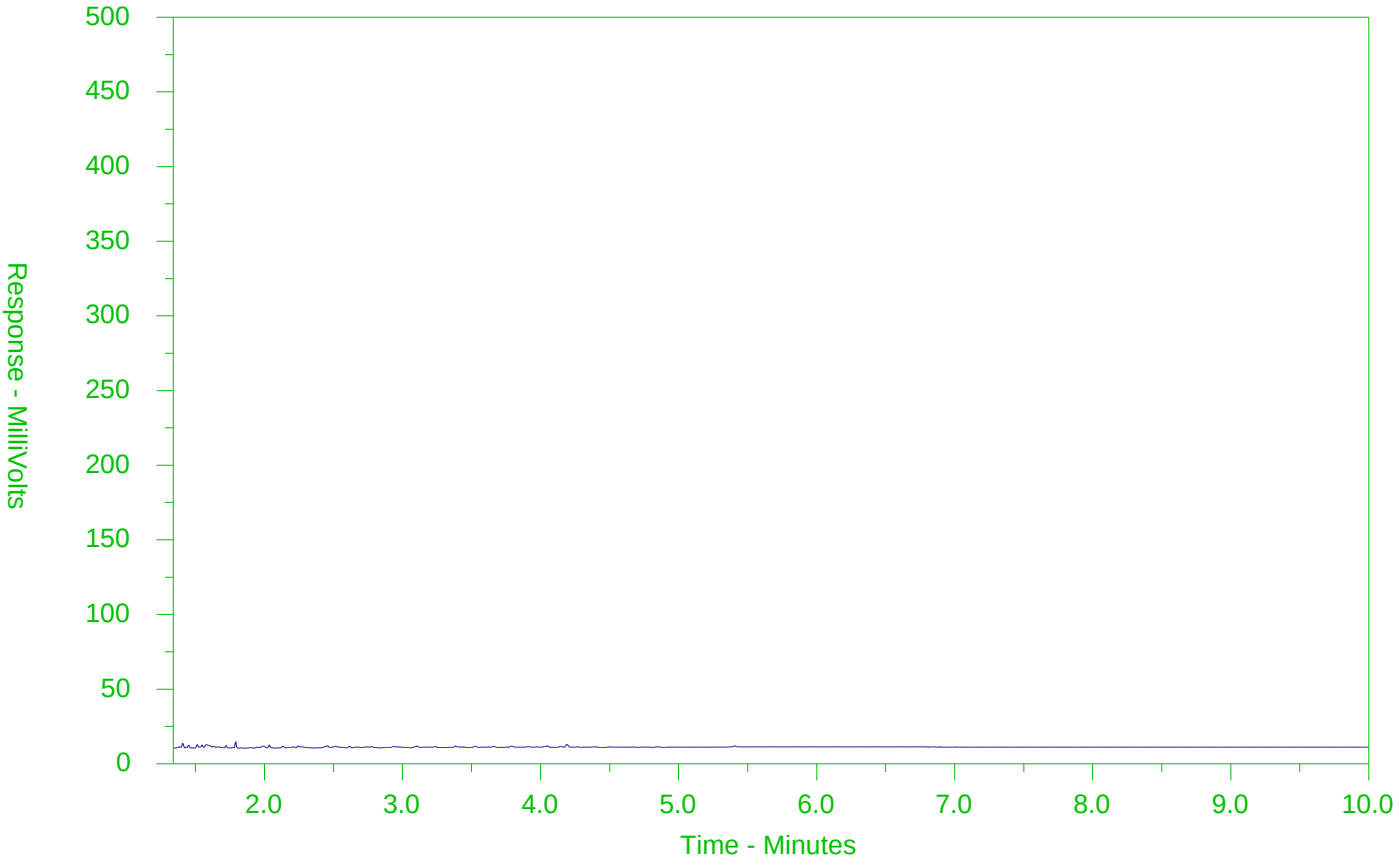
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2056732-1
Client Sample ID: MW101



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
←Diesel/Jet Fuels→			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

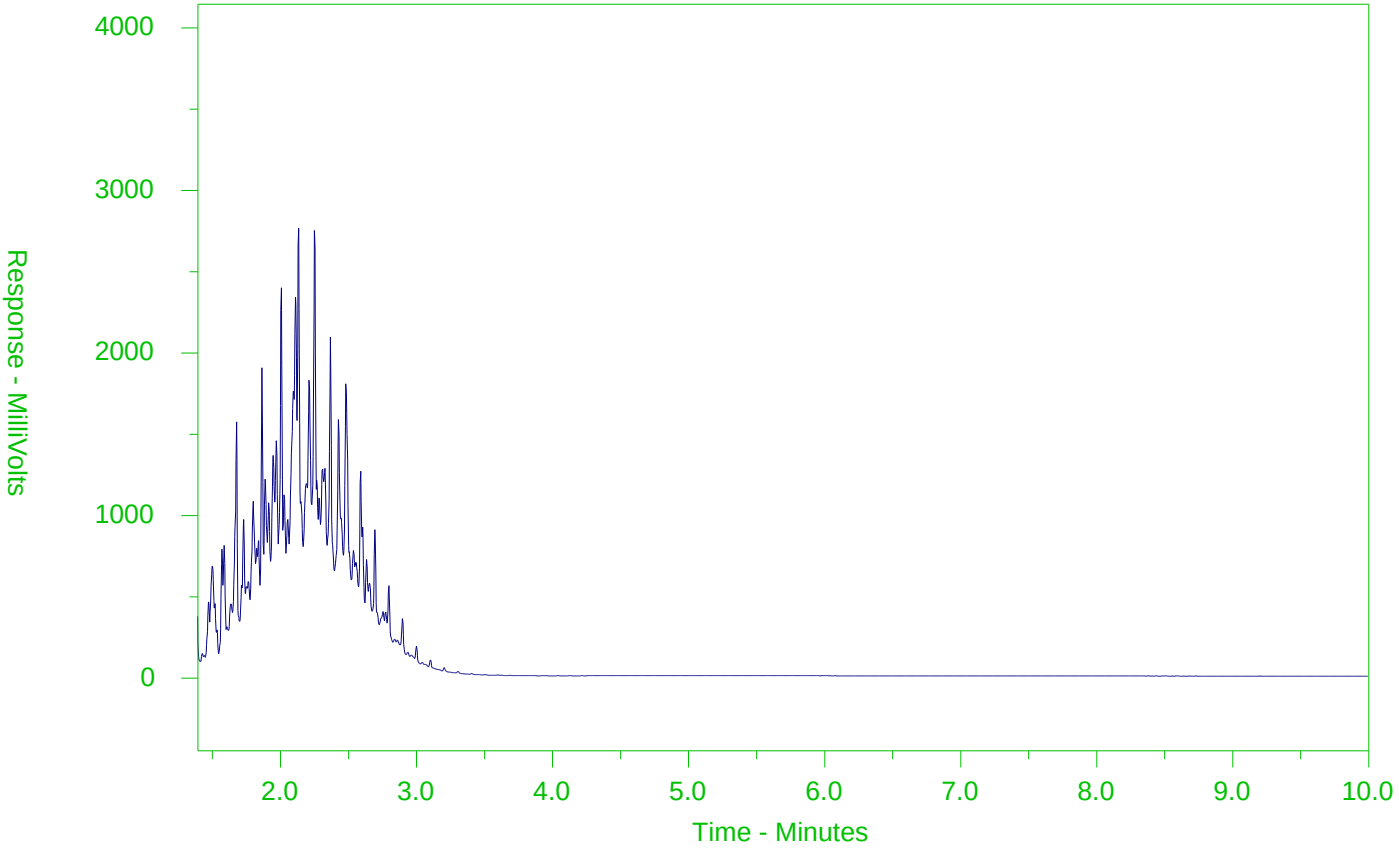
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2056732-2
Client Sample ID: MW102



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
←Diesel/Jet Fuels→			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

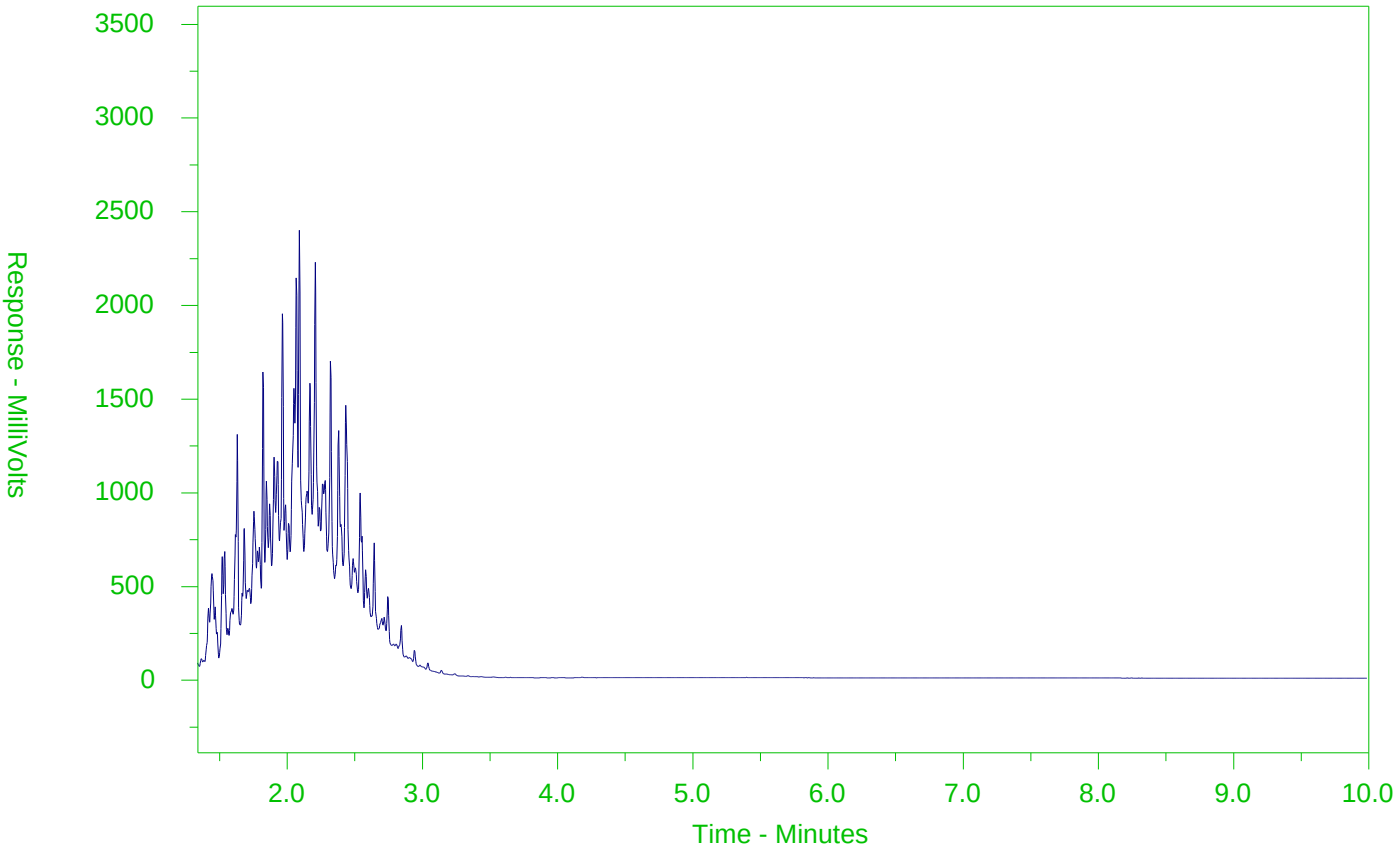
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2056732-3
Client Sample ID: MW122



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
←Diesel/Jet Fuels→			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

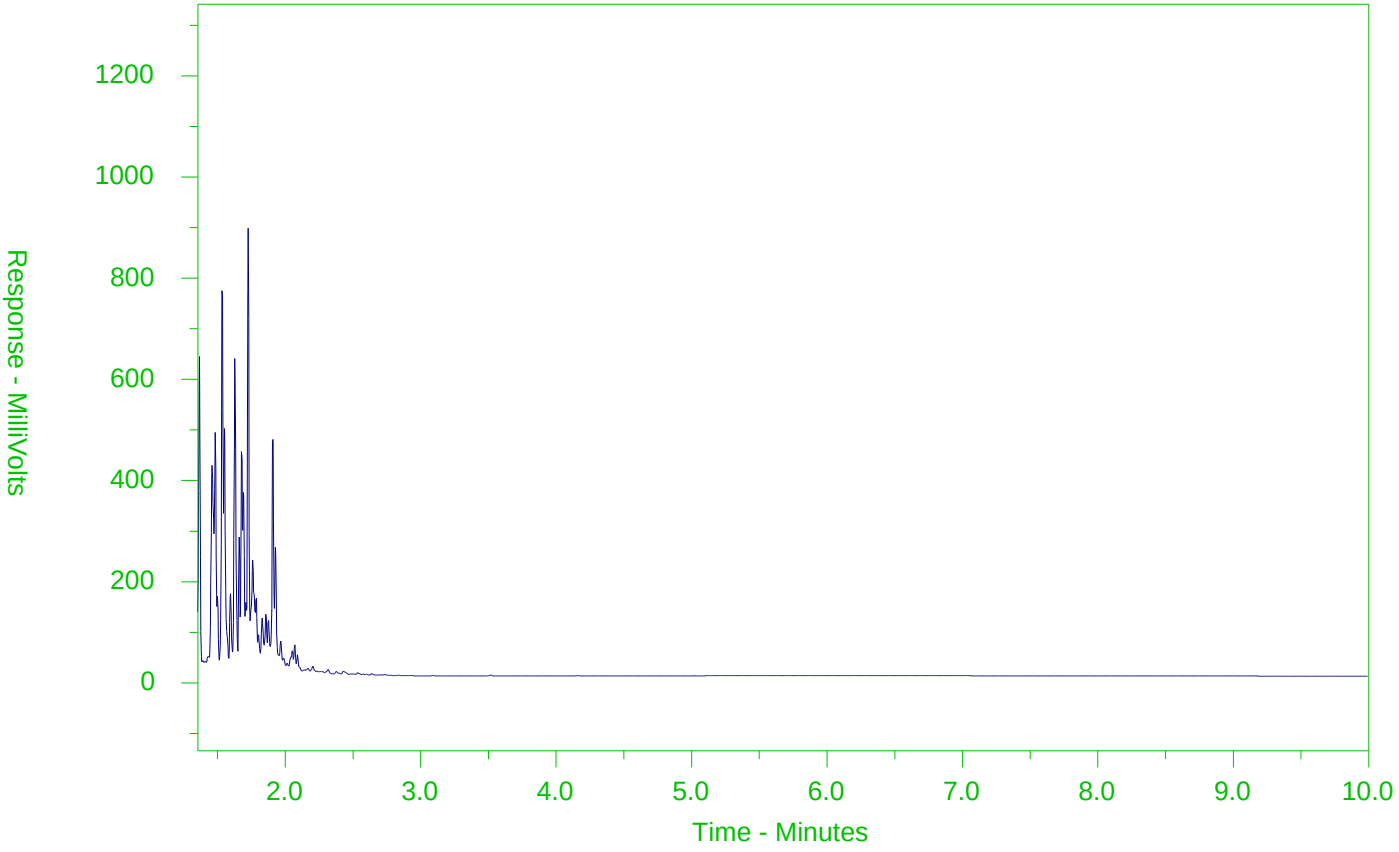
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2056732-4
Client Sample ID: MW103



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
←Diesel/Jet Fuels→			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

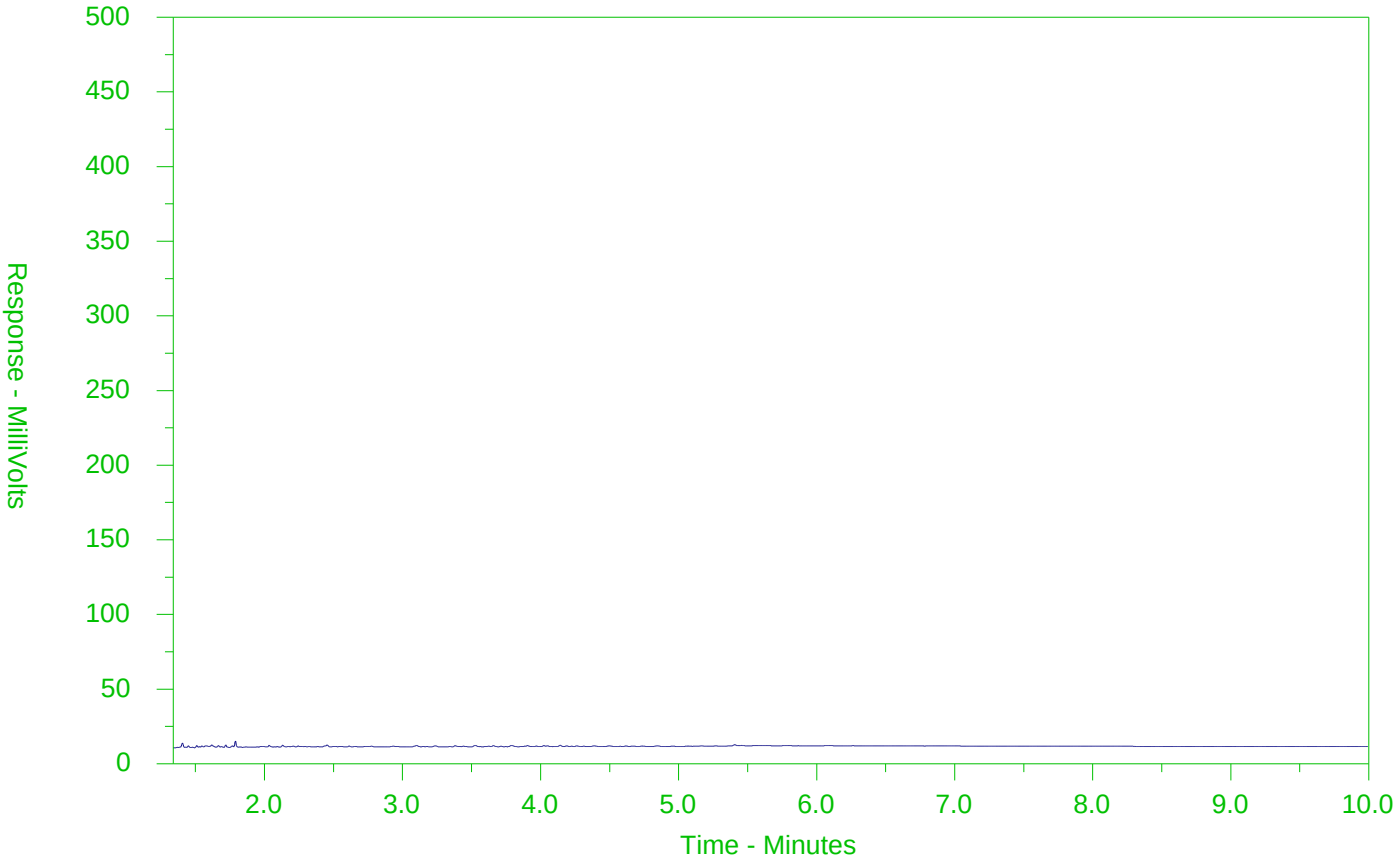
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2056732-5
Client Sample ID: MW105



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
←Diesel/Jet Fuels→			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

Chain of Custody (COC) / Analytical Request Form

ALS Environmental
www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2056732-COFC

COC Number: 17 - 618276

Page 1 of 1

Report To	Contact and company name below will appear on the final report
Company:	625 Environmental
Contact:	Dana Haseeta
Phone:	416 644 7011
Company address below will appear on the final report	
Street:	3370 S Service Rd
City/Province:	Burlington, ON
Postal Code:	L2N 3M6
Invoice To	Same as Report To [X] YES [ ] NO
	Copy of Invoice with Report [X] YES [ ] NO
Company:	
Contact:	

Report Format / Distribution

Select Report Format: [X] PDF [X] EXCEL | | EDD (DIGITAL)
Quality Control (QC) Report with Report [X] YES [ ] NO
[X] Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: [X] EMAIL | | MAIL [ ] FAX
Email 1 or Fax dana@625environmental.com
Email 2 danielle@625environmental.com
Email 3

Invoice Distribution

Select Invoice Distribution: [X] EMAIL [ ] MAIL [ ] FAX
Email 1 or Fax
Email 2

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] [X] Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] [ ] | 3 day [P3-25%] [ ] | 2 day [P2-50%] [ ]

EMERGENCY: 1 Business day [E-100%] [ ] | Same Day, Weekend or Statutory holiday [E2-200% (Laboratory opening fees may apply)] [ ]

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #: Standing offer
Job #: 625180006
PO / AFE: ESSA
LSD: 14B
ALS Lab Work Order # (lab use only): L2056732 DA

Oil and Gas Required Fields (client use)

AFE/Cost Center: | PO#:
Major/Minor Code: | Routing Code:
Requisitioner:
Location:
ALS Contact: | Sampler:

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	PHC	VOC	Metals	Cr6+	Hg	CL,EC,pH	CN	PAH	SAMPLES ON HOLD	Sample is hazardous (please provide further details)	NUMBER OF CONTAINERS
							F	F	F						
1	MW101	13-Feb-18	1:30p	GW	X	X									4
2	MW102		2:30p		X	X	X	X	X	X	X	X			9
3	MW122		2:30p		X	X	X	X	X	X	X	X			9
4	MW103		4:00p		X	X	X	X	X	X	X	X			9
5	MW105		4:00p		X	X									4
6	Trip Blank					X									2
7	Trip Spike.					X									2

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? [ ] YES [X] NO
Are samples for human consumption/ use? [ ] YES [X] NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Table 3 - Residential - Coarse.

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen [ ] | SIF Observations Yes [ ] No [ ]
Ice Packs [X] Ice Cubes [ ] | Custody seal intact Yes [ ] No [ ]
Cooling Initiated [X]

INITIAL COOLER TEMPERATURES °C	FINAL COOLER TEMPERATURES °C
8.8°C	2.9

SHIPMENT RELEASE (client use)

Released by: Danielle Mannup | Date: Feb 14/2018. | Time:

INITIAL SHIPMENT RECEPTION (lab use only)

Received by: AARAV BURTAN | Date: 14-Feb-2018 | Time: 11:30

FINAL SHIPMENT RECEPTION (lab use only)

Received by: [illegible] | Date: Feb 14/18 | Time: 16:50

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JULY 2017 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form.**

G2S ENVIRONMENTAL CONSULTING, INC.
ATTN: DANA HASLETT
3370 S SERVICE ROAD
SUITE 107
BURLINGTON ON L7N 3M6

Date Received: 22-MAR-18
Report Date: 28-MAR-18 11:40 (MT)
Version: FINAL

Client Phone: 905-766-4054

Certificate of Analysis

Lab Work Order #: L2071368

Project P.O. #: NOT SUBMITTED
Job Reference: G2S18006
C of C Numbers: 15-554727
Legal Site Desc:

Mathy Mahadeva
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

Summary of Guideline Exceedances

Guideline ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Soil-Res/Park/Inst. Property Use (Coarse)						
L2071368-7	BH207 SS4	Volatile Organic Compounds	Ethylbenzene	1.13	1.1	ug/g
			Xylenes (Total)	9.03	3.1	ug/g
		Hydrocarbons	F1 (C6-C10)	113	55	ug/g
			F1-BTEX	103	55	ug/g
		Polycyclic Aromatic Hydrocarbons	1+2-Methylnaphthalenes	3.32	0.99	ug/g
			1-Methylnaphthalene	1.05	0.99	ug/g
			2-Methylnaphthalene	2.27	0.99	ug/g
			Naphthalene	1.27	0.6	ug/g

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Physical Tests - SOIL

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID	L2071368-1	L2071368-2	L2071368-3	L2071368-4	L2071368-5	L2071368-6	L2071368-7	L2071368-8	L2071368-9
				Sample Date	19-MAR-18	19-MAR-18	19-MAR-18	19-MAR-18	20-MAR-18	20-MAR-18	20-MAR-18	19-MAR-18	09-FEB-18
				Sample ID	BH201 SS1	BH202 SS4	BH203 SS3	BH204 SS4	BH205 SS3	BH206 SS4	BH207 SS4	BH223 SS3	BH103 SS8
% Moisture	%	-	-		16.7	16.1	16.0	14.4	14.6	15.4	12.5	16.1	16.4

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Volatile Organic Compounds - SOIL

			Lab ID	L2071368-1	L2071368-2	L2071368-3	L2071368-4	L2071368-5	L2071368-6	L2071368-7	L2071368-8	L2071368-9
			Sample Date	19-MAR-18	19-MAR-18	19-MAR-18	19-MAR-18	20-MAR-18	20-MAR-18	20-MAR-18	19-MAR-18	09-FEB-18
			Sample ID	BH201 SS1	BH202 SS4	BH203 SS3	BH204 SS4	BH205 SS3	BH206 SS4	BH207 SS4	BH223 SS3	BH103 SS8
		Guide Limits										
Analyte	Unit	#1	#2									
Benzene	ug/g	0.21	-	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068	<0.0068
Ethylbenzene	ug/g	1.1	-	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018	1.13	<0.018	<0.018
Toluene	ug/g	2.3	-	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080
o-Xylene	ug/g	-	-	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	1.47	<0.020	<0.020
m+p-Xylenes	ug/g	-	-	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	7.57	<0.030	0.049
Xylenes (Total)	ug/g	3.1	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	9.03	<0.050	<0.050
Surrogate: 4-Bromofluorobenzene	%	-	-	93.9	88.1	95.7	97.5	89.3	96.5	106.9	99.9	100.9
Surrogate: 1,4-Difluorobenzene	%	-	-	93.1	88.3	95.8	98.1	90.3	98.7	94.7	96.4	95.1

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Hydrocarbons - SOIL

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID	L2071368-1	L2071368-2	L2071368-3	L2071368-4	L2071368-5	L2071368-6	L2071368-7	L2071368-8	L2071368-9
				Sample Date	19-MAR-18	19-MAR-18	19-MAR-18	19-MAR-18	20-MAR-18	20-MAR-18	20-MAR-18	19-MAR-18	09-FEB-18
				Sample ID	BH201 SS1	BH202 SS4	BH203 SS3	BH204 SS4	BH205 SS3	BH206 SS4	BH207 SS4	BH223 SS3	BH103 SS8
F1 (C6-C10)	ug/g	55	-		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	113 DLHC	<5.0	17.2
F1-BTEX	ug/g	55	-		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	103	<5.0	17.2
F2 (C10-C16)	ug/g	98	-		<10	<10	<10	<10	<10	<10	65	<10	<10
F2-Naphth	ug/g	-	-		<10	<10	<10	<10	<10	<10	64	<10	<10
F3 (C16-C34)	ug/g	300	-		<50	<50	<50	<50	<50	<50	<50	<50	<50
F3-PAH	ug/g	-	-		<50	<50	<50	<50	<50	<50	<50	<50	<50
F4 (C34-C50)	ug/g	2800	-		<50	<50	<50	<50	<50	<50	<50	<50	<50
Total Hydrocarbons (C6-C50)	ug/g	-	-		<72	<72	<72	<72	<72	<72	178	<72	<72
Chrom. to baseline at nC50		-	-		YES	YES	YES	YES	YES	YES	YES	YES	YES
Surrogate: 2-Bromobenzotrifluoride	%	-	-		82.9	60.5	75.4	85.9	78.8	81.5	86.4	89.3	81.4
Surrogate: 3,4-Dichlorotoluene	%	-	-		103.2	89.9	104.5	106.6	95.0	95.2	169.4 SOL:MI	98.0	108.4

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Polycyclic Aromatic Hydrocarbons - SOIL

			Lab ID	L2071368-1	L2071368-2	L2071368-3	L2071368-4	L2071368-5	L2071368-6	L2071368-7	L2071368-8	L2071368-9
			Sample Date	19-MAR-18	19-MAR-18	19-MAR-18	19-MAR-18	20-MAR-18	20-MAR-18	20-MAR-18	19-MAR-18	09-FEB-18
			Sample ID	BH201 SS1	BH202 SS4	BH203 SS3	BH204 SS4	BH205 SS3	BH206 SS4	BH207 SS4	BH223 SS3	BH103 SS8
Analyte	Unit	Guide Limits #1	#2									
Acenaphthene	ug/g	7.9	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Acenaphthylene	ug/g	0.15	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Anthracene	ug/g	0.67	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(a)anthracene	ug/g	0.5	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(a)pyrene	ug/g	0.3	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(b)fluoranthene	ug/g	0.78	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(g,h,i)perylene	ug/g	6.6	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Benzo(k)fluoranthene	ug/g	0.78	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chrysene	ug/g	7	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Dibenzo(ah)anthracene	ug/g	0.1	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Fluoranthene	ug/g	0.69	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Fluorene	ug/g	62	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Indeno(1,2,3-cd)pyrene	ug/g	0.38	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
1+2-Methylnaphthalenes	ug/g	0.99	-	<0.042	<0.042	<0.042	<0.042	<0.042	<0.042	3.32	<0.042	<0.042
1-Methylnaphthalene	ug/g	0.99	-	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	1.05	<0.030	<0.030
2-Methylnaphthalene	ug/g	0.99	-	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	2.27	<0.030	<0.030
Naphthalene	ug/g	0.6	-	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	1.27	<0.013	<0.013
Phenanthrene	ug/g	6.2	-	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046	<0.046
Pyrene	ug/g	78	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Surrogate: 2-Fluorobiphenyl	%	-	-	86.5	86.2	82.1	96.1	107.4	84.4	85.7	85.1	84.1
Surrogate: p-Terphenyl d14	%	-	-	86.4	85.7	80.3	95.1	108.5	83.6	82.8	84.5	84.1

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Reference Information

Qualifiers for Individual Parameters Listed:

Qualifier	Description
SOL:MI	Surrogate recovery outside acceptable limits due to matrix interference
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
BTX-511-HS-WT	Soil	BTEX-O.Reg 153/04 (July 2011)	SW846 8260

BTX is determined by extracting a soil or sediment sample as received with methanol, then analyzing by headspace-GC/MS.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

F1-F4-511-CALC-WT	Soil	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-S

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-HS-511-WT	Soil	F1-O.Reg 153/04 (July 2011)	E3398/CCME TIER 1-HS

Fraction F1 is determined by extracting a soil or sediment sample as received with methanol, then analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F2-F4-511-WT	Soil	F2-F4-O.Reg 153/04 (July 2011)	CCME Tier 1

Petroleum Hydrocarbons (F2-F4 fractions) are extracted from soil with 1:1 hexane:acetone using a rotary extractor. Extracts are treated with silica gel to remove polar organic interferences. F2, F3, & F4 are analyzed by GC-FID. F4G-sg is analyzed gravimetrically.

Notes:
1. F2 (C10-C16): Sum of all hydrocarbons that elute between nC10 and nC16.
2. F3 (C16-C34): Sum of all hydrocarbons that elute between nC16 and nC34.
3. F4 (C34-C50): Sum of all hydrocarbons that elute between nC34 and nC50.
4. F4G: Gravimetric Heavy Hydrocarbons

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**

5. F4G-sg: Gravimetric Heavy Hydrocarbons (F4G) after silica gel treatment.
6. Where both F4 (C34-C50) and F4G-sg are reported for a sample, the larger of the two values is used for comparison against the relevant CCME guideline for F4.
7. F4G-sg cannot be added to the C6 to C50 hydrocarbon results to obtain an estimate of total extractable hydrocarbons.
8. This method is validated for use.
9. Data from analysis of validation and quality control samples is available upon request.
10. Reported results are expressed as milligrams per dry kilogram, unless otherwise indicated.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

METHYLNAPS-CALC-WT	Soil	ABN-Calculated Parameters	SW846 8270
MOISTURE-WT	Soil	% Moisture	Gravimetric: Oven Dried
PAH-511-WT	Soil	PAH-O.Reg 153/04 (July 2011)	SW846 3510/8270

A representative sub-sample of soil is fortified with deuterium-labelled surrogates and a mechanical shaking techniqueis used to extract the sample with a mixture of methanol and toluene. The extracts are concentrated and analyzed by GC/MS. Results for benzo(b) fluoranthene may include contributions from benzo(j)fluoranthene, if also present in the sample.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

XYLENES-SUM-CALC-WT	Soil	Sum of Xylene Isomer Concentrations	CALCULATION

Total xylenes represents the sum of o-xylene and m&p-xylene.

**ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody Numbers:

15-554727

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Reference Information

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information.

Quality Control Report

Workorder: L2071368 Report Date: 28-MAR-18

Client: G2S ENVIRONMENTAL CONSULTING, INC.
3370 S SERVICE ROAD SUITE 107
BURLINGTON ON L7N 3M6
Contact: DANA HASLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTX-511-HS-WT	**Soil**							
Batch R3995496								
WG2739309-4 DUP		**WG2739309-3**						
Benzene		<0.0068	<0.0068	RPD-NA	ug/g	N/A	40	26-MAR-18
Ethylbenzene		<0.018	<0.018	RPD-NA	ug/g	N/A	40	26-MAR-18
m+p-Xylenes		<0.030	<0.030	RPD-NA	ug/g	N/A	40	26-MAR-18
o-Xylene		<0.020	<0.020	RPD-NA	ug/g	N/A	40	26-MAR-18
Toluene		<0.080	<0.080	RPD-NA	ug/g	N/A	40	26-MAR-18
WG2739309-2 LCS								
Benzene			100.1		%		70-130	26-MAR-18
Ethylbenzene			95.1		%		70-130	26-MAR-18
m+p-Xylenes			100.9		%		70-130	26-MAR-18
o-Xylene			95.1		%		70-130	26-MAR-18
Toluene			97.0		%		70-130	26-MAR-18
WG2739309-1 MB								
Benzene			<0.0068		ug/g		0.0068	26-MAR-18
Ethylbenzene			<0.018		ug/g		0.018	26-MAR-18
m+p-Xylenes			<0.030		ug/g		0.03	26-MAR-18
o-Xylene			<0.020		ug/g		0.02	26-MAR-18
Toluene			<0.080		ug/g		0.08	26-MAR-18
Surrogate: 1,4-Difluorobenzene			91.9		%		50-140	26-MAR-18
Surrogate: 4-Bromofluorobenzene			89.4		%		50-140	26-MAR-18
WG2739309-5 MS		**L2069450-5**						
Benzene			107.2		%		60-140	26-MAR-18
Ethylbenzene			101.2		%		60-140	26-MAR-18
m+p-Xylenes			107.4		%		60-140	26-MAR-18
o-Xylene			102.0		%		60-140	26-MAR-18
Toluene			103.7		%		60-140	26-MAR-18
F1-HS-511-WT	**Soil**							
Batch R3995496								
WG2739309-4 DUP		**WG2739309-3**						
F1 (C6-C10)		<5.0	<5.0	RPD-NA	ug/g	N/A	30	26-MAR-18
WG2739309-2 LCS								
F1 (C6-C10)			100.4		%		80-120	26-MAR-18
WG2739309-1 MB								
F1 (C6-C10)			<5.0		ug/g		5	26-MAR-18
Surrogate: 3,4-Dichlorotoluene			90.4		%		60-140	26-MAR-18
WG2739309-6 MS		**L2070164-5**						

Quality Control Report

Client: G2S ENVIRONMENTAL CONSULTING, INC.
3370 S SERVICE ROAD SUITE 107
BURLINGTON ON L7N 3M6
Contact: DANA HASLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT	**Soil**							
Batch R3995496								
WG2739309-6 MS		**L2070164-5**						
F1 (C6-C10)			N/A	MS-B	%		-	27-MAR-18
F2-F4-511-WT	**Soil**							
Batch R3995249								
WG2738254-3 DUP		**WG2738254-5**						
F2 (C10-C16)		<10	<10	RPD-NA	ug/g	N/A	30	23-MAR-18
F3 (C16-C34)		<50	<50	RPD-NA	ug/g	N/A	30	23-MAR-18
F4 (C34-C50)		<50	<50	RPD-NA	ug/g	N/A	30	23-MAR-18
WG2738254-2 LCS								
F2 (C10-C16)			110.6		%		80-120	23-MAR-18
F3 (C16-C34)			109.9		%		80-120	23-MAR-18
F4 (C34-C50)			93.1		%		80-120	23-MAR-18
WG2738254-1 MB								
F2 (C10-C16)			<10		ug/g		10	23-MAR-18
F3 (C16-C34)			<50		ug/g		50	23-MAR-18
F4 (C34-C50)			<50		ug/g		50	23-MAR-18
Surrogate: 2-Bromobenzotrifluoride			78.7		%		60-140	23-MAR-18
WG2738254-4 MS		**WG2738254-5**						
F2 (C10-C16)			113.6		%		60-140	23-MAR-18
F3 (C16-C34)			107.1		%		60-140	23-MAR-18
F4 (C34-C50)			105.0		%		60-140	23-MAR-18
MOISTURE-WT	**Soil**							
Batch R3994669								
WG2738255-3 DUP		**L2071368-3**						
% Moisture		16.0	16.4		%	2.6	20	23-MAR-18
WG2738255-2 LCS								
% Moisture			99.8		%		90-110	23-MAR-18
WG2738255-1 MB								
% Moisture			<0.10		%		0.1	23-MAR-18
PAH-511-WT	**Soil**							
Batch R3996567								
WG2738258-3 DUP		**WG2738258-5**						
1-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	27-MAR-18
2-Methylnaphthalene		<0.030	<0.030	RPD-NA	ug/g	N/A	40	27-MAR-18
Acenaphthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	27-MAR-18

Quality Control Report

Client: G2S ENVIRONMENTAL CONSULTING, INC.
3370 S SERVICE ROAD SUITE 107
BURLINGTON ON L7N 3M6
Contact: DANA HASLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R3996567								
WG2738258-3 DUP		**WG2738258-5**						
Acenaphthylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	27-MAR-18
Anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	27-MAR-18
Benzo(a)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	27-MAR-18
Benzo(a)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	27-MAR-18
Benzo(b)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	27-MAR-18
Benzo(g,h,i)perylene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	27-MAR-18
Benzo(k)fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	27-MAR-18
Chrysene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	27-MAR-18
Dibenzo(ah)anthracene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	27-MAR-18
Fluoranthene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	27-MAR-18
Fluorene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	27-MAR-18
Indeno(1,2,3-cd)pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	27-MAR-18
Naphthalene		<0.013	<0.013	RPD-NA	ug/g	N/A	40	27-MAR-18
Phenanthrene		<0.046	<0.046	RPD-NA	ug/g	N/A	40	27-MAR-18
Pyrene		<0.050	<0.050	RPD-NA	ug/g	N/A	40	27-MAR-18
WG2738258-2 LCS								
1-Methylnaphthalene			104.2		%		50-140	27-MAR-18
2-Methylnaphthalene			103.3		%		50-140	27-MAR-18
Acenaphthene			101.9		%		50-140	27-MAR-18
Acenaphthylene			101.3		%		50-140	27-MAR-18
Anthracene			98.3		%		50-140	27-MAR-18
Benzo(a)anthracene			102.8		%		50-140	27-MAR-18
Benzo(a)pyrene			85.1		%		50-140	27-MAR-18
Benzo(b)fluoranthene			107.5		%		50-140	27-MAR-18
Benzo(g,h,i)perylene			94.3		%		50-140	27-MAR-18
Benzo(k)fluoranthene			101.1		%		50-140	27-MAR-18
Chrysene			100.5		%		50-140	27-MAR-18
Dibenzo(ah)anthracene			94.7		%		50-140	27-MAR-18
Fluoranthene			89.4		%		50-140	27-MAR-18
Fluorene			96.3		%		50-140	27-MAR-18
Indeno(1,2,3-cd)pyrene			87.8		%		50-140	27-MAR-18
Naphthalene			102.6		%		50-140	27-MAR-18
Phenanthrene			97.6		%		50-140	27-MAR-18

Quality Control Report

Client: G2S ENVIRONMENTAL CONSULTING, INC.
3370 S SERVICE ROAD SUITE 107
BURLINGTON ON L7N 3M6
Contact: DANA HASLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R3996567								
WG2738258-2 LCS								
Pyrene			89.4		%		50-140	27-MAR-18
WG2738258-1 MB								
1-Methylnaphthalene			<0.030		ug/g		0.03	27-MAR-18
2-Methylnaphthalene			<0.030		ug/g		0.03	27-MAR-18
Acenaphthene			<0.050		ug/g		0.05	27-MAR-18
Acenaphthylene			<0.050		ug/g		0.05	27-MAR-18
Anthracene			<0.050		ug/g		0.05	27-MAR-18
Benzo(a)anthracene			<0.050		ug/g		0.05	27-MAR-18
Benzo(a)pyrene			<0.050		ug/g		0.05	27-MAR-18
Benzo(b)fluoranthene			<0.050		ug/g		0.05	27-MAR-18
Benzo(g,h,i)perylene			<0.050		ug/g		0.05	27-MAR-18
Benzo(k)fluoranthene			<0.050		ug/g		0.05	27-MAR-18
Chrysene			<0.050		ug/g		0.05	27-MAR-18
Dibenzo(ah)anthracene			<0.050		ug/g		0.05	27-MAR-18
Fluoranthene			<0.050		ug/g		0.05	27-MAR-18
Fluorene			<0.050		ug/g		0.05	27-MAR-18
Indeno(1,2,3-cd)pyrene			<0.050		ug/g		0.05	27-MAR-18
Naphthalene			<0.013		ug/g		0.013	27-MAR-18
Phenanthrene			<0.046		ug/g		0.046	27-MAR-18
Pyrene			<0.050		ug/g		0.05	27-MAR-18
Surrogate: 2-Fluorobiphenyl			94.1		%		50-140	27-MAR-18
Surrogate: p-Terphenyl d14			87.0		%		50-140	27-MAR-18
WG2738258-4 MS		**WG2738258-5**						
1-Methylnaphthalene			105.4		%		50-140	27-MAR-18
2-Methylnaphthalene			105.6		%		50-140	27-MAR-18
Acenaphthene			103.7		%		50-140	27-MAR-18
Acenaphthylene			101.3		%		50-140	27-MAR-18
Anthracene			98.8		%		50-140	27-MAR-18
Benzo(a)anthracene			100.1		%		50-140	27-MAR-18
Benzo(a)pyrene			85.2		%		50-140	27-MAR-18
Benzo(b)fluoranthene			103.9		%		50-140	27-MAR-18
Benzo(g,h,i)perylene			93.5		%		50-140	27-MAR-18
Benzo(k)fluoranthene			106.5		%		50-140	27-MAR-18
Chrysene			102.5		%		50-140	27-MAR-18

Quality Control Report

Client: G2S ENVIRONMENTAL CONSULTING, INC.
3370 S SERVICE ROAD SUITE 107
BURLINGTON ON L7N 3M6
Contact: DANA HASLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Soil**							
Batch R3996567								
WG2738258-4 MS		**WG2738258-5**						
Dibenzo(ah)anthracene			95.3		%		50-140	27-MAR-18
Fluoranthene			89.8		%		50-140	27-MAR-18
Fluorene			98.4		%		50-140	27-MAR-18
Indeno(1,2,3-cd)pyrene			84.8		%		50-140	27-MAR-18
Naphthalene			104.6		%		50-140	27-MAR-18
Phenanthrene			99.6		%		50-140	27-MAR-18
Pyrene			90.2		%		50-140	27-MAR-18

Quality Control Report

Workorder: L2071368 Report Date: 28-MAR-18

Client: G2S ENVIRONMENTAL CONSULTING, INC.
3370 S SERVICE ROAD SUITE 107
BURLINGTON ON L7N 3M6
Contact: DANA HASLETT

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Quality Control Report

Workorder: L2071368 Report Date: 28-MAR-18

Client: G2S ENVIRONMENTAL CONSULTING, INC.
3370 S SERVICE ROAD SUITE 107
BURLINGTON ON L7N 3M6
Contact: DANA HASLETT

Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Physical Tests							
% Moisture							
	9	09-FEB-18	23-MAR-18 10:53	14	42	days	EHTR
Volatile Organic Compounds							
BTEX-O.Reg 153/04 (July 2011)							
	9	09-FEB-18	25-MAR-18 13:12	14	44	days	EHTR
Hydrocarbons							
F1-O.Reg 153/04 (July 2011)							
	9	09-FEB-18	25-MAR-18 13:12	14	44	days	EHTR
F2-F4-O.Reg 153/04 (July 2011)							
	9	09-FEB-18	23-MAR-18 10:00	14	42	days	EHTR

Legend & Qualifier Definitions:

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended.
EHTR: Exceeded ALS recommended hold time prior to sample receipt.
EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.
EHT: Exceeded ALS recommended hold time prior to analysis.
Rec. HT: ALS recommended hold time (see units).

Notes*:
Where actual sampling date is not provided to ALS, the date (& time) of receipt is used for calculation purposes.
Where actual sampling time is not provided to ALS, the earlier of 12 noon on the sampling date or the time (& date) of receipt is used for calculation purposes. Samples for L2071368 were received on 22-MAR-18 10:20.

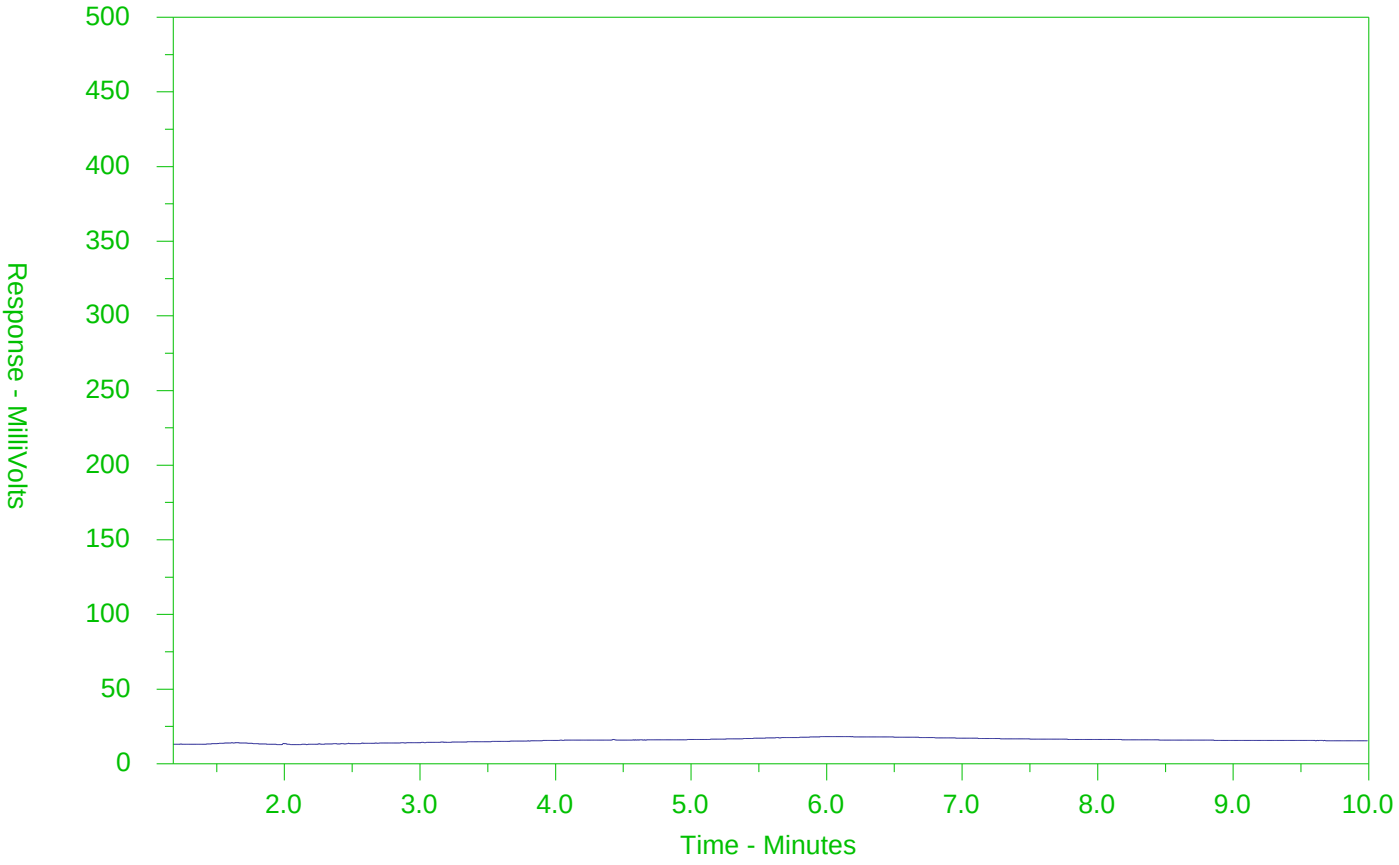
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2071368-2
Client Sample ID: BH202 SS4



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
←Diesel/Jet Fuels→			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

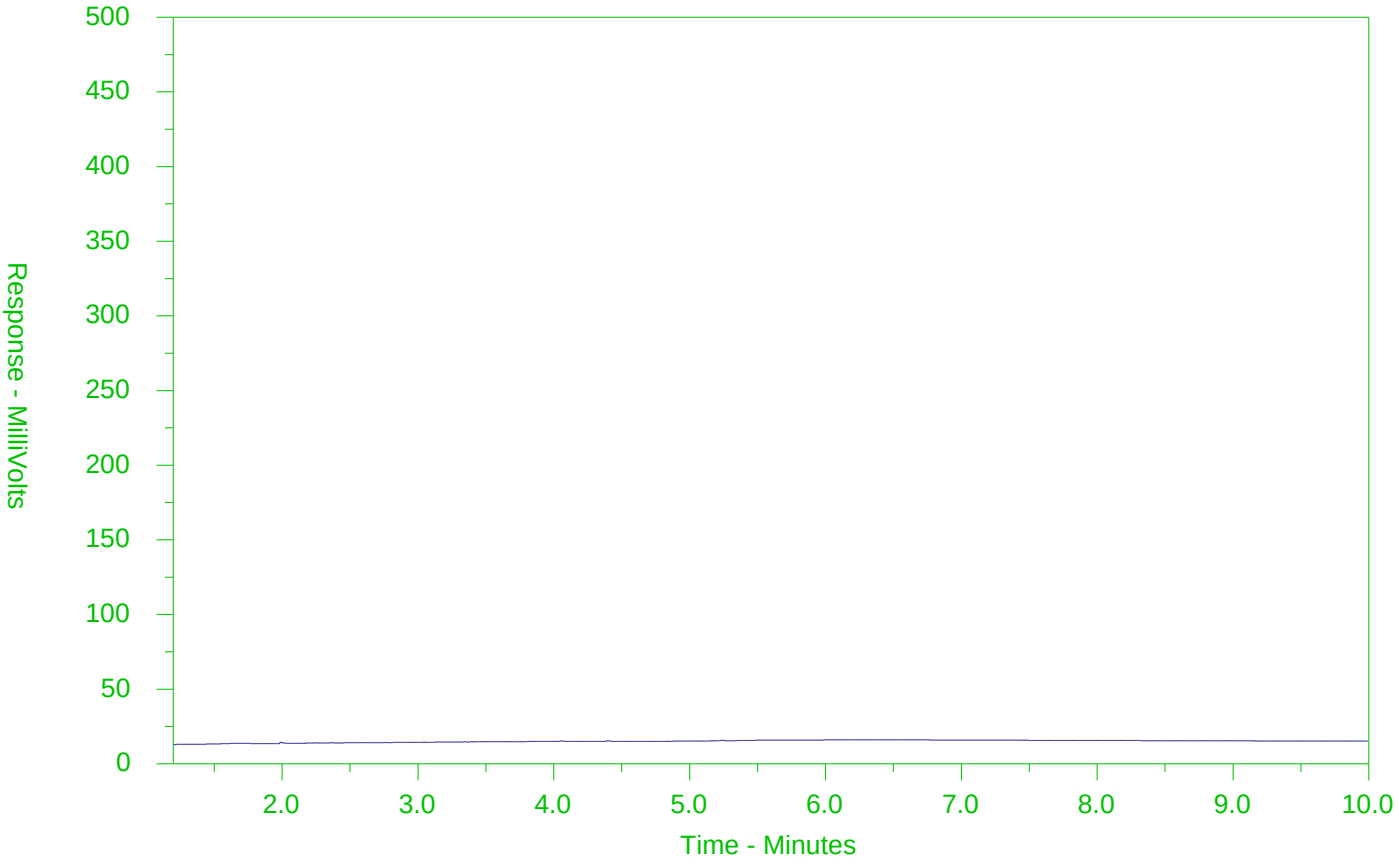
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2071368-3
Client Sample ID: BH203 SS3



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
←Diesel/Jet Fuels→			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

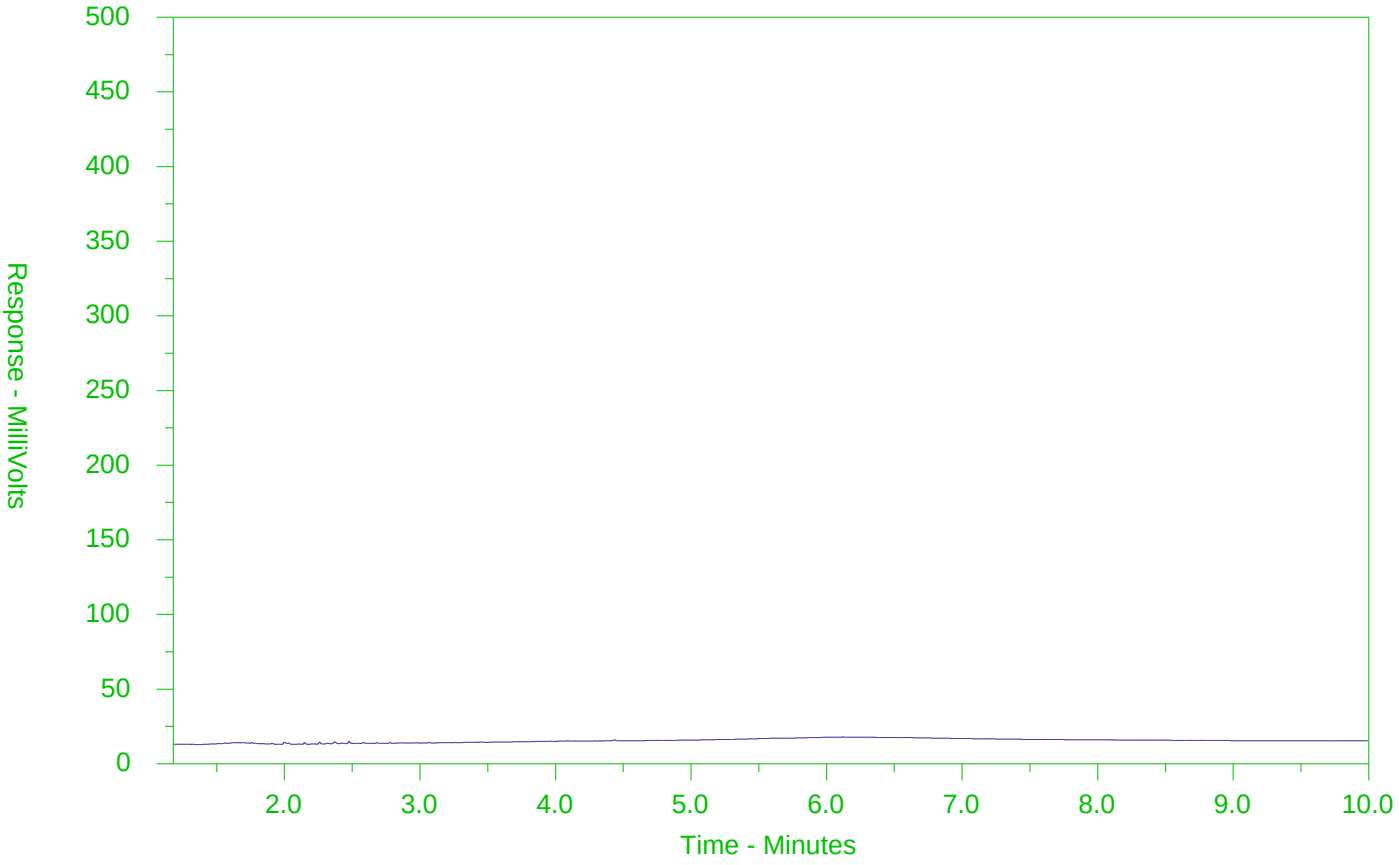
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2071368-4
Client Sample ID: BH204 SS4



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
←Diesel/Jet Fuels→			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

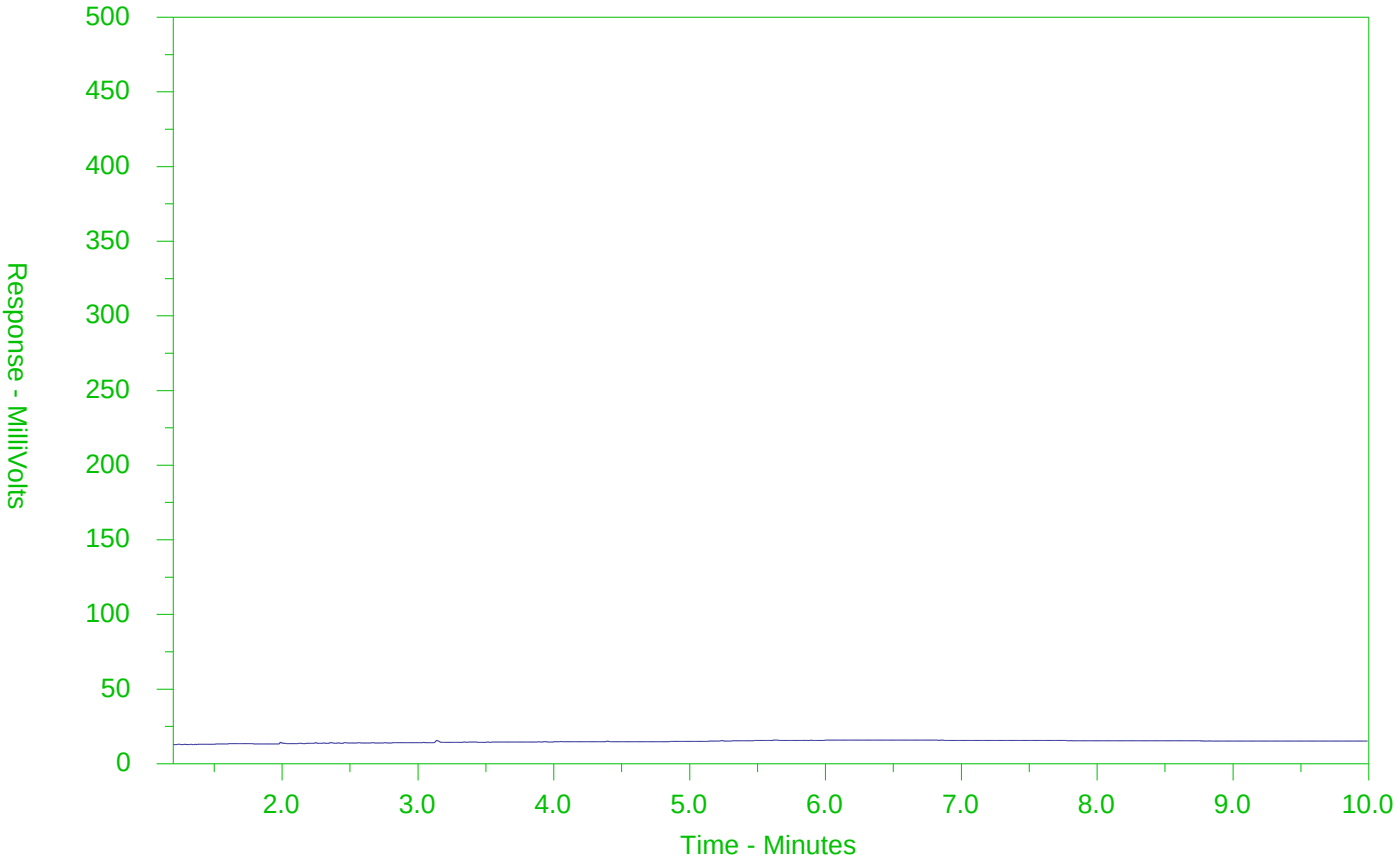
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2071368-5
Client Sample ID: BH205 SS3



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →	← Motor Oils/Lube Oils/Grease →		
←Diesel/Jet Fuels→			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

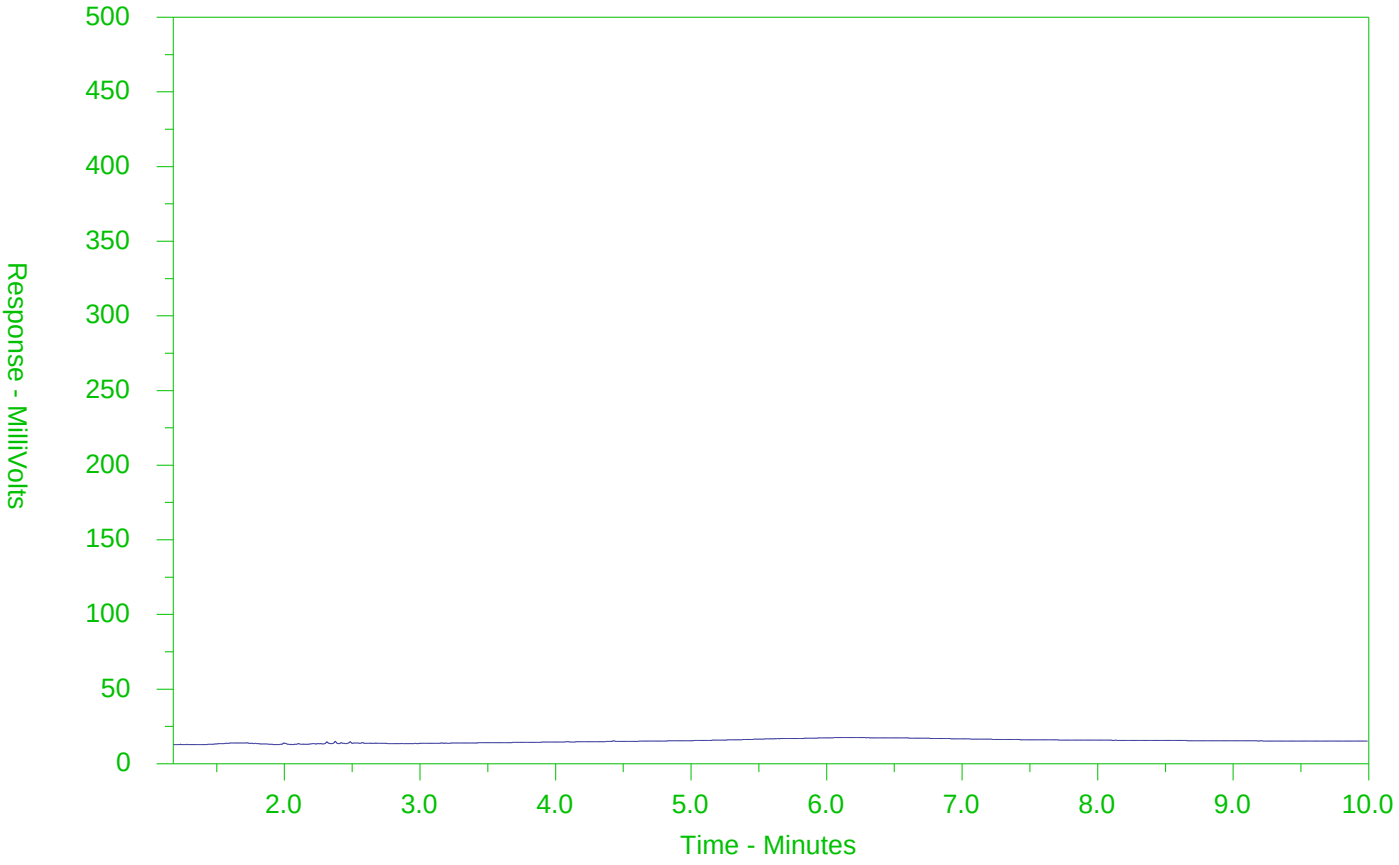
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2071368-6
Client Sample ID: BH206 SS4



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
←Diesel/Jet Fuels→			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

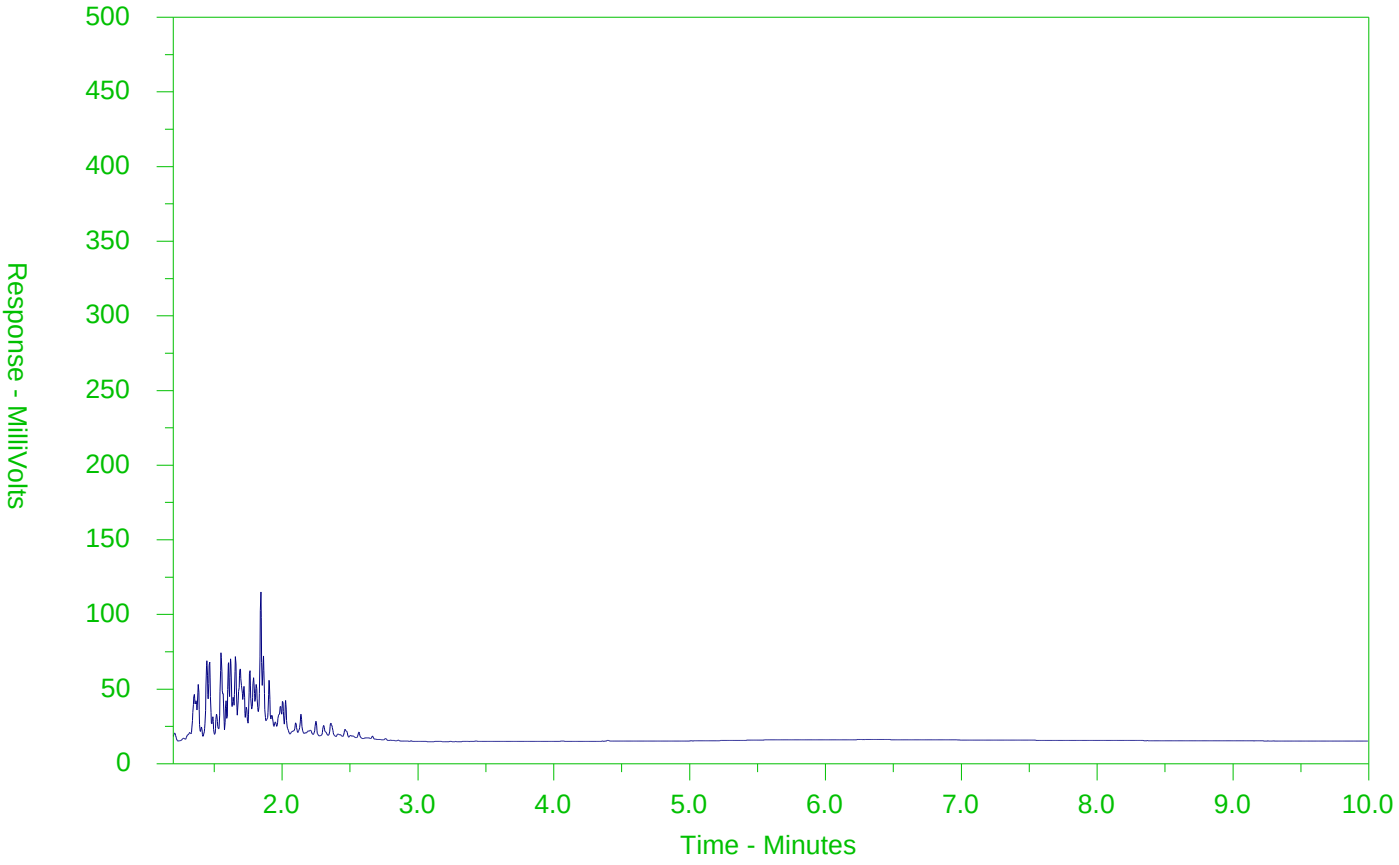
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2071368-7
Client Sample ID: BH207 SS4



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
←Diesel/Jet Fuels→			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

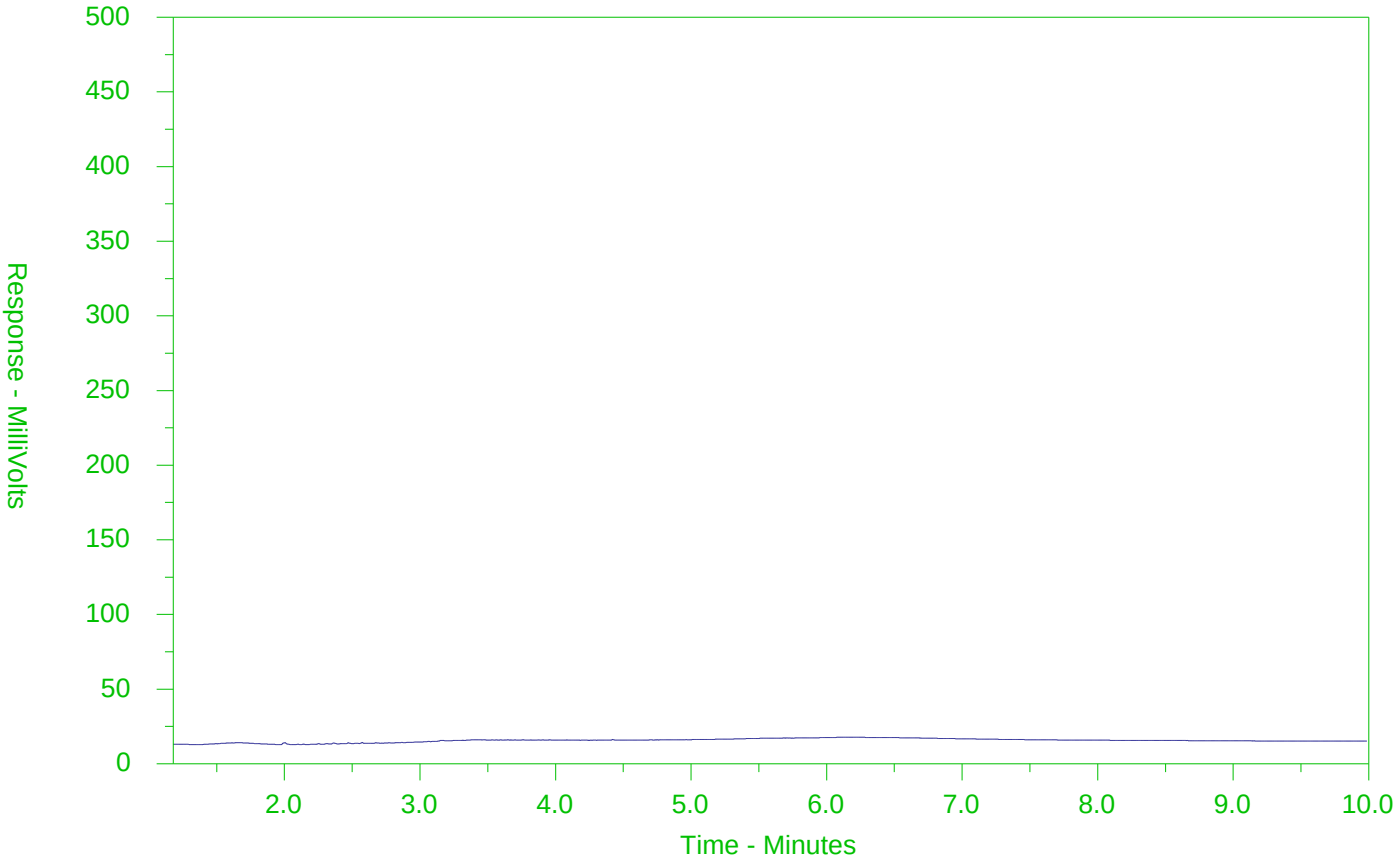
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2071368-8
Client Sample ID: BH223 SS3



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
←Diesel/Jet Fuels→			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

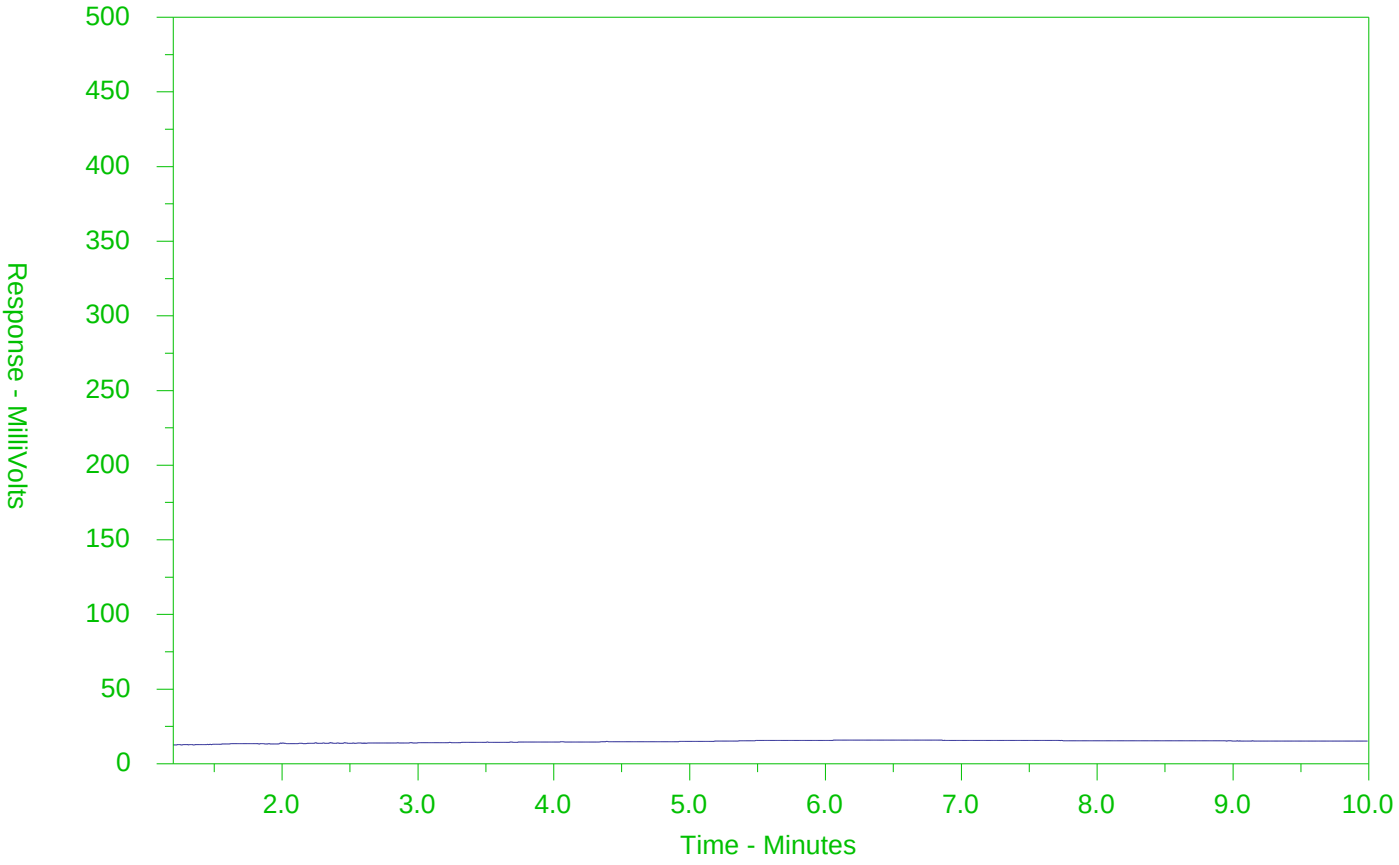
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2071368-9
Client Sample ID: BH103 SS8



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
←Diesel/Jet Fuels→			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

G2S ENVIRONMENTAL CONSULTING, INC.
ATTN: DANA HASLETT
107-3370 SOUTH SERVICE ROAD
BURLINGTON ON L7N 3M6

Date Received: 23-MAR-18
Report Date: 03-APR-18 07:38 (MT)
Version: FINAL

Client Phone: 416-616-7011

Certificate of Analysis

Lab Work Order #: L2072330

Project P.O. #: NOT SUBMITTED
Job Reference: G2S18006
C of C Numbers: 15-557233
Legal Site Desc:

Mathy Mahadeva
Account Manager

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Summary of Guideline Exceedances

Guideline ALS ID	Client ID	Grouping	Analyte	Result	Guideline Limit	Unit
Ontario Regulation 153/04 - April 15, 2011 Standards - T2-Soil-Res/Park/Inst. Property Use (Coarse)						
L2072330-11	TRIP SPIKE	Volatile Organic Compounds	Acetone	147	0.0016	%
			Benzene	115	0.000021	%
			Bromodichloromethane	108	0.00015	%
			Bromoform	98.4	0.000027	%
			Bromomethane	117	0.000005	%
			Carbon tetrachloride	103	0.000005	%
			Chlorobenzene	107	0.00024	%
			Dibromochloromethane	107	0.00023	%
			Chloroform	113	0.000005	%
			1,2-Dibromoethane	111	0.000005	%
			1,2-Dichlorobenzene	107	0.00012	%
			1,3-Dichlorobenzene	102	0.00048	%
			1,4-Dichlorobenzene	104	0.0000083	%
			Dichlorodifluoromethane	99.7	0.0016	%
			1,1-Dichloroethane	118	0.000047	%
			1,2-Dichloroethane	119	0.000005	%
			1,1-Dichloroethylene	108	0.000005	%
			cis-1,2-Dichloroethylene	113	0.00019	%
			trans-1,2-Dichloroethylene	115	0.0000084	%
			Methylene Chloride	121	0.00001	%
			1,2-Dichloropropane	117	0.000005	%
			Ethylbenzene	98.9	0.00011	%
			n-Hexane	95.1	0.00028	%
			Methyl Ethyl Ketone	125	0.0016	%
			Methyl Isobutyl Ketone	116	0.00017	%
			MTBE	111	0.000075	%
			Styrene	95.1	0.00007	%
			1,1,1,2-Tetrachloroethane	101	0.0000058	%
			1,1,2,2-Tetrachloroethane	111	0.000005	%
			Tetrachloroethylene	96.5	0.000028	%
			Toluene	106	0.00023	%
			1,1,1-Trichloroethane	107	0.000038	%
			1,1,2-Trichloroethane	113	0.000005	%
			Trichloroethylene	106	0.0000061	%
			Trichlorofluoromethane	115	0.0004	%
			Vinyl chloride	119	0.000002	%

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Volatile Organic Compounds - WATER

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID	L2072330-1	L2072330-2	L2072330-3	L2072330-4	L2072330-5	L2072330-6	L2072330-7	L2072330-8	L2072330-9
				Sample Date	23-MAR-18	23-MAR-18	23-MAR-18	23-MAR-18	23-MAR-18	23-MAR-18	23-MAR-18	23-MAR-18	23-MAR-18
				Sample ID	MW201	MW202	MW203	MW204	MW205	MW206	MW207	MW102	MW103
Acetone	%	0.0016	-										
Acetone	ug/L	-	-	<30									
Benzene	%	0.000021	-										
Benzene	ug/L	-	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2.53	
Bromodichloromethane	%	0.00015	-										
Bromodichloromethane	ug/L	-	-	<2.0									
Bromoform	%	0.000027	-										
Bromoform	ug/L	-	-	<5.0									
Bromomethane	%	0.000005	-										
Bromomethane	ug/L	-	-	<0.50									
Carbon tetrachloride	%	0.000005	-										
Carbon tetrachloride	ug/L	-	-	<0.20									
Chlorobenzene	%	0.00024	-										
Chlorobenzene	ug/L	-	-	<0.50									
Dibromochloromethane	%	0.00023	-										
Dibromochloromethane	ug/L	-	-	<2.0									
Chloroform	%	0.000005	-										
Chloroform	ug/L	-	-	<1.0									
1,2-Dibromoethane	%	0.000005	-										
1,2-Dibromoethane	ug/L	-	-	<0.20									
1,2-Dichlorobenzene	%	0.00012	-										
1,2-Dichlorobenzene	ug/L	-	-	<0.50									
1,3-Dichlorobenzene	%	0.00048	-										
1,3-Dichlorobenzene	ug/L	-	-	<0.50									
1,4-Dichlorobenzene	%	0.0000083	-										
1,4-Dichlorobenzene	ug/L	-	-	<0.50									
Dichlorodifluoromethane	%	0.0016	-										
Dichlorodifluoromethane	ug/L	-	-	<2.0									

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Volatile Organic Compounds - WATER

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID	L2072330-10	L2072330-11	L2072330-12
				Sample Date	23-MAR-18	23-MAR-18	23-MAR-18
				Sample ID	MW221	TRIP SPIKE	TRIP BLANK
Acetone	%	0.0016	-			147	
Acetone	ug/L	-	-		<30		<30
Benzene	%	0.000021	-			115	
Benzene	ug/L	-	-		<0.50		<0.50
Bromodichloromethane	%	0.00015	-			108	
Bromodichloromethane	ug/L	-	-		<2.0		<2.0
Bromoform	%	0.000027	-			98.4	
Bromoform	ug/L	-	-		<5.0		<5.0
Bromomethane	%	0.000005	-			117	
Bromomethane	ug/L	-	-		<0.50		<0.50
Carbon tetrachloride	%	0.000005	-			103	
Carbon tetrachloride	ug/L	-	-		<0.20		<0.20
Chlorobenzene	%	0.00024	-			107	
Chlorobenzene	ug/L	-	-		<0.50		<0.50
Dibromochloromethane	%	0.00023	-			107	
Dibromochloromethane	ug/L	-	-		<2.0		<2.0
Chloroform	%	0.000005	-			113	
Chloroform	ug/L	-	-		<1.0		<1.0
1,2-Dibromoethane	%	0.000005	-			111	
1,2-Dibromoethane	ug/L	-	-		<0.20		<0.20
1,2-Dichlorobenzene	%	0.00012	-			107	
1,2-Dichlorobenzene	ug/L	-	-		<0.50		<0.50
1,3-Dichlorobenzene	%	0.00048	-			102	
1,3-Dichlorobenzene	ug/L	-	-		<0.50		<0.50
1,4-Dichlorobenzene	%	0.0000083	-			104	
1,4-Dichlorobenzene	ug/L	-	-		<0.50		<0.50
Dichlorodifluoromethane	%	0.0016	-			99.7	
Dichlorodifluoromethane	ug/L	-	-		<2.0		<2.0

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Volatile Organic Compounds - WATER

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID	L2072330-1	L2072330-2	L2072330-3	L2072330-4	L2072330-5	L2072330-6	L2072330-7	L2072330-8	L2072330-9
				Sample Date	23-MAR-18	23-MAR-18	23-MAR-18	23-MAR-18	23-MAR-18	23-MAR-18	23-MAR-18	23-MAR-18	23-MAR-18
				Sample ID	MW201	MW202	MW203	MW204	MW205	MW206	MW207	MW102	MW103
1,1-Dichloroethane	%	0.000047	-										
1,1-Dichloroethane	ug/L	-	-	<0.50									
1,2-Dichloroethane	%	0.000005	-										
1,2-Dichloroethane	ug/L	-	-	<0.50									
1,1-Dichloroethylene	%	0.000005	-										
1,1-Dichloroethylene	ug/L	-	-	<0.50									
cis-1,2-Dichloroethylene	%	0.00019	-										
cis-1,2-Dichloroethylene	ug/L	-	-	<0.50									
trans-1,2-Dichloroethylene	%	0.0000084	-										
trans-1,2-Dichloroethylene	ug/L	-	-	<0.50									
Methylene Chloride	%	0.00001	-										
Methylene Chloride	ug/L	-	-	<5.0									
1,2-Dichloropropane	%	0.000005	-										
1,2-Dichloropropane	ug/L	-	-	<0.50									
cis-1,3-Dichloropropene	%	-	-										
cis-1,3-Dichloropropene	ug/L	-	-	<0.30									
trans-1,3-Dichloropropene	%	-	-										
trans-1,3-Dichloropropene	ug/L	-	-	<0.30									
1,3-Dichloropropene (cis & trans)	ug/L	-	-	<0.50									
Ethylbenzene	%	0.00011	-										
Ethylbenzene	ug/L	-	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	694 DLHC	<0.50	109	
n-Hexane	%	0.00028	-										
n-Hexane	ug/L	-	-	<0.50									
Methyl Ethyl Ketone	%	0.0016	-										
Methyl Ethyl Ketone	ug/L	-	-	<20									
Methyl Isobutyl Ketone	%	0.00017	-										
Methyl Isobutyl Ketone	ug/L	-	-	<20									
MTBE	%	0.000075	-										
MTBE	ug/L	-	-	<2.0									

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Volatile Organic Compounds - WATER

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID L2072330-10 Sample Date 23-MAR-18 Sample ID MW221	Lab ID L2072330-11 Sample Date 23-MAR-18 Sample ID TRIP SPIKE	Lab ID L2072330-12 Sample Date 23-MAR-18 Sample ID TRIP BLANK
1,1-Dichloroethane	%	0.000047	-		118	
1,1-Dichloroethane	ug/L	-	-	<0.50		<0.50
1,2-Dichloroethane	%	0.000005	-		119	
1,2-Dichloroethane	ug/L	-	-	<0.50		<0.50
1,1-Dichloroethylene	%	0.000005	-		108	
1,1-Dichloroethylene	ug/L	-	-	<0.50		<0.50
cis-1,2-Dichloroethylene	%	0.00019	-		113	
cis-1,2-Dichloroethylene	ug/L	-	-	<0.50		<0.50
trans-1,2-Dichloroethylene	%	0.0000084	-		115	
trans-1,2-Dichloroethylene	ug/L	-	-	<0.50		<0.50
Methylene Chloride	%	0.00001	-		121	
Methylene Chloride	ug/L	-	-	<5.0		<5.0
1,2-Dichloropropane	%	0.000005	-		117	
1,2-Dichloropropane	ug/L	-	-	<0.50		<0.50
cis-1,3-Dichloropropene	%	-	-		105	
cis-1,3-Dichloropropene	ug/L	-	-	<0.30		<0.30
trans-1,3-Dichloropropene	%	-	-		102	
trans-1,3-Dichloropropene	ug/L	-	-	<0.30		<0.30
1,3-Dichloropropene (cis & trans)	ug/L	-	-	<0.50		<0.50
Ethylbenzene	%	0.00011	-		98.9	
Ethylbenzene	ug/L	-	-	<0.50		<0.50
n-Hexane	%	0.00028	-		95.1	
n-Hexane	ug/L	-	-	<0.50		<0.50
Methyl Ethyl Ketone	%	0.0016	-		125	
Methyl Ethyl Ketone	ug/L	-	-	<20		<20
Methyl Isobutyl Ketone	%	0.00017	-		116	
Methyl Isobutyl Ketone	ug/L	-	-	<20		<20
MTBE	%	0.000075	-		111	
MTBE	ug/L	-	-	<2.0		<2.0

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Volatile Organic Compounds - WATER

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID	L2072330-1	L2072330-2	L2072330-3	L2072330-4	L2072330-5	L2072330-6	L2072330-7	L2072330-8	L2072330-9
				Sample Date	23-MAR-18	23-MAR-18	23-MAR-18	23-MAR-18	23-MAR-18	23-MAR-18	23-MAR-18	23-MAR-18	23-MAR-18
				Sample ID	MW201	MW202	MW203	MW204	MW205	MW206	MW207	MW102	MW103
Styrene	%	0.00007	-										
Styrene	ug/L	-	-	<0.50									
1,1,1,2-Tetrachloroethane	%	0.0000058	-										
1,1,1,2-Tetrachloroethane	ug/L	-	-	<0.50									
1,1,2,2-Tetrachloroethane	%	0.000005	-										
1,1,2,2-Tetrachloroethane	ug/L	-	-	<0.50									
Tetrachloroethylene	%	0.000028	-										
Tetrachloroethylene	ug/L	-	-	<0.50									
Toluene	%	0.00023	-										
Toluene	ug/L	-	-	<0.50	<0.50	<0.50	<0.50	0.68	<0.50	23.1	0.50	107	
1,1,1-Trichloroethane	%	0.000038	-										
1,1,1-Trichloroethane	ug/L	-	-	<0.50									
1,1,2-Trichloroethane	%	0.000005	-										
1,1,2-Trichloroethane	ug/L	-	-	<0.50									
Trichloroethylene	%	0.000061	-										
Trichloroethylene	ug/L	-	-	<0.50									
Trichlorofluoromethane	%	0.0004	-										
Trichlorofluoromethane	ug/L	-	-	<5.0									
Vinyl chloride	%	0.000002	-										
Vinyl chloride	ug/L	-	-	<0.50									
o-Xylene	%	-	-										
o-Xylene	ug/L	-	-	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	916 DLHC	0.95	230	
m+p-Xylenes	%	-	-										
m+p-Xylenes	ug/L	-	-	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	4160 DLHC	1.98	614 DLHC	
Xylenes (Total)	ug/L	-	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	5080	2.93	844	
Surrogate: 4-Bromofluorobenzene	%	-	-	91.8	95.0	94.8	95.4	95.3	94.4	99.7	99.9	108.7	
Surrogate: 1,4-Difluorobenzene	%	-	-	97.9	97.8	97.4	97.5	97.2	97.4	90.9	97.8	88.6	

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Volatile Organic Compounds - WATER

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID / Sample Date / Sample ID: L2072330-10 23-MAR-18 MW221	L2072330-11 23-MAR-18 TRIP SPIKE	L2072330-12 23-MAR-18 TRIP BLANK
Styrene	%	0.00007	-		95.1	
Styrene	ug/L	-	-	<0.50		<0.50
1,1,1,2-Tetrachloroethane	%	0.0000058	-		101	
1,1,1,2-Tetrachloroethane	ug/L	-	-	<0.50		<0.50
1,1,2,2-Tetrachloroethane	%	0.000005	-		111	
1,1,2,2-Tetrachloroethane	ug/L	-	-	<0.50		<0.50
Tetrachloroethylene	%	0.000028	-		96.5	
Tetrachloroethylene	ug/L	-	-	<0.50		<0.50
Toluene	%	0.00023	-		106	
Toluene	ug/L	-	-	<0.50		<0.50
1,1,1-Trichloroethane	%	0.000038	-		107	
1,1,1-Trichloroethane	ug/L	-	-	<0.50		<0.50
1,1,2-Trichloroethane	%	0.000005	-		113	
1,1,2-Trichloroethane	ug/L	-	-	<0.50		<0.50
Trichloroethylene	%	0.0000061	-		106	
Trichloroethylene	ug/L	-	-	<0.50		<0.50
Trichlorofluoromethane	%	0.0004	-		115	
Trichlorofluoromethane	ug/L	-	-	<5.0		<5.0
Vinyl chloride	%	0.000002	-		119	
Vinyl chloride	ug/L	-	-	<0.50		<0.50
o-Xylene	%	-	-		99.5	
o-Xylene	ug/L	-	-	<0.30		<0.30
m+p-Xylenes	%	-	-		102	
m+p-Xylenes	ug/L	-	-	<0.40		<0.40
Xylenes (Total)	ug/L	-	-	<0.50		<0.50
Surrogate: 4-Bromofluorobenzene	%	-	-	89.8	97.4	91.5
Surrogate: 1,4-Difluorobenzene	%	-	-	97.9	98.3	98.2

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Volatile Organic Compounds - WATER

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Hydrocarbons - WATER

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID	L2072330-1	L2072330-2	L2072330-3	L2072330-4	L2072330-5	L2072330-6	L2072330-7	L2072330-8	L2072330-9
				Sample Date	23-MAR-18	23-MAR-18	23-MAR-18	23-MAR-18	23-MAR-18	23-MAR-18	23-MAR-18	23-MAR-18	23-MAR-18
				Sample ID	MW201	MW202	MW203	MW204	MW205	MW206	MW207	MW102	MW103
F1 (C6-C10)	ug/L	-	-		<25	<25	<25	<25	<25	<25	15400 DLHC	3540	8860 DLHC
F1-BTEX	ug/L	-	-		<25	<25	<25	<25	<25	<25	9600	3540	7800
F2 (C10-C16)	ug/L	-	-		<100	<100	<100	<100	<100	<100	8340	9790	3560
F2-Naphth	ug/L	-	-		<100	<100	<100	<100	<100	<100	7510	9790	3460
F3 (C16-C34)	ug/L	-	-		<250	<250	<250	<250	<250	<250	<250	5550	<250
F3-PAH	ug/L	-	-		<250	<250	<250	<250	<250	<250	<250	5520	<250
F4 (C34-C50)	ug/L	-	-		<250	<250	<250	<250	<250	<250	<250	<250	<250
Total Hydrocarbons (C6-C50)	ug/L	-	-		<370	<370	<370	<370	<370	<370	23700	18900	12400
Chrom. to baseline at nC50		-	-		YES	YES	YES	YES	YES	YES	YES	YES	YES
Surrogate: 2-Bromobenzotrifluoride	%	-	-		83.5	85.9	90.9	88.6	85.7	80.1	123.2	84.5	107.1
Surrogate: 3,4-Dichlorotoluene	%	-	-		96.8	82.1	85.5	89.4	87.4	88.5	100.5	112.7	92.6

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

ANALYTICAL REPORT

Hydrocarbons - WATER

		Guide Limits		Lab ID	L2072330-10
				Sample Date	23-MAR-18
				Sample ID	MW221
Analyte	Unit	#1	#2		
F1 (C6-C10)	ug/L	-	-	<25	
F1-BTEX	ug/L	-	-	<25	
F2 (C10-C16)	ug/L	-	-	<100	
F2-Naphth	ug/L	-	-	<100	
F3 (C16-C34)	ug/L	-	-	<250	
F3-PAH	ug/L	-	-	<250	
F4 (C34-C50)	ug/L	-	-	<250	
Total Hydrocarbons (C6-C50)	ug/L	-	-	<370	
Chrom. to baseline at nC50		-	-	YES	
Surrogate: 2-Bromobenzotrifluoride	%	-	-	80.2	
Surrogate: 3,4-Dichlorotoluene	%	-	-	90.1	

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Polycyclic Aromatic Hydrocarbons - WATER

Analyte	Unit	Guide Limits #1	Guide Limits #2	Lab ID	L2072330-1	L2072330-2	L2072330-3	L2072330-4	L2072330-5	L2072330-6	L2072330-7	L2072330-8	L2072330-9
				Sample Date	23-MAR-18	23-MAR-18	23-MAR-18	23-MAR-18	23-MAR-18	23-MAR-18	23-MAR-18	23-MAR-18	23-MAR-18
				Sample ID	MW201	MW202	MW203	MW204	MW205	MW206	MW207	MW102	MW103
Acenaphthene	ug/L	-	-		<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.696	2.59	0.272
Acenaphthylene	ug/L	-	-		<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.246	0.894	0.121
Anthracene	ug/L	-	-		<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.065	2.01	0.038
Benzo(a)anthracene	ug/L	-	-		<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.027	0.072	<0.020
Benzo(a)pyrene	ug/L	-	-		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(b)fluoranthene	ug/L	-	-		<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(g,h,i)perylene	ug/L	-	-		<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(k)fluoranthene	ug/L	-	-		<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Chrysene	ug/L	-	-		<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.026	0.133	<0.020
Dibenzo(ah)anthracene	ug/L	-	-		<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Fluoranthene	ug/L	-	-		<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.090	0.236	0.050
Fluorene	ug/L	-	-		<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.996	7.04	0.436
Indeno(1,2,3-cd)pyrene	ug/L	-	-		<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
1+2-Methylnaphthalenes	ug/L	-	-		<0.028	<0.028	<0.028	<0.028	<0.028	<0.028	536	30.6	164
1-Methylnaphthalene	ug/L	-	-		<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	178 DLHC	7.05	53.9 DLHC
2-Methylnaphthalene	ug/L	-	-		<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	357 DLHC	23.5 DLHC	110 DLHC
Naphthalene	ug/L	-	-		<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	826 DLHC	<3.50 DLQ	92.6 DLHC
Phenanthrene	ug/L	-	-		<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.966	26.8 DLHC	0.541
Pyrene	ug/L	-	-		<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.133	1.16	0.090
Surrogate: d10-Acenaphthene	%	-	-		99.2	101.8	101.3	104.1	97.3	103.4	100.7	65.2	102.1
Surrogate: d12-Chrysene	%	-	-		94.5	97.2	95.5	99.9	95.8	93.5	102.6	76.6	100.8
Surrogate: d8-Naphthalene	%	-	-		98.7	89.3	103.8	104.5	83.6	118.3	85.6	65.9	113.7
Surrogate: d10-Phenanthrene	%	-	-		99.8	103.3	101.6	104.5	98.0	102.2	77.6	80.6	84.6

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Polycyclic Aromatic Hydrocarbons - WATER

			Lab ID	L2072330-10
			Sample Date	23-MAR-18
			Sample ID	MW221
		Guide Limits		
Analyte	Unit	#1	#2	
Acenaphthene	ug/L	-	-	<0.020
Acenaphthylene	ug/L	-	-	<0.020
Anthracene	ug/L	-	-	<0.020
Benzo(a)anthracene	ug/L	-	-	<0.020
Benzo(a)pyrene	ug/L	-	-	<0.010
Benzo(b)fluoranthene	ug/L	-	-	<0.020
Benzo(g,h,i)perylene	ug/L	-	-	<0.020
Benzo(k)fluoranthene	ug/L	-	-	<0.020
Chrysene	ug/L	-	-	<0.020
Dibenzo(ah)anthracene	ug/L	-	-	<0.020
Fluoranthene	ug/L	-	-	<0.020
Fluorene	ug/L	-	-	<0.020
Indeno(1,2,3-cd)pyrene	ug/L	-	-	<0.020
1+2-Methylnaphthalenes	ug/L	-	-	<0.028
1-Methylnaphthalene	ug/L	-	-	<0.020
2-Methylnaphthalene	ug/L	-	-	<0.020
Naphthalene	ug/L	-	-	<0.050
Phenanthrene	ug/L	-	-	<0.020
Pyrene	ug/L	-	-	<0.020
Surrogate: d10-Acenaphthene	%	-	-	99.5
Surrogate: d12-Chrysene	%	-	-	90.8
Surrogate: d8-Naphthalene	%	-	-	99.2
Surrogate: d10-Phenanthrene	%	-	-	101.2

Guide Limit #1: T2-Soil-Res/Park/Inst. Property Use (Coarse)

Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
Analytical result for this parameter exceeds Guide Limits listed. See Summary of Guideline Exceedances.

* Please refer to the Reference Information section for an explanation of any qualifiers noted.

Reference Information

Qualifiers for Individual Parameters Listed:

Qualifier	Description
DLQ	Detection Limit raised due to co-eluting interference. GCMS qualifier ion ratio did not meet acceptance criteria.
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
BTX-511-HS-WT	Water	BTEX by Headspace	SW846 8260 (511)

BTX is determined by analyzing by headspace-GC/MS.

F1-F4-511-CALC-WT	Water	F1-F4 Hydrocarbon Calculated Parameters	CCME CWS-PHC, Pub #1310, Dec 2001-L

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F1-HS-511-WT	Water	F1-O.Reg 153/04 (July 2011)	E3398/CCME TIER 1-HS

Fraction F1 is determined by analyzing by headspace-GC/FID.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

F2-F4-511-WT	Water	F2-F4-O.Reg 153/04 (July 2011)	EPA 3511/CCME Tier 1

Petroleum Hydrocarbons (F2-F4 fractions) are extracted from water using a hexane micro-extraction technique. Instrumental analysis is by GC-FID, as per the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Tier 1 Method, CCME, 2001.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).

METHYLNAPS-CALC-WT	Water	PAH-Calculated Parameters	SW846 8270
PAH-511-WT	Water	PAH-O. Reg 153/04 (July 2011)	SW846 3510/8270

Aqueous samples, fortified with surrogates, are extracted using liquid/liquid extraction technique. The sample extracts are concentrated and then analyzed using GC/MS. Results for benzo(b) fluoranthene may include contributions from benzo(j)fluoranthene, if also present in the sample.

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference**
		Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).	
VOC-1,3-DCP-CALC-WT	Water	Regulation 153 VOCs	SW8260B/SW8270C
VOC-511-HS-WT	Water	VOC by GCMS HS O.Reg 153/04 (July 2011)	SW846 8260
		Liquid samples are analyzed by headspace GC/MSD.	
		Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011), unless a subset of the Analytical Test Group (ATG) has been requested (the Protocol states that all analytes in an ATG must be reported).	
XYLENES-SUM-CALC-WT	Water	Sum of Xylene Isomer Concentrations	CALCULATION
		Total xylenes represents the sum of o-xylene and m&p-xylene.	

**ALS test methods may incorporate modifications from specified reference methods to improve performance.

Chain of Custody Numbers:

15-557233

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information.

Quality Control Report

Client: G2S ENVIRONMENTAL CONSULTING, INC.
107-3370 SOUTH SERVICE ROAD
BURLINGTON ON L7N 3M6
Contact: DANA HASLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTX-511-HS-WT	**Water**							
Batch R3996807								
WG2737590-4 DUP		**WG2737590-3**						
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-MAR-18
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-MAR-18
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	28-MAR-18
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	28-MAR-18
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-MAR-18
WG2737590-1 LCS								
Benzene			99.0		%		70-130	28-MAR-18
Ethylbenzene			91.0		%		70-130	28-MAR-18
m+p-Xylenes			98.3		%		70-130	28-MAR-18
o-Xylene			94.4		%		70-130	28-MAR-18
Toluene			96.0		%		70-130	28-MAR-18
WG2737590-2 MB								
Benzene			<0.50		ug/L		0.5	28-MAR-18
Ethylbenzene			<0.50		ug/L		0.5	28-MAR-18
m+p-Xylenes			<0.40		ug/L		0.4	28-MAR-18
o-Xylene			<0.30		ug/L		0.3	28-MAR-18
Toluene			<0.50		ug/L		0.5	28-MAR-18
Surrogate: 1,4-Difluorobenzene			97.2		%		70-130	28-MAR-18
Surrogate: 4-Bromofluorobenzene			96.3		%		70-130	28-MAR-18
WG2737590-5 MS		**WG2737590-3**						
Benzene			98.6		%		50-140	28-MAR-18
Ethylbenzene			92.8		%		50-140	28-MAR-18
m+p-Xylenes			100.8		%		50-140	28-MAR-18
o-Xylene			94.9		%		50-140	28-MAR-18
Toluene			97.8		%		50-140	28-MAR-18
Batch R3997078								
WG2740575-4 DUP		**WG2740575-3**						
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-MAR-18
m+p-Xylenes		0.50	0.47		ug/L	6.2	30	28-MAR-18
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	28-MAR-18
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-MAR-18
WG2740575-1 LCS								
Ethylbenzene			88.9		%		70-130	28-MAR-18
m+p-Xylenes			98.3		%		70-130	28-MAR-18

Quality Control Report

Client: G2S ENVIRONMENTAL CONSULTING, INC.
107-3370 SOUTH SERVICE ROAD
BURLINGTON ON L7N 3M6
Contact: DANA HASLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTX-511-HS-WT	**Water**							
Batch R3997078								
WG2740575-1 LCS								
o-Xylene			92.3		%		70-130	28-MAR-18
Toluene			96.1		%		70-130	28-MAR-18
WG2740575-2 MB								
Ethylbenzene			<0.50		ug/L		0.5	28-MAR-18
m+p-Xylenes			<0.40		ug/L		0.4	28-MAR-18
o-Xylene			<0.30		ug/L		0.3	28-MAR-18
Toluene			<0.50		ug/L		0.5	28-MAR-18
WG2740575-5 MS		**WG2740575-3**						
Ethylbenzene			91.6		%		50-140	28-MAR-18
m+p-Xylenes			101.5		%		50-140	28-MAR-18
o-Xylene			93.7		%		50-140	28-MAR-18
Toluene			98.0		%		50-140	28-MAR-18
F1-HS-511-WT	**Water**							
Batch R3996105								
WG2736506-4 DUP		**WG2736506-3**						
F1 (C6-C10)		<25	<25	RPD-NA	ug/L	N/A	30	28-MAR-18
WG2736506-1 LCS								
F1 (C6-C10)			104.3		%		80-120	27-MAR-18
WG2736506-2 MB								
F1 (C6-C10)			<25		ug/L		25	28-MAR-18
Surrogate: 3,4-Dichlorotoluene			100.4		%		60-140	28-MAR-18
WG2736506-5 MS		**L2072330-10**						
F1 (C6-C10)			96.5		%		60-140	28-MAR-18
Batch R3996807								
WG2737590-4 DUP		**WG2737590-3**						
F1 (C6-C10)		<25	<25	RPD-NA	ug/L	N/A	30	28-MAR-18
WG2737590-1 LCS								
F1 (C6-C10)			97.7		%		80-120	28-MAR-18
WG2737590-2 MB								
F1 (C6-C10)			<25		ug/L		25	28-MAR-18
Surrogate: 3,4-Dichlorotoluene			105.7		%		60-140	28-MAR-18
WG2737590-5 MS		**WG2737590-3**						
F1 (C6-C10)			81.0		%		60-140	28-MAR-18

Quality Control Report

Client: G2S ENVIRONMENTAL CONSULTING, INC.
107-3370 SOUTH SERVICE ROAD
BURLINGTON ON L7N 3M6
Contact: DANA HASLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-511-WT	**Water**							
Batch R3997078								
WG2740575-4 DUP		**WG2740575-3**						
F1 (C6-C10)		<25	<25	RPD-NA	ug/L	N/A	30	28-MAR-18
WG2740575-1 LCS								
F1 (C6-C10)			93.3		%		80-120	28-MAR-18
WG2740575-2 MB								
F1 (C6-C10)			<25		ug/L		25	28-MAR-18
Surrogate: 3,4-Dichlorotoluene			99.2		%		60-140	28-MAR-18
WG2740575-5 MS		**WG2740575-3**						
F1 (C6-C10)			81.5		%		60-140	28-MAR-18
F2-F4-511-WT	**Water**							
Batch R3998148								
WG2740916-2 LCS								
F2 (C10-C16)			93.1		%		70-130	28-MAR-18
F3 (C16-C34)			95.4		%		70-130	28-MAR-18
F4 (C34-C50)			95.4		%		70-130	28-MAR-18
WG2740916-3 LCSD		**WG2740916-2**						
F2 (C10-C16)		93.1	105.0		%	12	50	28-MAR-18
F3 (C16-C34)		95.4	107.2		%	12	50	28-MAR-18
F4 (C34-C50)		95.4	105.8		%	10	50	28-MAR-18
WG2740916-1 MB								
F2 (C10-C16)			<100		ug/L		100	28-MAR-18
F3 (C16-C34)			<250		ug/L		250	28-MAR-18
F4 (C34-C50)			<250		ug/L		250	28-MAR-18
Surrogate: 2-Bromobenzotrifluoride			91.2		%		60-140	28-MAR-18
PAH-511-WT	**Water**							
Batch R4000030								
WG2740916-2 LCS								
1-Methylnaphthalene			99.4		%		50-140	29-MAR-18
2-Methylnaphthalene			95.5		%		50-140	29-MAR-18
Acenaphthene			99.6		%		50-140	29-MAR-18
Acenaphthylene			98.8		%		50-140	29-MAR-18
Anthracene			98.4		%		50-140	29-MAR-18
Benzo(a)anthracene			114.3		%		50-140	29-MAR-18
Benzo(a)pyrene			100.5		%		50-140	29-MAR-18
Benzo(b)fluoranthene			95.1		%		50-140	29-MAR-18
Benzo(g,h,i)perylene			108.9		%		50-140	29-MAR-18

Quality Control Report

Client: G2S ENVIRONMENTAL CONSULTING, INC.
107-3370 SOUTH SERVICE ROAD
BURLINGTON ON L7N 3M6
Contact: DANA HASLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Water**							
Batch R4000030								
WG2740916-2 LCS								
Benzo(k)fluoranthene			102.2		%		50-140	29-MAR-18
Chrysene			110.3		%		50-140	29-MAR-18
Dibenzo(ah)anthracene			104.6		%		50-140	29-MAR-18
Fluoranthene			107.4		%		50-140	29-MAR-18
Fluorene			102.6		%		50-140	29-MAR-18
Indeno(1,2,3-cd)pyrene			112.6		%		50-140	29-MAR-18
Naphthalene			90.7		%		50-140	29-MAR-18
Phenanthrene			107.1		%		50-140	29-MAR-18
Pyrene			107.7		%		50-140	29-MAR-18
WG2740916-3 LCSD		**WG2740916-2**						
1-Methylnaphthalene		99.4	105.4		%	5.9	50	29-MAR-18
2-Methylnaphthalene		95.5	101.2		%	5.8	50	29-MAR-18
Acenaphthene		99.6	105.3		%	5.5	50	29-MAR-18
Acenaphthylene		98.8	103.9		%	5.1	50	29-MAR-18
Anthracene		98.4	96.9		%	1.6	50	29-MAR-18
Benzo(a)anthracene		114.3	116.4		%	1.8	50	29-MAR-18
Benzo(a)pyrene		100.5	108.2		%	7.4	50	29-MAR-18
Benzo(b)fluoranthene		95.1	105.0		%	9.9	50	29-MAR-18
Benzo(g,h,i)perylene		108.9	117.0		%	7.2	50	29-MAR-18
Benzo(k)fluoranthene		102.2	110.9		%	8.2	50	29-MAR-18
Chrysene		110.3	109.3		%	0.9	50	29-MAR-18
Dibenzo(ah)anthracene		104.6	114.6		%	9.1	50	29-MAR-18
Fluoranthene		107.4	112.5		%	4.7	50	29-MAR-18
Fluorene		102.6	108.6		%	5.6	50	29-MAR-18
Indeno(1,2,3-cd)pyrene		112.6	119.7		%	6.1	50	29-MAR-18
Naphthalene		90.7	97.5		%	7.2	50	29-MAR-18
Phenanthrene		107.1	110.6		%	3.2	50	29-MAR-18
Pyrene		107.7	111.9		%	3.9	50	29-MAR-18
WG2740916-1 MB								
1-Methylnaphthalene			<0.020		ug/L		0.02	29-MAR-18
2-Methylnaphthalene			<0.020		ug/L		0.02	29-MAR-18
Acenaphthene			<0.020		ug/L		0.02	29-MAR-18
Acenaphthylene			<0.020		ug/L		0.02	29-MAR-18

Quality Control Report

Client: G2S ENVIRONMENTAL CONSULTING, INC.
107-3370 SOUTH SERVICE ROAD
BURLINGTON ON L7N 3M6
Contact: DANA HASLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH-511-WT	**Water**							
Batch R4000030								
WG2740916-1 MB								
Anthracene			<0.020		ug/L		0.02	29-MAR-18
Benzo(a)anthracene			<0.020		ug/L		0.02	29-MAR-18
Benzo(a)pyrene			<0.010		ug/L		0.01	29-MAR-18
Benzo(b)fluoranthene			<0.020		ug/L		0.02	29-MAR-18
Benzo(g,h,i)perylene			<0.020		ug/L		0.02	29-MAR-18
Benzo(k)fluoranthene			<0.020		ug/L		0.02	29-MAR-18
Chrysene			<0.020		ug/L		0.02	29-MAR-18
Dibenzo(ah)anthracene			<0.020		ug/L		0.02	29-MAR-18
Fluoranthene			<0.020		ug/L		0.02	29-MAR-18
Fluorene			<0.020		ug/L		0.02	29-MAR-18
Indeno(1,2,3-cd)pyrene			<0.020		ug/L		0.02	29-MAR-18
Naphthalene			<0.050		ug/L		0.05	29-MAR-18
Phenanthrene			<0.020		ug/L		0.02	29-MAR-18
Pyrene			<0.020		ug/L		0.02	29-MAR-18
Surrogate: d8-Naphthalene			101.1		%		60-140	29-MAR-18
Surrogate: d10-Phenanthrene			104.4		%		60-140	29-MAR-18
Surrogate: d12-Chrysene			101.3		%		60-140	29-MAR-18
Surrogate: d10-Acenaphthene			100.3		%		60-140	29-MAR-18
VOC-511-HS-WT	**Water**							
Batch R3996105								
WG2736506-4 DUP		**WG2736506-3**						
1,1,1,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-MAR-18
1,1,2,2-Tetrachloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-MAR-18
1,1,1-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-MAR-18
1,1,2-Trichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-MAR-18
1,1-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-MAR-18
1,1-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-MAR-18
1,2-Dibromoethane		<0.20	<0.20	RPD-NA	ug/L	N/A	30	28-MAR-18
1,2-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-MAR-18
1,2-Dichloroethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-MAR-18
1,2-Dichloropropane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-MAR-18
1,3-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-MAR-18
1,4-Dichlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-MAR-18

Quality Control Report

Client: G2S ENVIRONMENTAL CONSULTING, INC.
107-3370 SOUTH SERVICE ROAD
BURLINGTON ON L7N 3M6
Contact: DANA HASLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3996105								
WG2736506-4 DUP		**WG2736506-3**						
Acetone		<30	<30	RPD-NA	ug/L	N/A	30	28-MAR-18
Benzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-MAR-18
Bromodichloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	28-MAR-18
Bromoform		<5.0	<5.0	RPD-NA	ug/L	N/A	30	28-MAR-18
Bromomethane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-MAR-18
Carbon tetrachloride		<0.20	<0.20	RPD-NA	ug/L	N/A	30	28-MAR-18
Chlorobenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-MAR-18
Chloroform		<1.0	<1.0	RPD-NA	ug/L	N/A	30	28-MAR-18
cis-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-MAR-18
cis-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	28-MAR-18
Dibromochloromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	28-MAR-18
Dichlorodifluoromethane		<2.0	<2.0	RPD-NA	ug/L	N/A	30	28-MAR-18
Ethylbenzene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-MAR-18
n-Hexane		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-MAR-18
m+p-Xylenes		<0.40	<0.40	RPD-NA	ug/L	N/A	30	28-MAR-18
Methyl Ethyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	28-MAR-18
Methyl Isobutyl Ketone		<20	<20	RPD-NA	ug/L	N/A	30	28-MAR-18
Methylene Chloride		<5.0	<5.0	RPD-NA	ug/L	N/A	30	28-MAR-18
MTBE		<2.0	<2.0	RPD-NA	ug/L	N/A	30	28-MAR-18
o-Xylene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	28-MAR-18
Styrene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-MAR-18
Tetrachloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-MAR-18
Toluene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-MAR-18
trans-1,2-Dichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-MAR-18
trans-1,3-Dichloropropene		<0.30	<0.30	RPD-NA	ug/L	N/A	30	28-MAR-18
Trichloroethylene		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-MAR-18
Trichlorofluoromethane		<5.0	<5.0	RPD-NA	ug/L	N/A	30	28-MAR-18
Vinyl chloride		<0.50	<0.50	RPD-NA	ug/L	N/A	30	28-MAR-18
WG2736506-1 LCS								
1,1,1,2-Tetrachloroethane			96.5		%		70-130	27-MAR-18
1,1,2,2-Tetrachloroethane			109.4		%		70-130	27-MAR-18
1,1,1-Trichloroethane			99.3		%		70-130	27-MAR-18
1,1,2-Trichloroethane			105.5		%		70-130	27-MAR-18

Quality Control Report

Client: G2S ENVIRONMENTAL CONSULTING, INC.
107-3370 SOUTH SERVICE ROAD
BURLINGTON ON L7N 3M6
Contact: DANA HASLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3996105								
WG2736506-1 LCS								
1,1-Dichloroethane			107.1		%		70-130	27-MAR-18
1,1-Dichloroethylene			97.1		%		70-130	27-MAR-18
1,2-Dibromoethane			104.3		%		70-130	27-MAR-18
1,2-Dichlorobenzene			101.0		%		70-130	27-MAR-18
1,2-Dichloroethane			109.7		%		70-130	27-MAR-18
1,2-Dichloropropane			108.4		%		70-130	27-MAR-18
1,3-Dichlorobenzene			96.8		%		70-130	27-MAR-18
1,4-Dichlorobenzene			100.1		%		70-130	27-MAR-18
Acetone			120.4		%		60-140	27-MAR-18
Benzene			106.4		%		70-130	27-MAR-18
Bromodichloromethane			100.9		%		70-130	27-MAR-18
Bromoform			96.3		%		70-130	27-MAR-18
Bromomethane			102.6		%		60-140	27-MAR-18
Carbon tetrachloride			95.9		%		70-130	27-MAR-18
Chlorobenzene			101.7		%		70-130	27-MAR-18
Chloroform			104.5		%		70-130	27-MAR-18
cis-1,2-Dichloroethylene			104.2		%		70-130	27-MAR-18
cis-1,3-Dichloropropene			106.5		%		70-130	27-MAR-18
Dibromochloromethane			100.7		%		70-130	27-MAR-18
Dichlorodifluoromethane			73.3		%		50-140	27-MAR-18
Ethylbenzene			96.8		%		70-130	27-MAR-18
n-Hexane			125.5		%		70-130	27-MAR-18
m+p-Xylenes			99.5		%		70-130	27-MAR-18
Methyl Ethyl Ketone			112.1		%		60-140	27-MAR-18
Methyl Isobutyl Ketone			113.4		%		60-140	27-MAR-18
Methylene Chloride			109.1		%		70-130	27-MAR-18
MTBE			100.9		%		70-130	27-MAR-18
o-Xylene			97.4		%		70-130	27-MAR-18
Styrene			95.2		%		70-130	27-MAR-18
Tetrachloroethylene			95.6		%		70-130	27-MAR-18
Toluene			100.5		%		70-130	27-MAR-18
trans-1,2-Dichloroethylene			107.0		%		70-130	27-MAR-18
trans-1,3-Dichloropropene			104.3		%		70-130	27-MAR-18

Quality Control Report

Client: G2S ENVIRONMENTAL CONSULTING, INC.
107-3370 SOUTH SERVICE ROAD
BURLINGTON ON L7N 3M6
Contact: DANA HASLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3996105								
WG2736506-1 LCS								
Trichloroethylene			100.9		%		70-130	27-MAR-18
Trichlorofluoromethane			103.2		%		60-140	27-MAR-18
Vinyl chloride			100.2		%		60-140	27-MAR-18
WG2736506-2 MB								
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	28-MAR-18
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	28-MAR-18
1,1,1-Trichloroethane			<0.50		ug/L		0.5	28-MAR-18
1,1,2-Trichloroethane			<0.50		ug/L		0.5	28-MAR-18
1,1-Dichloroethane			<0.50		ug/L		0.5	28-MAR-18
1,1-Dichloroethylene			<0.50		ug/L		0.5	28-MAR-18
1,2-Dibromoethane			<0.20		ug/L		0.2	28-MAR-18
1,2-Dichlorobenzene			<0.50		ug/L		0.5	28-MAR-18
1,2-Dichloroethane			<0.50		ug/L		0.5	28-MAR-18
1,2-Dichloropropane			<0.50		ug/L		0.5	28-MAR-18
1,3-Dichlorobenzene			<0.50		ug/L		0.5	28-MAR-18
1,4-Dichlorobenzene			<0.50		ug/L		0.5	28-MAR-18
Acetone			<30		ug/L		30	28-MAR-18
Benzene			<0.50		ug/L		0.5	28-MAR-18
Bromodichloromethane			<2.0		ug/L		2	28-MAR-18
Bromoform			<5.0		ug/L		5	28-MAR-18
Bromomethane			<0.50		ug/L		0.5	28-MAR-18
Carbon tetrachloride			<0.20		ug/L		0.2	28-MAR-18
Chlorobenzene			<0.50		ug/L		0.5	28-MAR-18
Chloroform			<1.0		ug/L		1	28-MAR-18
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	28-MAR-18
cis-1,3-Dichloropropene			<0.30		ug/L		0.3	28-MAR-18
Dibromochloromethane			<2.0		ug/L		2	28-MAR-18
Dichlorodifluoromethane			<2.0		ug/L		2	28-MAR-18
Ethylbenzene			<0.50		ug/L		0.5	28-MAR-18
n-Hexane			<0.50		ug/L		0.5	28-MAR-18
m+p-Xylenes			<0.40		ug/L		0.4	28-MAR-18
Methyl Ethyl Ketone			<20		ug/L		20	28-MAR-18
Methyl Isobutyl Ketone			<20		ug/L		20	28-MAR-18
Methylene Chloride			<5.0		ug/L		5	28-MAR-18

Quality Control Report

Client: G2S ENVIRONMENTAL CONSULTING, INC.
107-3370 SOUTH SERVICE ROAD
BURLINGTON ON L7N 3M6
Contact: DANA HASLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3996105								
WG2736506-2 MB								
MTBE			<2.0		ug/L		2	28-MAR-18
o-Xylene			<0.30		ug/L		0.3	28-MAR-18
Styrene			<0.50		ug/L		0.5	28-MAR-18
Tetrachloroethylene			<0.50		ug/L		0.5	28-MAR-18
Toluene			<0.50		ug/L		0.5	28-MAR-18
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	28-MAR-18
trans-1,3-Dichloropropene			<0.30		ug/L		0.3	28-MAR-18
Trichloroethylene			<0.50		ug/L		0.5	28-MAR-18
Trichlorofluoromethane			<5.0		ug/L		5	28-MAR-18
Vinyl chloride			<0.50		ug/L		0.5	28-MAR-18
Surrogate: 1,4-Difluorobenzene			97.9		%		70-130	28-MAR-18
Surrogate: 4-Bromofluorobenzene			91.7		%		70-130	28-MAR-18
WG2736506-5 MS		**L2072330-10**						
1,1,1,2-Tetrachloroethane			94.6		%		50-140	28-MAR-18
1,1,2,2-Tetrachloroethane			99.96		%		50-140	28-MAR-18
1,1,1-Trichloroethane			100.8		%		50-140	28-MAR-18
1,1,2-Trichloroethane			102.9		%		50-140	28-MAR-18
1,1-Dichloroethane			109.8		%		50-140	28-MAR-18
1,1-Dichloroethylene			97.4		%		50-140	28-MAR-18
1,2-Dibromoethane			101.5		%		50-140	28-MAR-18
1,2-Dichlorobenzene			102.4		%		50-140	28-MAR-18
1,2-Dichloroethane			110.5		%		50-140	28-MAR-18
1,2-Dichloropropane			109.4		%		50-140	28-MAR-18
1,3-Dichlorobenzene			100.7		%		50-140	28-MAR-18
1,4-Dichlorobenzene			102.8		%		50-140	28-MAR-18
Acetone			120.6		%		50-140	28-MAR-18
Benzene			108.2		%		50-140	28-MAR-18
Bromodichloromethane			102.5		%		50-140	28-MAR-18
Bromoform			90.1		%		50-140	28-MAR-18
Bromomethane			101.6		%		50-140	28-MAR-18
Carbon tetrachloride			97.7		%		50-140	28-MAR-18
Chlorobenzene			101.4		%		50-140	28-MAR-18
Chloroform			106.8		%		50-140	28-MAR-18
cis-1,2-Dichloroethylene			105.7		%		50-140	28-MAR-18

Quality Control Report

Client: G2S ENVIRONMENTAL CONSULTING, INC.
107-3370 SOUTH SERVICE ROAD
BURLINGTON ON L7N 3M6
Contact: DANA HASLETT

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-511-HS-WT	**Water**							
Batch R3996105								
WG2736506-5 MS		**L2072330-10**						
cis-1,3-Dichloropropene			104.4		%		50-140	28-MAR-18
Dibromochloromethane			99.0		%		50-140	28-MAR-18
Dichlorodifluoromethane			66.9		%		50-140	28-MAR-18
Ethylbenzene			94.8		%		50-140	28-MAR-18
n-Hexane			123.5		%		50-140	28-MAR-18
m+p-Xylenes			99.3		%		50-140	28-MAR-18
Methyl Ethyl Ketone			106.9		%		50-140	28-MAR-18
Methyl Isobutyl Ketone			99.8		%		50-140	28-MAR-18
Methylene Chloride			110.9		%		50-140	28-MAR-18
MTBE			100.7		%		50-140	28-MAR-18
o-Xylene			94.9		%		50-140	28-MAR-18
Styrene			91.0		%		50-140	28-MAR-18
Tetrachloroethylene			95.8		%		50-140	28-MAR-18
Toluene			99.2		%		50-140	28-MAR-18
trans-1,2-Dichloroethylene			108.6		%		50-140	28-MAR-18
trans-1,3-Dichloropropene			98.5		%		50-140	28-MAR-18
Trichloroethylene			102.1		%		50-140	28-MAR-18
Trichlorofluoromethane			103.0		%		50-140	28-MAR-18
Vinyl chloride			98.0		%		50-140	28-MAR-18

Quality Control Report

Workorder: L2072330 Report Date: 03-APR-18

Client: G2S ENVIRONMENTAL CONSULTING, INC.
107-3370 SOUTH SERVICE ROAD
BURLINGTON ON L7N 3M6
Contact: DANA HASLETT

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

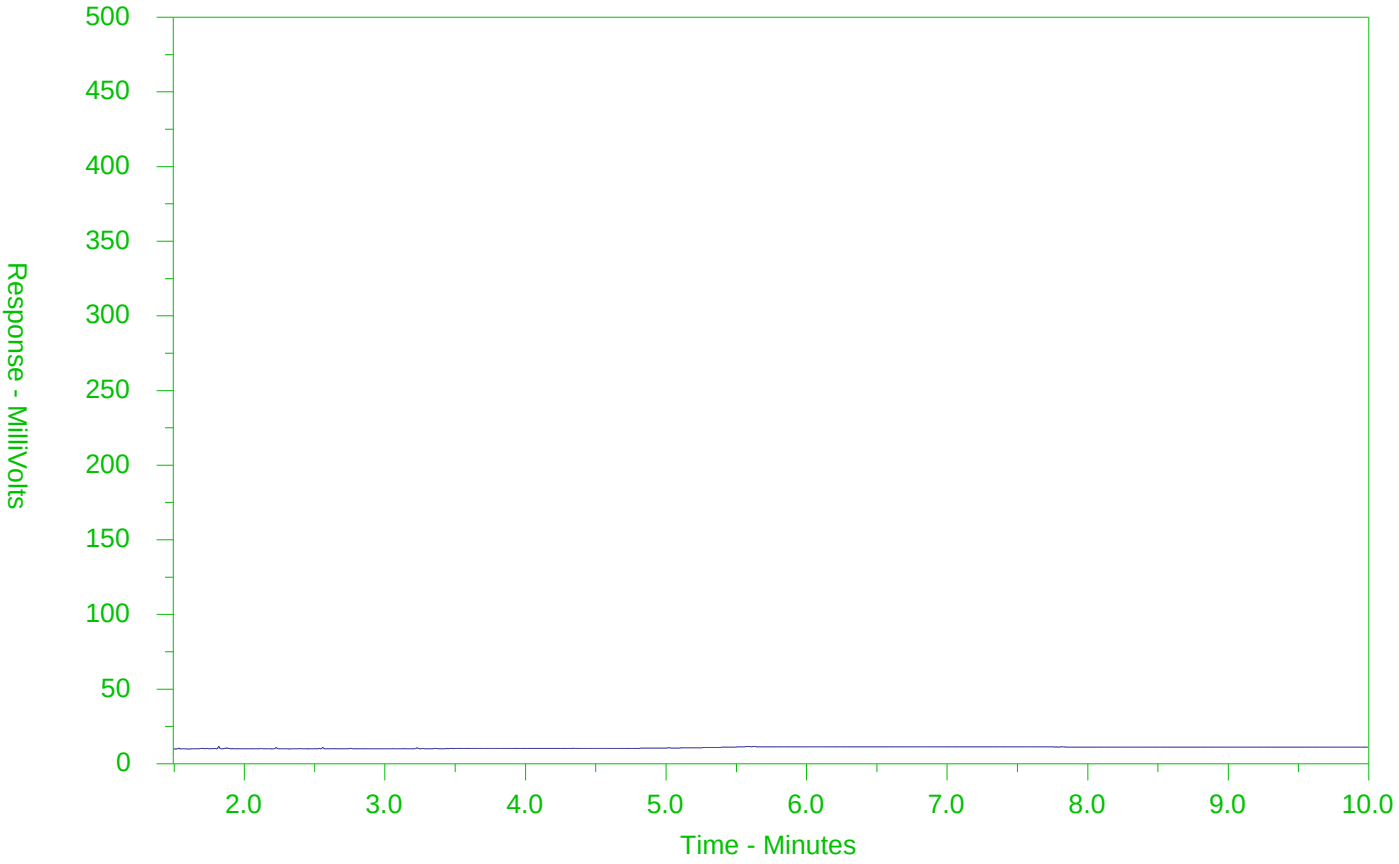
ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2072330-1
Client Sample ID: MW201



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →	← Motor Oils/Lube Oils/Grease →		
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

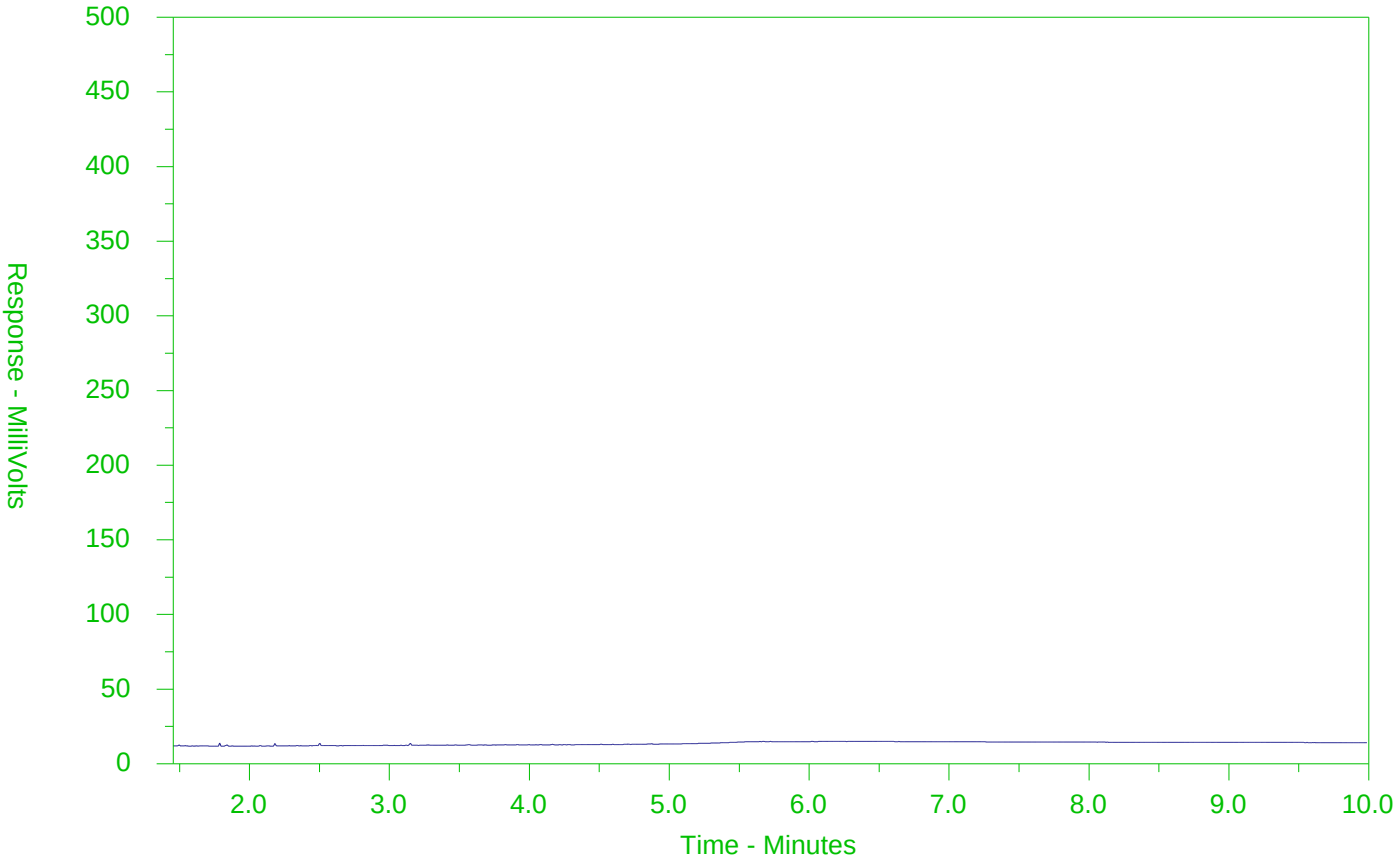
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2072330-2
Client Sample ID: MW202



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →	← Motor Oils/Lube Oils/Grease →		
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

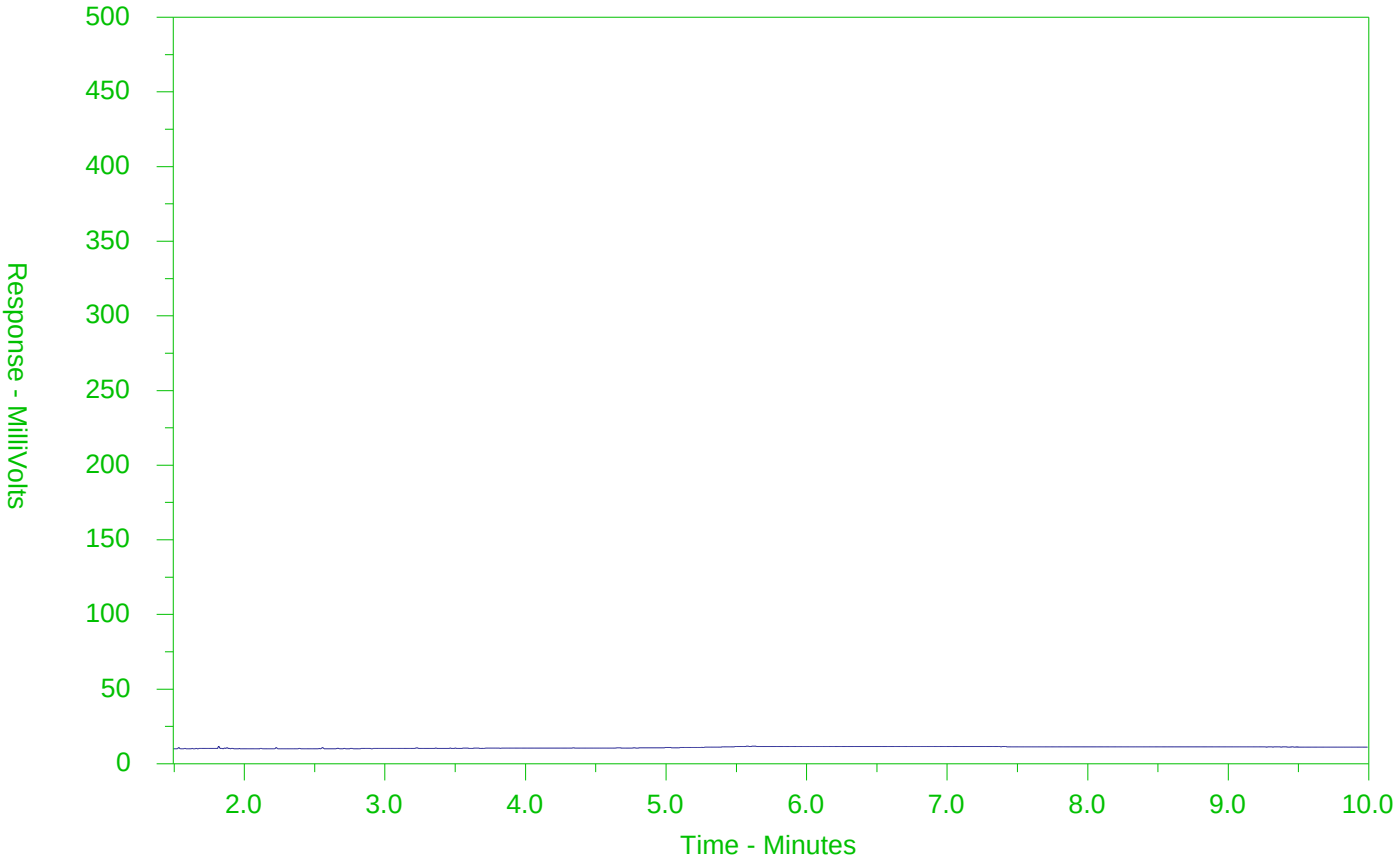
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2072330-3
Client Sample ID: MW203



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →	← Motor Oils/Lube Oils/Grease →		
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

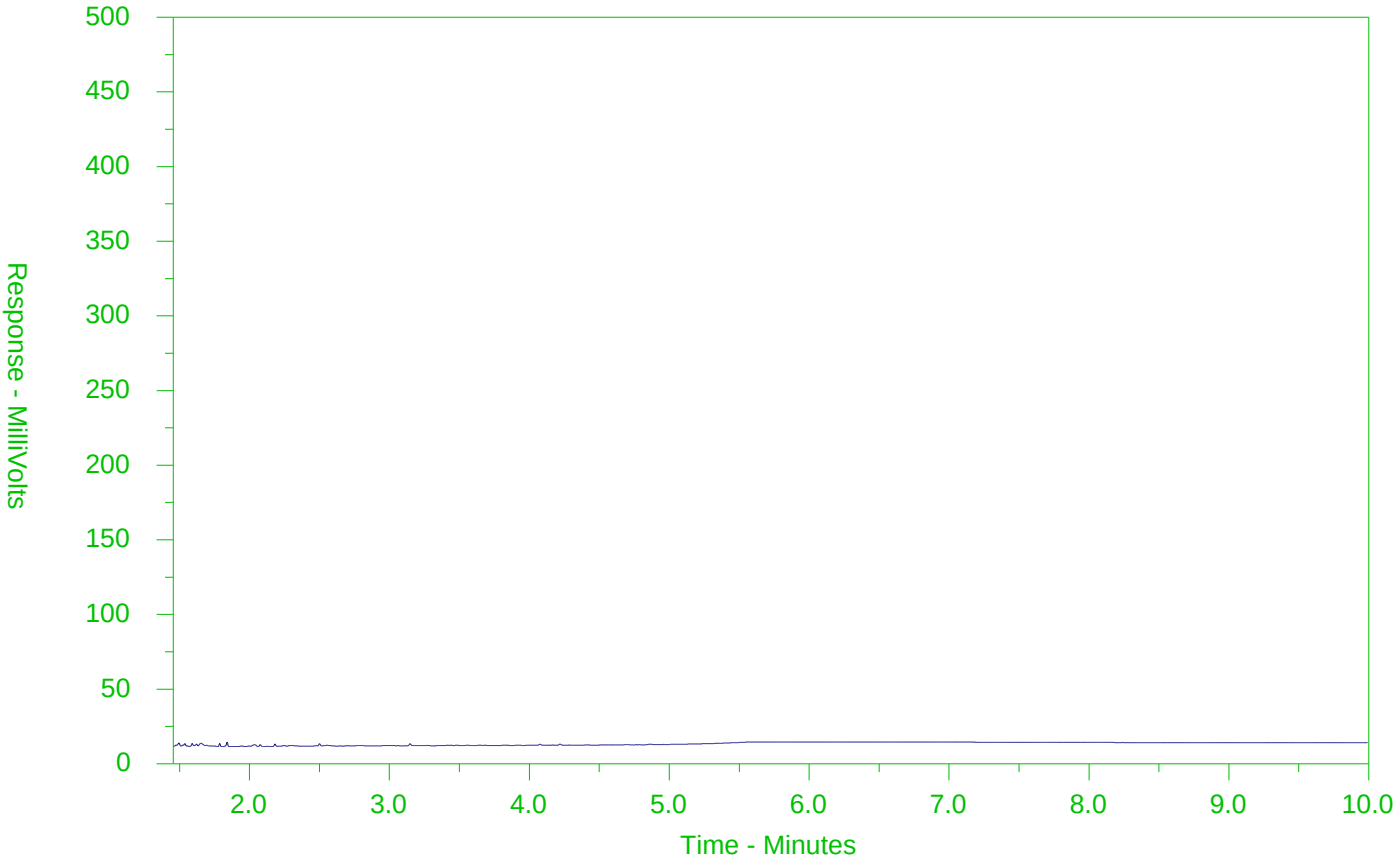
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2072330-4
Client Sample ID: MW204



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →	← Motor Oils/Lube Oils/Grease →		
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

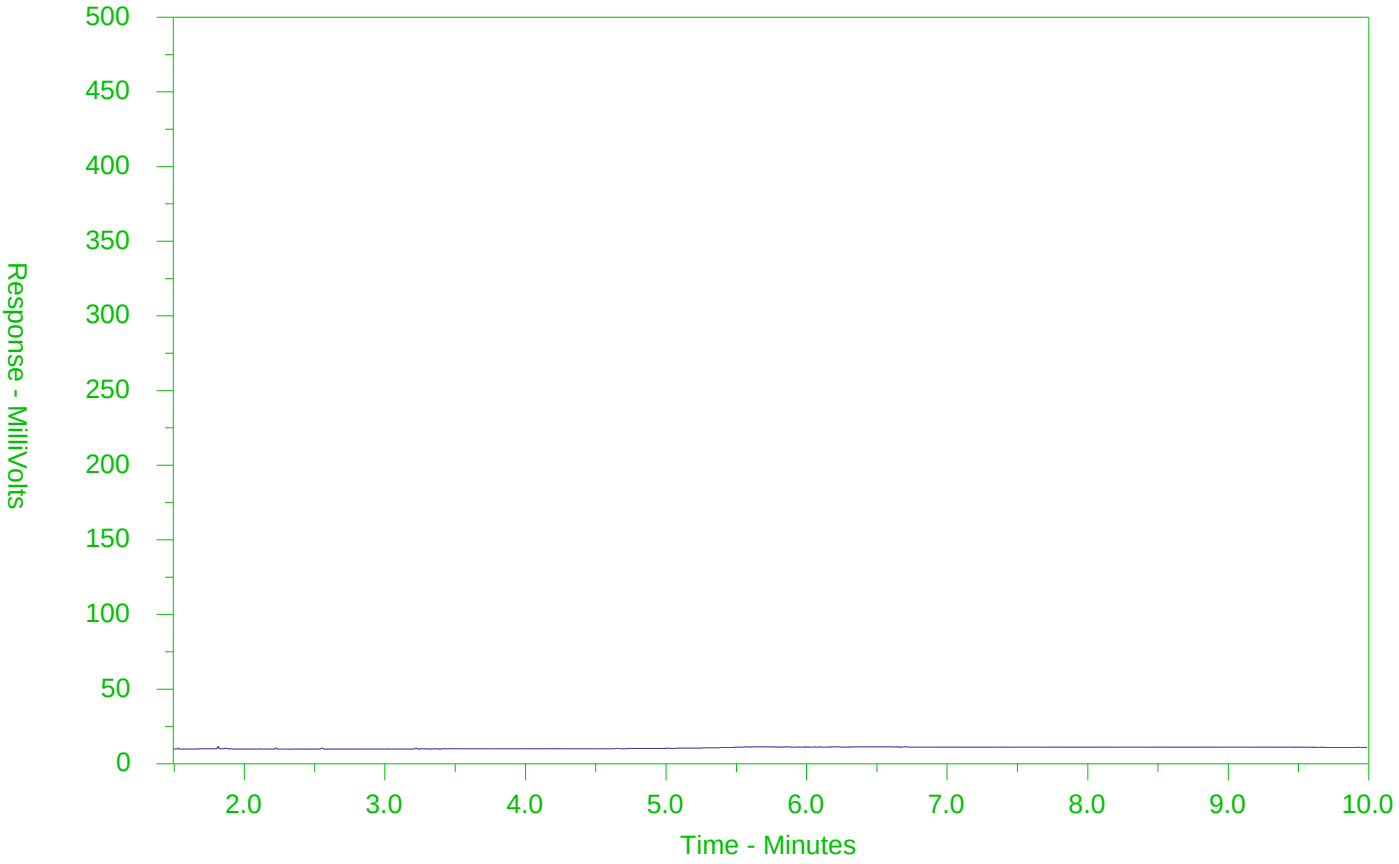
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2072330-5
Client Sample ID: MW205



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →	← Motor Oils/Lube Oils/Grease →		
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

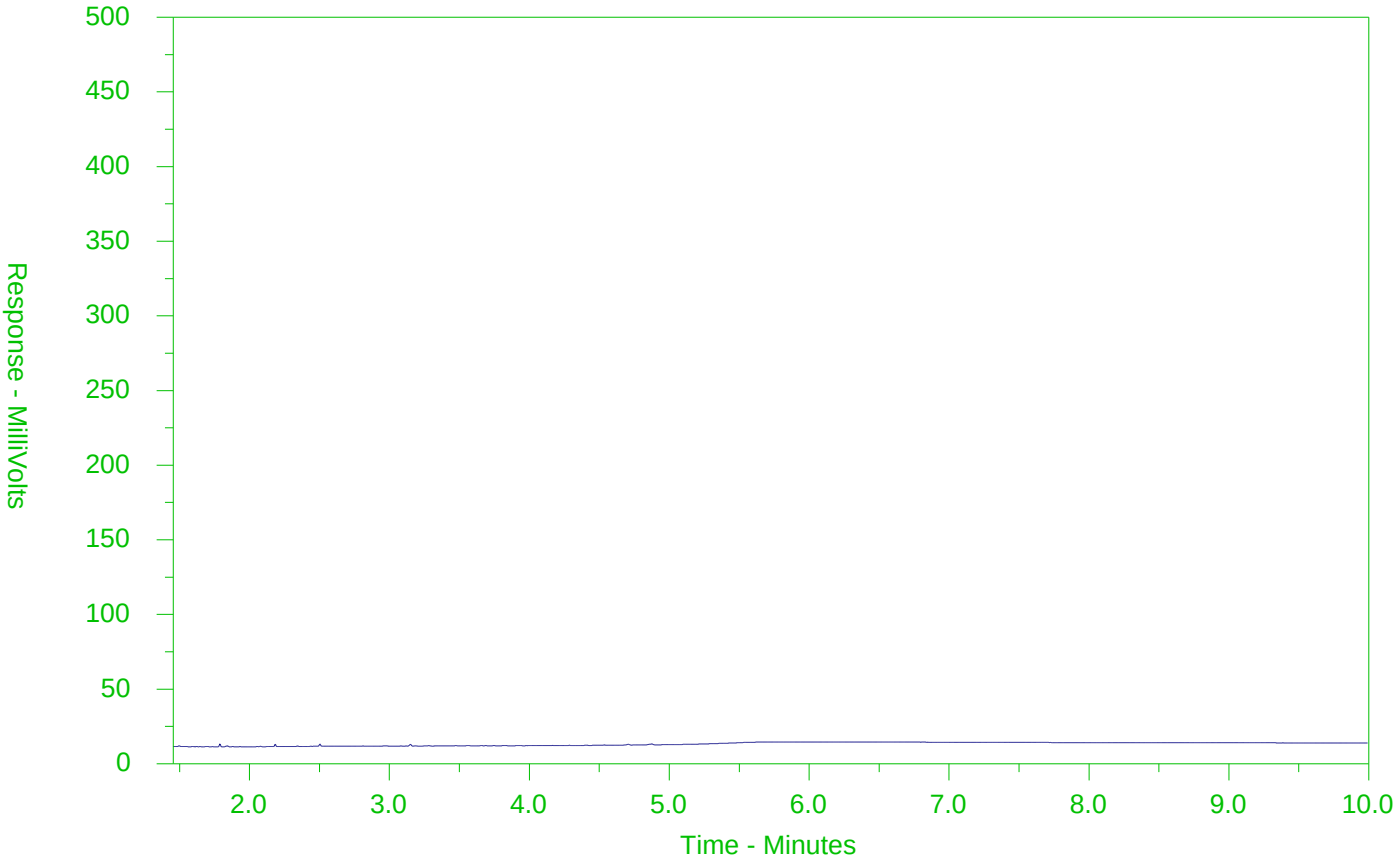
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2072330-6
Client Sample ID: MW206



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →	← Motor Oils/Lube Oils/Grease →		
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

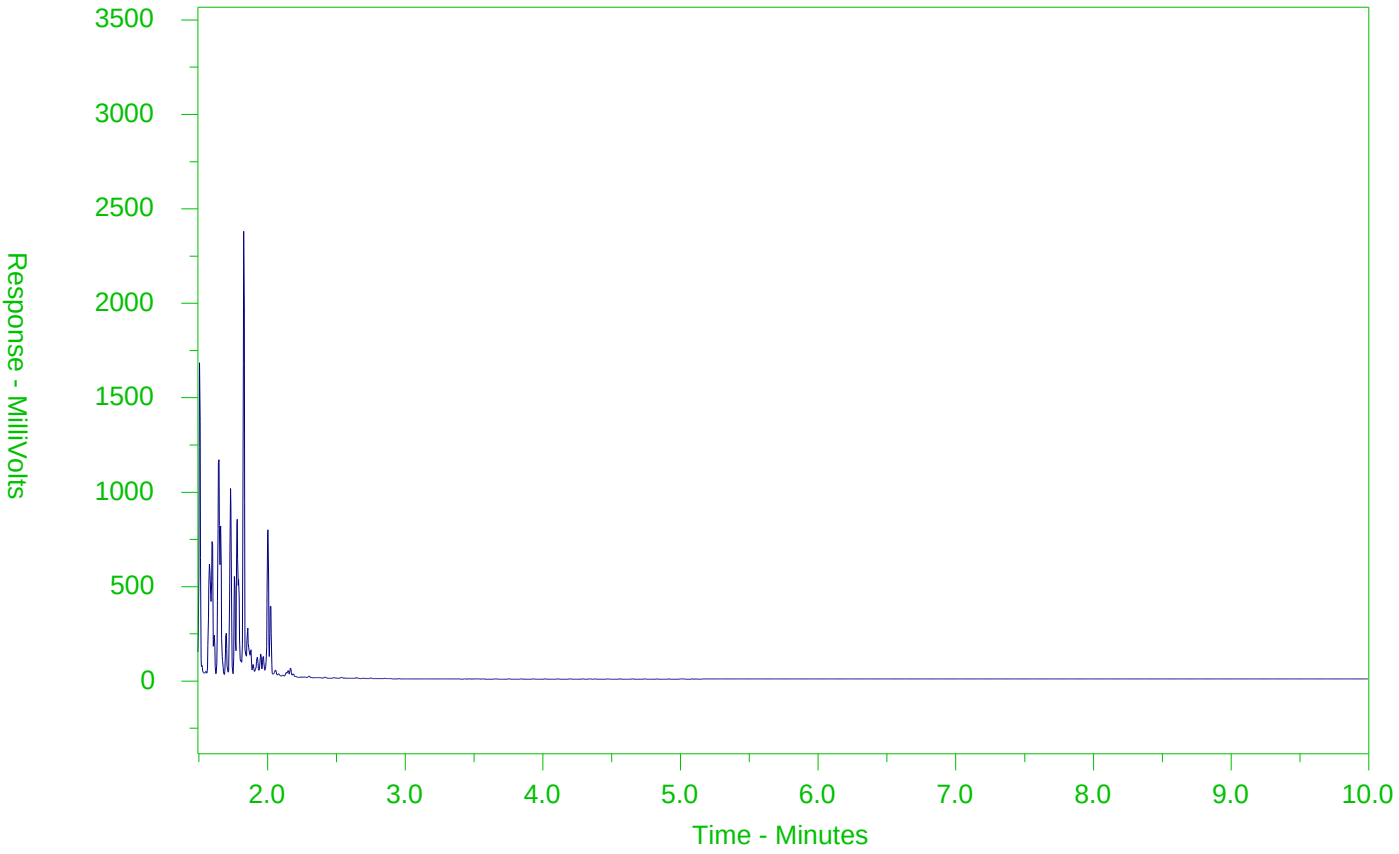
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2072330-7
Client Sample ID: MW207



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

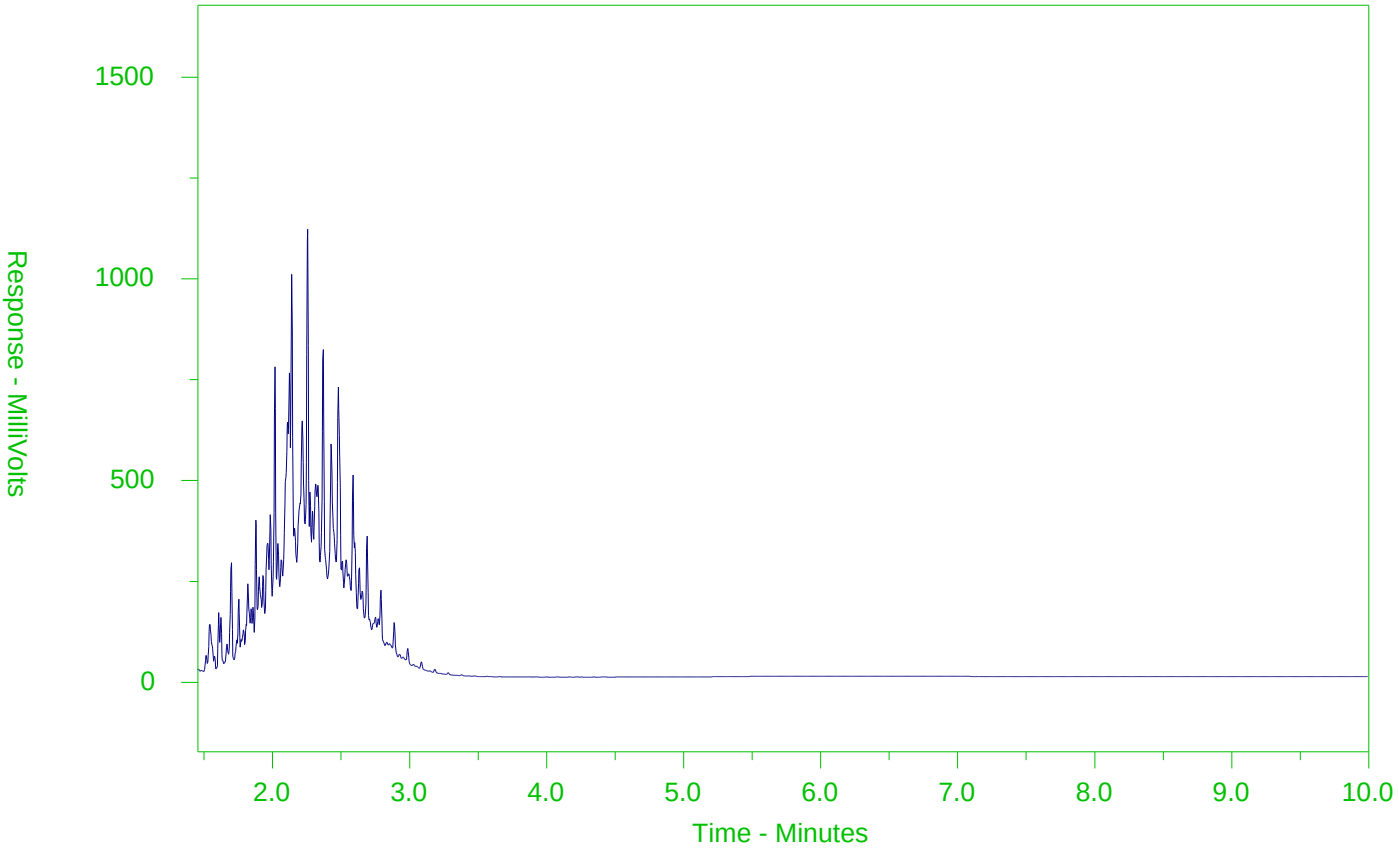
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2072330-8
Client Sample ID: MW102



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

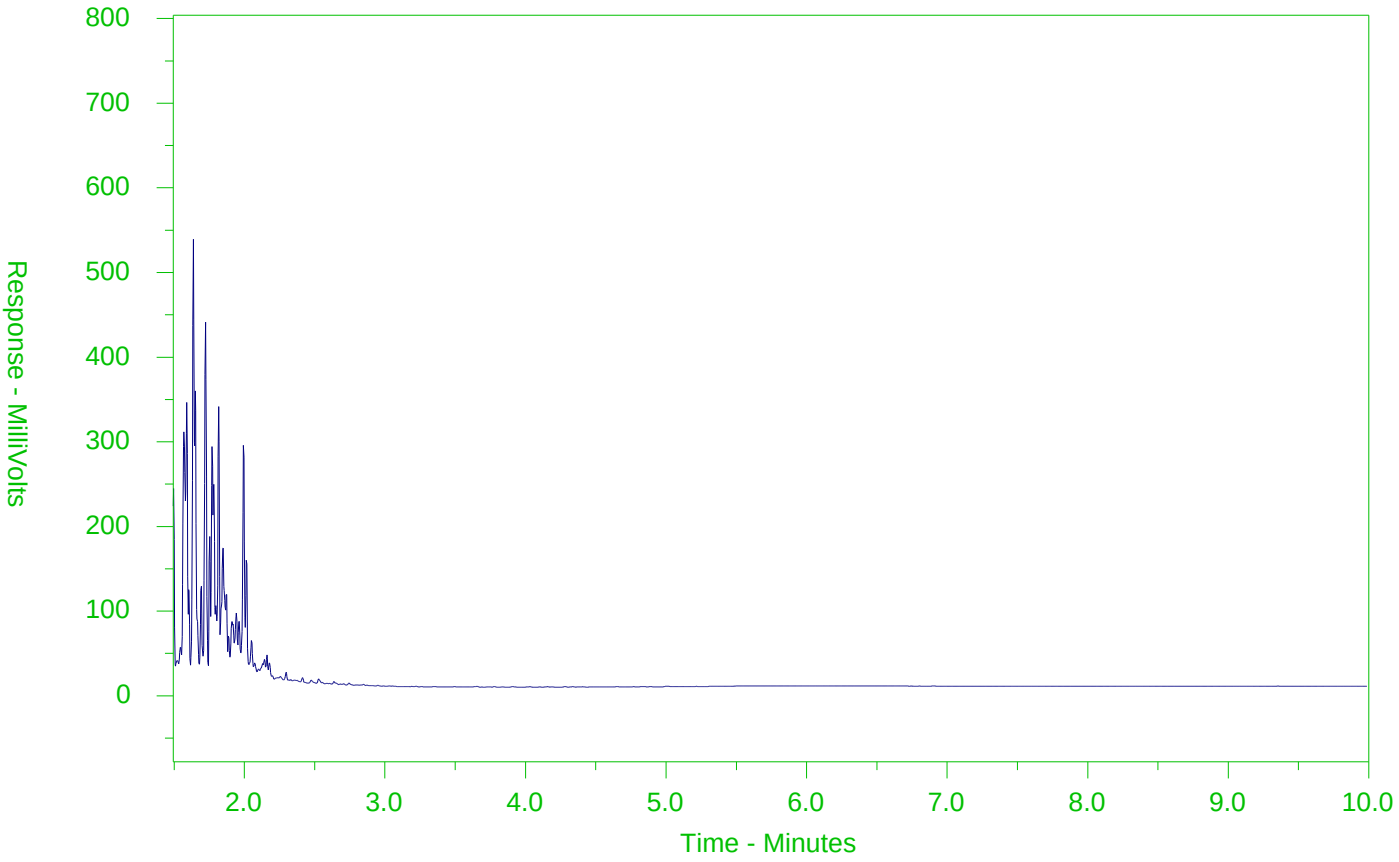
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2072330-9
Client Sample ID: MW103



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

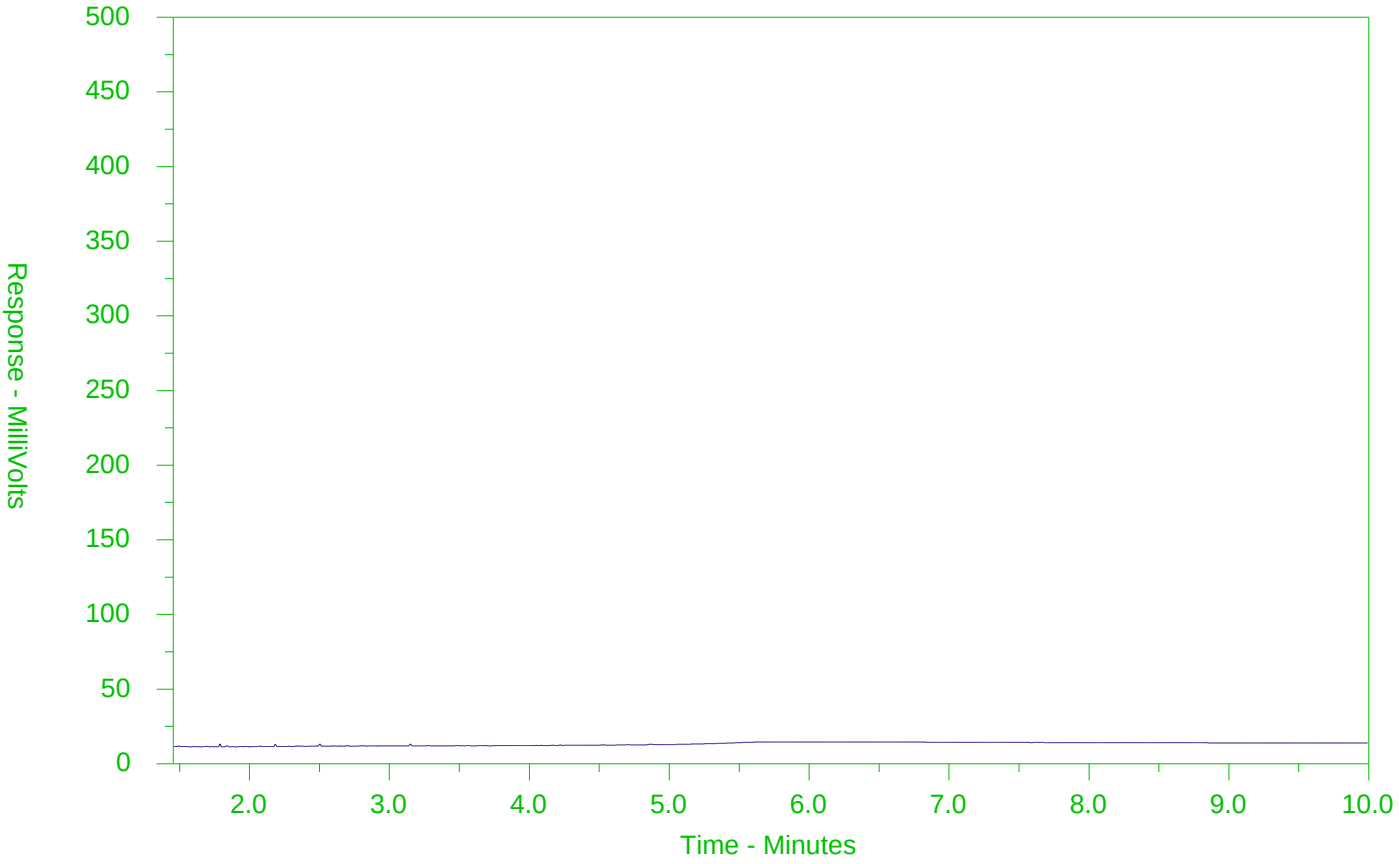
The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT

ALS Sample ID: L2072330-10
Client Sample ID: MW221



←F2→	←F3→	←F4→	
nC10	nC16	nC34	nC50
174°C	287°C	481°C	575°C
346°F	549°F	898°F	1067°F
Gasoline →		← Motor Oils/Lube Oils/Grease →	
← Diesel/Jet Fuels →			

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor and the scale at the left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR Library can be found at www.alsglobal.com.

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L2072330-COFC

COC Number: 15 - 557233

Page 1 of

Report To	Contact and company name below will appear on the final report
Company:	G2S Environmental Consulting
Contact:	Dana Haslett
Phone:	416-616-7011
Company address below will appear on the final report	
Street:	3370 S. Service Rd., Suite 107
City/Province:	Burlington, ON
Postal Code:	L7N 3M6
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)
Quality Control (QC) Report with Report ☐ YES ☐ NO
☐ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax: danah@g2senvironmental.
Email 2: ~~geoffbe~~ jackys@g2s... .com
Email 3: steveo@g2s...

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax:
Email 2:

Project Information

ALS Account # / Quote #: Std. Offer
Job #: G2516006
PO / AFE:
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#:
Major/Minor Code: Routing Code:
Requisitioner:
Location:

Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4] ☐ | 3 day [P3] ☐ | 2 day [P2] ☐
EMERGENCY: 1 Business day [E1] ☐ | Same Day, Weekend or Statutory holiday [E0] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm
For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Lab Work Order # (lab use only): L2072330 AP 26/3

ALS Contact: Mathy

Sampler: DH / DM

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	PHCs + BTEX	VOCs	PAHs	Number of Containers
	MW201	23-Mar-18	1 pm	GW	X	X	X	4
	MW202		12:30p		X		X	4
	MW203		12:45p		X		X	4
	MW204		12:00p		X		X	4
	MW205		1:10p		X		X	4
	MW206		1:30p		X		X	4
	MW207		1:35p		X		X	4
	MW102		1:20p		X		X	4
	MW103		1pm		X		X	4
	MW221		1pm		X	X	X	4
	Trip Spike					X		2
	Trip Blank					X		2

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO
Are samples for human drinking water use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Table 2, res., coarse grained.

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
8.4°C			3.7		

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Danielle Manuel	Date: 03/28/18	Time: 3:45	Received by: AARON BURTON	Date: 23-March-2018	Time: 15:45	Received by: AP	Date: 26-3-18	Time: 16:50

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

APPENDIX D

Standard Operating Procedures

Standard Operating Procedure
Ground Water Quality Field Measurements

This standard operating procedure (SOP) outlines the procedures to be followed when collecting ground water quality field measurements. For the purposes of this SOP, ground water quality field measurements refers to parameters including electrical conductivity (EC), pH, temperature, and oxidation potential (redox).

Preparation Works

- Prior to the travel to the field site ensure ground water quality field equipment is in good working order and has been calibrated according to the manufacturer's instructions. The pH meter must be calibrated using at least a two point calibration curve (i.e. two standard solutions).
- Record the results of the calibration process in the log book along with the calibration date and staff initials.
- Review the proposed Sampling and Analyses Plan for the designated site with the project manager to ensure understanding regarding the specific requirements of the field program.

Site Works

- Prior to any operations, inspect the ground water monitor for signs of tampering and/or structural faultiness and record results in field log. Photograph any obvious signs of tampering/failure.
- Don any required personal protection equipment (e.g. gloves).
- Collect a ground water level measurement according to the requirements of the Sampling and Analysis Plan (and the ground water sampling SOP). In the event that a non-aqueous liquid phase is present in the well, either on top of the ground water surface or at the well bottom, no ground water quality field measurements are to be collected.
- Purge the monitoring well(s) as required in the sampling and analysis plan (and according to the applicable SOP). Ground water quality measurements should be collected at each well as soon as practicable during or following the purging process.
- At each individual well flush the ground water quality field measurement collection container using an aliquot of the sampled ground water, and then dispose of the flushing water a suitable distance from the monitoring well location. This water can be used to acclimatize the quality field equipment prior to measurement, if appropriate.

- Refill the collection container with a new aliquot of freshly collected ground water and submerge the measurement probes to the depth required in the manufacturer's directions.
- Allow sufficient time for each individual field measurement devices to stabilize, noting the initial readings and the rate and direction of change in readings over time. When sampling more than one monitoring well try to ensure that each meter/probe is allowed to stabilize for the generally the same amount of time at each monitoring well in order to ensure uniformity between the readings.
- Record the final readings in the field notes. Where possible, compare the final readings to historical readings from the same wells.
- Prior to further use, clean field equipment after collecting the sample an appropriate distance away from monitoring well. At a minimum, the equipment should be thoroughly rinsed with distilled water. If significant contamination is suspected is may be necessary to clean the equipment more vigorously prior to further use.

The following points apply to specific measurement devices:

- pH meter/probe: ensure that the ground water pH readings fall between the points of the calibration curve. For instance, if a two-point calibration was conducted using pH solutions with values of 7 and 10, the ground water pH readings should lie between 7 and 10. Should the readings fall outside the calibration curve, recalibrate the unit using the appropriate calibration solutions.
- Temperature meter/probe: depending on the ambient temperature, the temperature readings will likely initially drift toward the solution temperature, then begin to change as the solution temperature starts to match the ambient temperature. For this reason, the early temperature readings likely reflect the ground water temperature.
- EC meter/probe: ensure that the correct value range (e.g., mS/cm, µS/cm) is being used to collect the EC readings, in order to ensure an appropriate number of significant digits in the reading.

Standard Operating Procedure
Ground Water Quality Sampling

This standard operating procedure (SOP) outlines the steps involved in ground water quality sampling. This SOP assumes that the monitoring well(s) have been appropriately developed.

Suitable well sampling devices include check valve fitted bailers (either disposable or dedicated), inertial sampling pumps (i.e. Waterra pumps), or downhole pumps. In each case the material in contact with the well annulus and water should be composed of a suitable non-absorbant material (i.e., Teflon, polyethylene). Clean (i.e. new and unused) equipment (e.g. rope, bailers, tubing, gloves) should be used for sampling any individual well.

Preparation Works

- Arrange for the delivery of all necessary sampling containers, quality control samples and field coolers from the analytical laboratory.
- Prior to the travel to the field site ensure ground water quality sampling equipment (and all other associated field equipment) is in good working order and any necessary calibrations have been performed has been properly calibrated.
- Review the proposed Sampling and Analyses Plan for the designated site with the project manager to ensure understanding regarding the specific requirements of the field program. Ensure that the proposed analytical sampling technique to be requested is appropriate for the required work program.

Site Works

- Prior to beginning sampling inspect the monitoring well for signs of tampering and/or structural defects and record results in field log. Photograph any obvious signs of tampering and or damage.
- Don any required personal protection equipment (i.e., gloves, etc.) prior to beginning the sampling process.
- Upon opening the monitoring well, measure the depth to ground water using an electronic water level tape. Where the presence of non-aqueous phase fluids are suspected or possible a multi-phase water level tape should be used to collect ground water levels. The water level tape (multi-phase or otherwise) should also be used to confirm the total depth of the monitoring well. The water level tape should be cleaned in between use at different wells.

- Calculate the volume of water within the well annulus based on the following formula:

  where

  V = wellbore volume (L);
  r_p = the monitoring pipe internal radius (m); and
  h = the height of water in the monitoring well (m)
  (i.e., water level minus the bottom hole depth).

- Using the sampling device remove (i.e. purge) three well volumes from the well annulus (if possible), or until dryness as dictated in the Sampling and Analyses Plan. Suitable sampling devices include inertial manual pumps (i.e. Waterra pumps), bailers, and electric pumps. In all cases, the sampling devices must be composed a material (e.g. Teflon, polycarbonate) which does not tend to absorb dissolved species, or otherwise react/interact with the water column.
- The purged ground water should be contained until it can be established that it poses no environmental hazard, at which point the water can be disposed of in manner prescribed in the "Sampling and Analysis Plan" (if applicable). In the event that discharge to the current property is acceptable, the water should be disposed of at least 10 m from the monitoring well in the down gradient direction of ground water flow.
- Record the final water level in the monitoring well once three well volumes have been removed.
- The well should be allowed to recover to approximately 80% of the pre-development water level prior to collecting ground water samples. In the event that there is a delay between the well purging and sampling events, the ground water level should be measured prior to sampling and the level recorded.
  - Prior to collecting the ground water samples at any given well location all required laboratory provided sample containers should be labeled according to the sampling and analysis plan. The sequence of bottles to be filled should be noted in the field records.
  - Remove the required ground water volumes using the dedicated sampling device, and if practicable fill the laboratory provided sampling containers directly from the sampling device. Do not allow the sampling equipment to touch the sample bottles. Follow any laboratory requirements regarding sampling container conditions or handling procedures. This may include:

- Zero headspace: for volatile compounds it is commonly required that the sample bottles be completely filled, with no headspace or air bubble between the sample and the lid. In these instances, fill the sample vial until the meniscus is above the top of the rim of the container. Gently screw on the sample container lid. Once the lid is secure, invert the vial and tap the side, checking to see if any bubbles are evident in the container. If air bubbles are noted, dispose the container and collect another sample.
- Preservatives: many analyses require preservatives, which are commonly added to the containers by the laboratory prior to shipping. When collecting samples in such containers do not overfill the containers, or rinse the containers prior to sampling. Discard any overfilled sample bottle and collect a replacement sample using a new bottle.
- Volatile compounds: when sampling volatile compounds, every precaution should be made to ensure that the sampled ground water is agitated as little as possible, and is exposed to the atmosphere for as short a time as possible. This may include (where possible) avoiding the use of peristaltic or pressure pumps, and collecting the samples using laminar flow devices (i.e. when using bailers).
- Exotic analyses: many less common analyses (e.g. hydrogen sulphide, hydrogen gas) have unusual containment or preservative requirements. All these requirements should be followed according the laboratory and/or regulatory guidelines.

- Immediately transfer filled sample bottles to a temporary storage container, which is kept at the laboratory required temperature.
- Clean field equipment a suitable distance from any monitoring well, prior to use at another location. At a minimum, the equipment should be thoroughly rinsed with distilled water to prevent cross contamination. Contaminated sites will likely require cleansing prior to the final distilled water rinse.

Standard Operating Procedure
Monitoring Well Installation

This standard operating procedure (SOP) outlines the steps involved in ground water monitoring well installation, when using either hollow-stem or solid stem augers in the soil borehole/well drilling process. This SOP is intended to conform with the Ontario Water Resource Act, Ontario Regulation 903 at a minimum.

Preparation Works

- In advance of the proposed drilling program; arrange for a suitable water well contractor/drilling crew. It may also be necessary to arrange for monitor construction and / or sampling supplies (i.e., monitor tubing, monitor screens, grout, filter pack materials, key-alike locks, bailers, in-line filters, etc.).
- Review the proposed Sampling and Analyses Plan for the designated site with the project manager to ensure understanding regarding the specific requirements of the field program. At a minimum, the regional geologic profile should be reviewed so there is a sound understanding of the strategic profile to be encountered at each designated drilling location.
- It may be necessary to arrange for the temporary storage of drilling liquids and cuttings.
- Ensue all required field equipment is available and in good working order (i.e., field notes, field logs, photographic equipment, PPE, etc.).

Hollow-stem Auger Drilling

- Advance the borehole to the depth intended for the monitoring well installation, conducting soil sampling and soil profile logging as required by the Sampling and Analysis Plan. The drilling program should record the field measurements and observations required to create the subsequent borehole logs.
- Upon reaching the desired depth, remove the drill bit/central plug, and measure the total depth of the borehole.
- Record the borehole depth, and calculate the intended depth to the top of the screened interval.
- Depending on the nature of the geology, the interior of the hollow-stem augers may be full or empty:
    - If the geologic profile consists of relatively competent material (e.g. heavy clay), such that the borehole is expected to remain open upon removal of the augers, the auger annulus can be left empty.

- If the geologic profile consists of loose material (e.g. wet silt, coarse sand), the auger annulus should be filled with clean potable water (if possible) prior to moving the auger flights.

- Prior to beginning the installation process the necessary well material (PVC well casing segments, sand, bentonite, etc.) should be calculated (based on the borehole depth and completion method) and placed close to the borehole location.
- The diameter of the monitoring well pipe MUST conform to the required separation (as indicated in O.Reg. 903) between the exterior of the well pipe and wellbore diameter.
- While wearing new, clean nitrile gloves assemble the PVC well casing and gradually lower it down the borehole. The well should be constructed using new, clean PVC (both screened and blank sections), which had been stored in individually wrapped plastic sleeves. The PVC sections must be threaded with rubber o-rings around the threaded ends, with no glue or chemical adhesives used to hold the sections together. The bottom of the well should be closed using a threaded end cap (male or female) rather than a slip cap that has been cut or drilled so that the monitoring well will drain completely.
- Once the entire well assembly is in the borehole, measure the stickup and confirm the borehole/well depth. After careful measurement, cut the PVC casing to the desired final height and record the length of any pipe section cut from the top of the monitoring well. Slot the pipe at the top in at least three places to facilitate removal of the top cap.
- Gradually pour silica well sand down the auger annulus, around the PVC casing. While pouring the sand, continually check the depth of the sand using a weighted drop tape to ensure it is rising. When the level of the sand rises to the bottom of the auger bit, stop pouring and raise the augers flights by approximately half of one flight. If the sand level stops rising during the pouring process, stop pouring and check the annulus for bridging.
- Confirm the depth to the sand, and continue alternating adding sand and lifting the auger flights. Continue adding sand until the top of the sand is about 0.3 m above the top of the screened interval.
- After completing the sand pack, either bentonite grout or granular bentonite (in the case of temporary monitoring wells) is to be used to fill the remaining annular space. In the case of bentonite grout, a tremmie pipe should be used to pump the grout into the annulus. The tremmie pipe should be placed no closer than 0.5 m to the top of the sand pack, and the pump set on the lowest setting to inject the grout. Continue injecting the grout, filling from the bottom of the open annulus, until the grout returns reach the surface. In the case of bentonite chips or pellets, while pouring the bentonite continually check the depth of the material using a weighted

drop tape to ensure it is rising. If the bentonite level stops rising during the pouring process, stop pouring and check the annulus for bridging.

- Once the final auger flight is removed, bentonite should be added to the depth indicated by the intended completion method.
  - For an above ground completion, the final level of the sealant should be immediately below the ground surface.
  - For a flush mount completion, the final level of the sealant level should be just below the bottom of the flush mount casing and should be sufficient to prevent entry of surface water and other foreign materials into the well.
- For the well completion:
  - Above ground completion: install the lockable, protective steel well casing while the sealant is still below the top of the borehole annulus. Once the borehole annulus is backfilled, pour bentonite into the steel casing until it is immediately below the opening of the casing. Using a hammer, strike the outside of the steel casing to compact the bentonite chips. Add sand on top of the bentonite, ensuring that the sand level is at least about 0.1 m below the top of the opening of the PVC casing.
  - Flush mount completion: place a thin layer of sand on top of the sealant in the well annulus, and insert the flush mount casing. Cement the outside of the flush mount casing in place, ensuring that the top of the casing is slightly below ground surface (i.e. countersunk).
  - The area around the flush mount casing should be slightly raised to deflect surface run off and help prevent the accumulation of water within the casing.
  - The well tag should be affixed permanently to the outside of the casing or to a permanent structure associated with the well, at a point where the well tag will be visible and will not be obstructed by the well cap, by other components of the well or by equipment associated with the well.

Standard Operating Procedure
Soil Field Screening

This standard operating procedure (SOP) outlines the procedures to be followed when conducting field screening as part of any soil sampling programs. This SOP does not address the collection of soil samples for laboratory analysis. This SOP only describes the methods for field screening for volatile (i.e. flammable) organic compounds. Methods for field screening for any other parameters (beyond visual or olfactory indicators) should be developed as part of the Sampling and Analysis Plan.

PREPARATION WORKS

- Review the proposed Sampling and Analyses Plan for the designated site with the project manager to ensure understanding regarding the specific requirements of the field program.
- Field screening for volatile organic compounds (VOCs) will involve use of some form of organic vapour analyzer (OVA). The OVA manual should be consulted prior to beginning the field program to ensure that the instrument is capable of detecting the contaminants of concern, and to determine the appropriate setup and calibration procedures, and to ensure familiarity with the appropriate field handling and measurement procedures.
- Prior to use, the OVA should be calibrated according to the manufacturer's directions, and according to the in-house calibration schedule. Any calibration data or results should be recorded in the official field notes.
- The decision of which areas to sample in the soil profile should be based on both the professional judgment of the field personnel, and the intentions of the Sampling and Analysis Plan. At a minimum, soil samples should be collected for field screening from the areas of "worst" impact.
- Soil samples intended for field screening purposes should be collected in medium to large re-sealable plastic bags, which have been labeled with the sample name, date, and project number. Air should be left in the bag as it is sealed (i.e. do not evacuate the bag as part of the sampling process). The volume of soil collected will depend on the amount available and the remaining sampling requirements, but should not be more than about one-third the volume of the bag.
- Once the soil sample is sealed in the bag, the soil should be broken up (particularly for dense or clay-rich soil) to encourage volatilization of any target compounds.

- The sealed sample bags should be left for a set period of time, which is consistent between samples and boreholes. The time period may vary depending on the requirements of the overall field program (time restraints, space limitations, etc.).
- Turn on the OVA and allow time, as specified by the manufacturer, for the equipment to reach full operational capacity. Perform any necessary pre-reading tests (e.g. zero the instrument).
- Open one corner of the seal on the plastic bag, leaving a hole only big enough to permit entry of the OVA sampling port.
- Insert the OVA sampling port/tube and position the tip in close proximity to the soil sample. Do not touch the soil with the tip of the tube, or allow moisture that may be inside the bag to enter the tube. Also ensure that the plastic bag does not seal off the tip of the sampling probe. During the analysis period the soil in the bag can be gently agitated to encourage volatilization.
- Observe the OVA readout, and track the readings. Once the values have stabilized, or begun to decline after a period of increasing values, record the highest noted value. Following removal of the OVA sampling tube, ensure that the readout returns to the zero value after a period of time.
- The soil sample can then be discarded, or kept for other purposes.

Standard Operating Procedure
Soil Sampling

This standard operating procedure (SOP) outlines the procedures to be followed when collected soil samples as part of a hollow-stem borehole drilling program, which uses a split spoon (SS) sampling device to collect soil cores, or soil test pitting program. This SOP does not address the collection of soil samples as part of other types of field programs (e.g., stockpile sampling, hand sampling). Site specific operating procedures should be developed in circumstances where this SOP is not applicable.

This document presumes that the drilling or testing pitting program is being conducted under the supervision of qualified personnel, and that all necessary procedures required as part of the drilling or digging program preparation (e.g. line locating, service clearances, access permission, safety measures) are being followed.

PREPARATION WORKS

- Prior to the travel to the field site necessary field equipment is in good working order and has been properly calibrated.
- Review the proposed Sampling and Analyses Plan for the designated site with the project manager to ensure understanding regarding the specific requirements of the field program.

BOREHOLE DRILLING

- During the drilling process, a clean SS sampling device should be used to collect all soil samples. Following the sample collection, the SS should be cleaned prior to re-use.
- The SS sampler must always be advanced ahead of the hollow-stem drill bit to ensure that an undisturbed soil sample is being collected.
- The SS sampling device should be placed on a clean sampling station upon removal from the borehole. When opening the SS, care should be taken to ensure that collected soil remains within the SS device. Soil falling out of the SS should not be considered for sampling purposes.
- An assessment of the soil profile should be taken from the split spoon core and recorded in the official field notes. A clean sampling device (e.g. knife, hand tool) can be used to expose the soil for profiling.
- Upon completing the soil profile logging, soil samples should be collected from the soil core using the same sampling device. The collected soil should be

transferred directly into the appropriate sample container. Care should be taken to ensure that non-soil material or objects (e.g. the sampling device, tools) do not come into contact with the interior of the sample containers.

- Soil samples should be collected in accordance with the requirements of the sampling and analysis plan. This includes collecting samples for field screening purposes and quality assurance/quality control, if necessary.\
- Upon collection, all samples intended for laboratory analysis should be properly sealed and stored at a temperature of about 4 °C. Samples must be submitted to the laboratory for analysis with the holding times specified by the individual laboratory.

APPENDIX E

Finalized Field Logs and Field Equipment Information

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Environmental Assessments & Approvals

TEST PIT LOG

Project Name/ Project Client	George Dangerfield	**Project Address**	41 & 43 Essa, Barrie, ON	**Date**	Monday May 14, 2018
Test Pit Number	TP-1	**Contractor**	--	**Elevation**	NA
Equipment	Deere 310SG	**Test Pit Size**	2.0 x 0.75 x 3.5 (L x W x D)	**Datum**	Ground Surface
Temperature	20°C	**Weather**	Sunny with Part Cloud	**Sample Type**	Soil

Depth		**Soil description**	**Samples**		**Headspace Combustible Vapour Concentration (ppm)**	**Remarks / Chemical Analysis**
From (m)	**To (m)**		**No.**	**Depth (mbgs)**		
0.0	0.60	Fine Sand and Gravel with Boulders & Debris (Brick & Concrete), Compact, Dry, Dark Brown	1	0.2 - 0.5	15	
0.60	1.2	Fine Sand with Boulders & Debris (Brick & Concrete), Compact, Moist, Honey Brown, Hydrocarbon Odour	2	0.8 - 1.2	10	
1.2	3.5	Fine Sand with Boulders, Compact, Moist, Grey/ White with Honey Brown Mottling, Hydrocarbon Odour	3	1.3 - 1.6	>50,000 100% LEL	
			4	2.0 - 2.3	3,400 / 30% LEL	
			5	2.4 - 2.7	6,050 / 55% LEL	
			6	2.8 - 3.1	10,750 / 96% LEL	
			8	3.1 - 3.3	4,200 / 38% LEL	
			7	3.2 - 3.5	1,800 / 16% LEL	
		Test pit terminated at 3.5 mbgs				

Comments	***Water Conditions in Test Pit***	
GPS: UTM 17 0604223 E 4914163 N ± 3 m	☑ Wet upon completion ☐ Dry upon completion	

JOB No.	18-175
TEST PIT No.	TP-1
FIELD STAFF	Ian Acheson

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Environmental Assessments & Approvals

TEST PIT LOG

Project Name/ Project Client	George Dangerfield	**Project Address**	41 & 43 Essa, Barrie, ON	**Date**	Monday May 14, 2018
Test Pit Number	TP-2	**Contractor**	--	**Elevation**	NA
Equipment	Deere 310SG	**Test Pit Size**	2.0 x 0.75 x 3.5 (L x W x D)	**Datum**	Ground Surface
Temperature	20°C	**Weather**	Sunny with Part Cloud	**Sample Type**	Soil

Depth		**Soil description**	**Samples**		**Headspace Combustible Vapour Concentration (ppm)**	**Remarks / Chemical Analysis**
From (m)	**To (m)**		**No.**	**Depth (mbgs)**		
0.0	0.30	Fine Sand and Gravel, Compact, Dry, Dark Brown and Black	1	0.1 - 0.3	15	
0.30	0.60	Fine Sand, Compact, Dry, Light Tan	2	0.3 - 0.6	20	
0.60	0.70	Fine Sand, Compact, Moist, Dark Brown and Black	3	0.6 - 0.7	15	
0.7	1.4	Fine Sand, Compact, Moist, Honey Brown	4	0.9 - 1.2		
1.4	2.8	Fine Sand, Compact, Moist, Light Brown and Tan	5	1.5 - 1.9		
			6	2.3 - 2.6		
2.8	3.5	Fine Sand, Compact, Wet, Light Brown and Tan	7	3.1 - 3.5		
		Test pit terminated at 3.5 mbgs				

Comments	***Water Conditions in Test Pit***	
GPS: UTM 17 0604215 E 4914158 N ± 3 m	☑ Wet upon completion ☐ Dry upon completion	

JOB No. 18-175

TEST PIT No. TP-2

FIELD STAFF Ian Acheson

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Environmental Assessments & Approvals

TEST PIT LOG

Project Name/ Project Client	George Dangerfield	**Project Address**	41 & 43 Essa, Barrie, ON	**Date**	Monday May 14, 2018
Test Pit Number	TP-3	**Contractor**	--	**Elevation**	NA
Equipment	Deere 310SG	**Test Pit Size**	2.0 x 0.75 x 3.5 (L x W x D)	**Datum**	Ground Surface
Temperature	20°C	**Weather**	Sunny with Part Cloud	**Sample Type**	Soil

Depth		**Soil description**	**Samples**		**Headspace Combustible Vapour Concentration (ppm)**	**Remarks / Chemical Analysis**
From (m)	**To (m)**		**No.**	**Depth (mbgs)**		
0.0	0.20	Fine Sand and Gravel with Debris (Brick and Concrete), Compact, Dry, Light Grey and White				
0.20	0.80	Fine Sand, Comact, Dry, Dark Brown and Black	1	0.4 - 0.7	15	
0.80	1.2	Fine Sand, Comact, Moist, Honey Brown	2	0.8 - 1.1	15	
1.2	2.7	Fine Sand, Compact, Moist, Tan with Honey Brown Mottling	3	1.6 - 2.0	10	
			4	2.2 - 2.5	460 4% LEL	
2.7	3.5	Fine and Coarse Sand, Compact, Moist, Light Brown with Black Banding	5	3.2 - 3.5	25	
		Test pit terminated at 3.5 mbgs				

Comments	***Water Conditions in Test Pit***	
GPS: UTM 17 0604217 E 4914165 N ± 3 m	☑ Wet upon completion ☐ Dry upon completion	

JOB No. 18-175

TEST PIT No. TP-3

FIELD STAFF Ian Acheson

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Environmental Assessments & Approvals

TEST PIT LOG

Project Name/ Project Client	George Dangerfield	**Project Address**	41 & 43 Essa, Barrie, ON	**Date**	Monday May 14, 2018
Test Pit Number	TP-4	**Contractor**	--	**Elevation**	NA
Equipment	Deere 310SG	**Test Pit Size**	2.0 x 0.75 x 3.6 (L x W x D)	**Datum**	Ground Surface
Temperature	20°C	**Weather**	Sunny with Part Cloud	**Sample Type**	Soil

Depth		**Soil description**	**Samples**		**Headspace Combustible Vapour Concentration (ppm)**	**Remarks / Chemical Analysis**
From (m)	**To (m)**		**No.**	**Depth (mbgs)**		
0.0	0.20	Fine Sand and Gravel, Compact, Dry, Light Grey and White				
0.20	0.40	Fine Sand and Gravel with Debris (Brick & Concrete), Compact, Dry, Dark Brown and Black				
0.40	0.60	Fine Sand, Compact, Dry, Red/ Orange	1	0.4 - 0.6	20	
0.60	3.6	Fine Sand, Compact, Moist, Light Grey and Tan	2	0.8 - 1.1	10	
		Hydrocarbon Odours begin at 1.6 mbgs	3	1.7 - 2.0	5,350 / 48% LEL	
		Becomes wet at 2.0 mbgs	4	2.5 - 2.7	3,200 / 29% LEL	
		Black Bands begin at 2.9 mbgs	5	3.0 - 3.2	6,050 / 55% LEL	
			6	3.4 - 3.6	6,250 / 57% LEL	
		Test pit terminated at 3.6 mbgs				

Comments	***Water Conditions in Test Pit***	
GPS: UTM 17 0604225 E 4914168 N ± 3 m	☑ Wet upon completion ☐ Dry upon completion	

JOB No.	18-175
TEST PIT No.	TP-4
FIELD STAFF	Ian Acheson

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Environmental Assessments & Approvals

TEST PIT LOG

Project Name/ Project Client	George Dangerfield	**Project Address**	41 & 43 Essa, Barrie, ON	**Date**	Monday May 14, 2018
Test Pit Number	TP-5	**Contractor**	--	**Elevation**	NA
Equipment	Deere 310SG	**Test Pit Size**	2.0 x 0.75 x 3.0 (L x W x D)	**Datum**	Ground Surface
Temperature	20°C	**Weather**	Sunny with Part Cloud	**Sample Type**	Soil

Depth		**Soil description**	**Samples**		**Headspace Combustible Vapour Concentration (ppm)**	**Remarks / Chemical Analysis**
From (m)	**To (m)**		**No.**	**Depth (mbgs)**		
0.0	0.50	Topsoil with Fine Sand and Gravel, Compact, Dry, Brown				
0.50	0.60	Asphalt (buried)				
0.60	0.80	Fine Sand, Compact, Moist, Dark Brown and Black	2	0.6 - 0.8	20	
0.80	2.0	Fine Sand, Compact, Moist, Tan with Orange Mottling	1	1.0 - 1.3	20	
			3	1.3 - 1.6	10	
2.0	3.0	Fine Sand, Compact, Wet, Tan with Black Bands	4	2.0 - 2.3	20	
			5	2.8 - 3.0	20	
		Test pit terminated at 3.0 mbgs				

Comments	***Water Conditions in Test Pit***	
GPS: UTM 17 0604226 E 4914198 N ± 3 m	☑ Wet upon completion ☐ Dry upon completion	

JOB No.	18-175
TEST PIT No.	TP-5
FIELD STAFF	Ian Acheson

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Environmental Assessments & Approvals

TEST PIT LOG

Project Name/ Project Client	George Dangerfield	**Project Address**	41 & 43 Essa, Barrie, ON	**Date**	Monday May 14, 2018
Test Pit Number	TP-6	**Contractor**	--	**Elevation**	NA
Equipment	Deere 310SG	**Test Pit Size**	2.0 x 0.75 x 3.0 (L x W x D)	**Datum**	Ground Surface
Temperature	20°C	**Weather**	Sunny with Part Cloud	**Sample Type**	Soil

Depth		**Soil description**	**Samples**		**Headspace Combustible Vapour Concentration (ppm)**	**Remarks / Chemical Analysis**
From (m)	**To (m)**		**No.**	**Depth (mbgs)**		
0.0	0.30	Fine Sand and Gravel, Compact, Dry, Light Grey				
0.30	1.2	Fine Sand, Compact, Dry, Black	1	0.6 - 0.9	10	
1.2	1.8	Fine Sand, Compact, Moist, Tan with Orange Mottling	2	1.3 - 1.5	30	
1.8	3.0	Fine Sand with Trace Silt, Compact, Moist, Grey/ Blue Grey & Black, Hydrocarbon Odour	3	1.8 - 2.0	550 4% LEL	
			4	2.8 - 3.0	35	
		Test pit terminated at 3.0 mbgs				

Comments	***Water Conditions in Test Pit***	
GPS: UTM 17 0604223 E 4914163 N ± 3 m	☑ Wet upon completion ☐ Dry upon completion	

JOB No.	18-175
TEST PIT No.	TP-6
FIELD STAFF	Ian Acheson

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Environmental Assessments & Approvals

TEST PIT LOG

Project Name/ Project Client	George Dangerfield	**Project Address**	41 & 43 Essa, Barrie, ON	**Date**	Monday May 14, 2018
Test Pit Number	TP-7	**Contractor**	--	**Elevation**	NA
Equipment	Deere 310SG	**Test Pit Size**	2.0 x 0.75 x 3.3 (L x W x D)	**Datum**	Ground Surface
Temperature	20°C	**Weather**	Sunny with Part Cloud	**Sample Type**	Soil

Depth		**Soil description**	**Samples**		**Headspace Combustible Vapour Concentration (ppm)**	**Remarks / Chemical Analysis**
From (m)	**To (m)**		**No.**	**Depth (mbgs)**		
0.0	0.20	Fine Sand and Gravel, Compact, Dry, Light Grey				
0.20	0.50	Fine Sand, Compact, Dry, Dark Brown and Black	1	0.2 - 0.5	45	
0.50	0.90	Fine Sand, Compact, Moist, Brown with Orange Mottling	2	0.6 - 0.9	20	
0.90	2.2	Fine Sand, Compact, Moist, Tan with Orange Mottling	3	1.5 - 1.8	15	
2.2	3.3	Fine Sand, Compact, Moist, Tan with Black Bands	4	2.9 - 3.2	15	
		Test pit terminated at 3.3 mbgs				

Comments	***Water Conditions in Test Pit***	
GPS: UTM 17 0604228 E 4914191 N ± 3 m	☑ Wet upon completion ☐ Dry upon completion	

JOB No. 18-175

TEST PIT No. TP-7

FIELD STAFF Ian Acheson

AZIMUTH ENVIRONMENTAL CONSULTING, INC.
Environmental Assessments & Approvals

Project: 41 & 43 Essa Rd	**Project Number:** 18-175	**Client:** Barrie Drive-A-Car (1979) Ltd.	**Borehole ID:** BH303
Project Location: 41 & 43 Essa Road, Barrie, ON		**Drilling Contractor:** Orbit Garant	**Drilling Method:** Hollow Stems with Split Spoons
Logged By: I. Acheson	**Date:** 26-Oct-2018	**Flushmount (mbgs):** NA	**Well Depth (mbgs):** NA
UTM: (NAD 83, Zone 17T)	**Ground Elevation (masl):**	**Water Level (mbgs):** NA	**Well Diameter (mm)** NA
Easting: 604204	**Well Screen Type:** NA	**Riser Pipe Type:** NA	**Well Screen Length (m):** NA
Northing: 4914197			

Depth Below Ground Surface (mbgs)	Sample Type	Sample Number	Headspace (ppm)	Lithology	Monitoring Well Construction	Lithology Description
						Soil Group Name: grain size,color, density/consistency, moisture, stratification, other descriptors **Rock Description:** modifier, color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.
						Asphalt at surface (0.2 m thick)
	SS	1	0			Sand & Gravel, compact, dry, brown (0.0 - 0.2 m)
	SS	2	0			Medium/ Fine Sand with trace Silt, compact, dry, dark brown transitioning to brown (0.2 - 1.3 m)
2	SS	3	0			
	SS	4	1,000			Medium/ Fine Sand with trace Silt, compact, moist, brown with several oxidized layers (1.3 - 2.5 m)
	SS	5&6	6,350/ 770			Medium/ Fine Sand with trace Silt, compact, wet, brown, hydrocarbon odour, hydrocarbon staining beginning at 3.2m (2.5 - 5.3 m)
4	SS	7	1,950			Vary dark hydrocarbon staining seam at 3.35 - 3.4 m
	SS	8	1,000			Hydrocarbon staining ending at 4.4 m
						Burnt odour at 4.5 m
6						
8						
10						
12						

Ground Water Level Upon Well Completion (mbgs)

Seal (grout / hole plug) **Silica Sand Pack** **Well Screen**

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Environmental Assessments & Approvals

Project: 41 & 43 Essa Rd	**Project Number:** 18-175	**Client:** Barrie Drive-A-Car (1979) Ltd.	**Borehole ID:** BH304/ MW304
Project Location: 41 & 43 Essa Road, Barrie, ON		**Drilling Contractor:** Orbit Garant	**Drilling Method:** Hollow Stems with Split Spoons
Logged By: I. Acheson	**Date:** 26-Oct-2018	**Flushmount (mbgs):** 0.13	**Well Depth (mbgs):** 4.4
UTM: (NAD 83, Zone 17T) **Easting:** 604248 **Northing:** 4914197	**Ground Elevation (masl):** **Well Screen Type:** 10-Slot PVC, schedule 40	**Water Level (mbgs):** 3.00 **Riser Pipe Type:** Schedule 40 PVC	**Well Diameter (mm)** 50.8 **Well Screen Length (m):** 3.0

Depth Below Ground Surface (mbgs)	Sample Type	Sample Number	Headspace (ppm)	Lithology	Monitoring Well Construction	Lithology Description
						Soil Group Name: grain size,color, density/consistency, moisture, stratification, other descriptors **Rock Description:** modifier, color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.
						Asphalt at surface (0.2 m thick)
	SS	1	0			Sand & Gravel, compact, dry, brown (0.0 - 0.2 m)
	SS	2	10			Medium/ Fine Sand with trace Silt, compact, dry, dark brown transitioning to brown (0.2 - 1.4 m)
2	SS	3	10			Medium/ Fine Sand with trace Silt, compact, moist, brown (1.4 - 2.5 m)
	SS	4	0			
	SS	5	0			Medium/ Fine Sand with trace Silt, compact, wet, brown (2.5 - 3.7 m)
4						Orange oxdizing layers beginning at 3.5 mbgs
6						
8						
10						
12						

Ground Water Level Upon Well Completion (mbgs)

Seal (grout / hole plug) **Silica Sand Pack** **Well Screen**

AZIMUTH ENVIRONMENTAL CONSULTING, INC.
Environmental Assessments & Approvals

Project: 41 & 43 Essa Rd	**Project Number:** 18-175	**Client:** Barrie Drive-A-Car (1979) Ltd.	**Borehole ID:** BH305/ MW305
Project Location: 41 & 43 Essa Road, Barrie, ON		**Drilling Contractor:** Orbit Garant	**Drilling Method:** Hollow Stems with Split Spoons
Logged By: I. Acheson	**Date:** 24-Oct-2018	**Flushmount (mbgs):** 0.22	**Well Depth (mbgs):** 11.2
UTM: (NAD 83, Zone 17T) **Easting:** 604240 **Northing:** 4914197	**Ground Elevation (masl):** **Well Screen Type:** 10-Slot PVC, schedule 40	**Water Level (mbgs):** 2.63 **Riser Pipe Type:** Schedule 40 PVC	**Well Diameter (mm)** 50.8 **Well Screen Length (m):** 1.5

Depth Below Ground Surface (mbgs)	Sample Type	Sample Number	Headspace (ppm)	Lithology	Monitoring Well Construction	Lithology Description
						Soil Group Name: grain size,color, density/consistency, moisture, stratification, other descriptors **Rock Description:** modifier, color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.
	SS	1	0			Sand & Gravel, compact, dry, brown (0.0 - 0.4 m)
	SS	2	0			Medium/ Fine Sand with trace Silt, compact, dry, brown and Light brown (0.4 - 2.8 m)
	SS	3	5			Medium/ Fine Sand with trace Silt, compact, moist, brown (1.4 - 2.5 m)
2						Medium/ Fine Sand with trace Silt, compact, wet, brown (2.5 - 3.7 m)
	SS	4	0			
	SS	5	15			Orange oxdizing layers beginning at 3.5 m
4						
	SS	6	10			
6						Straight drill to 10.7 mbgs
8						
10						
	SS	7	0			Fine Sand, very loose, wet, grey (10.7 - 10.9 m)
	SS	8	15			Silt, firm, moist, grey (10.9 - 11.2 m)
	SS	9	5			Clay with some silt, firm, moist, grey (11.2 - 11.4 m)
12	SS	10	5			Silt with fine sand, wet, grey (11.55 - 12.15 m)

Ground Water Level Upon Well Completion (mbgs)

Seal (grout / hole plug) **Silica Sand Pack** **Well Screen**

AZIMUTH ENVIRONMENTAL CONSULTING, INC.
Environmental Assessments & Approvals

Project: 41 & 43 Essa Rd	**Project Number:** 18-175	**Client:** Barrie Drive-A-Car (1979) Ltd.	**Borehole ID:** BH308/ MW308
Project Location: 41 & 43 Essa Road, Barrie, ON		**Drilling Contractor:** Orbit Garant	**Drilling Method:** Hollow Stems with Split Spoons
Logged By: I. Acheson	**Date:** 24-Oct-2018	**Flushmount (mbgs):** 0.11	**Well Depth (mbgs):** 4.5
UTM: (NAD 83, Zone 17T) **Easting:** 604240 **Northing:** 4914197	**Ground Elevation (masl):** **Well Screen Type:** 10-Slot PVC, schedule 40	**Water Level (mbgs):** 3.23 **Riser Pipe Type:** Schedule 40 PVC	**Well Diameter (mm)** 50.8 **Well Screen Length (m):** 3.0

Depth Below Ground Surface (mbgs)	Sample Type	Sample Number	Headspace (ppm)	Lithology	Monitoring Well Construction	Lithology Description
	SS	1	0			Asphalt at surface (0.1 m thick)
						Sand & Gravel, compact, dry, brown (0.0 - 0.2 m)
	SS	2	10			Medium/ Fine Sand with trace Silt, compact, dry, dark brown transitioning to brown (0.2 - 1.0 m)
2	SS	3	5			
						Medium/ Fine Sand with trace Silt, compact, dry, dark brown transitioning to brown (1.0 - 1.7 m)
	SS	4	0			
	SS	5	0			Silty Medium/ Fine Sand, compact, moist, brown (1.7 - 2.5 m)
						Silty Medium/ Fine Sand, compact, wet, brown (2.5 - 3.7 m)
4						
6						
8						
10						
12						

Soil Group Name: grain size,color, density/consistency, moisture, stratification, other descriptors

Rock Description: modifier, color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.

Ground Water Level Upon Well Completion (mbgs)

Seal (grout / hole plug) **Silica Sand Pack** **Well Screen**

AZIMUTH ENVIRONMENTAL CONSULTING, INC.
Environmental Assessments & Approvals

Project: 41 & 43 Essa Rd	Project Number: 18-175	Client: Barrie Drive-A-Car (1979) Ltd.	Borehole ID: BH309/ MW309
Project Location: 41 & 43 Essa Road, Barrie, ON		Drilling Contractor: Orbit Garant	Drilling Method: Hollow Stems with Split Spoons
Logged By: I. Acheson	Date: 23-Oct-2018	Flushmount (mbgs): 0.17	Well Depth (mbgs): 12.7
UTM: (NAD 83, Zone 17T)	Ground Elevation (masl):	Water Level (mbgs): 2.33	Well Diameter (mm): 50.8
Easting: 604238	Well Screen Type: 10-Slot PVC, schedule 40	Riser Pipe Type: Schedule 40 PVC	Well Screen Length (m): 1.0
Northing: 4914197			

Depth Below Ground Surface (mbgs)	Sample Type	Sample Number	Headspace (ppm)	Lithology	Monitoring Well Construction	Lithology Description **Soil Group Name:** grain size,color, density/consistency, moisture, stratification, other descriptors **Rock Description:** modifier, color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.
						Asphalt at surface (0.05 m thick)
	SS	1	0			Sand & Gravel, compact, dry, brown (0.0 - 0.5 m)
	SS	2	0			Fine Sand with trace Silt, compact, dry, dark brown transitioning to brown (0.5 - 1.0 m)
2	SS	3	0			
	SS	4&5	260/ 1,250			Fine Sand with trace Silt, compact, dry, light brown (1.0 - 1.5 m)
	SS	6	4,050			Silty Fine Sand, compact, moist, light brown and grey (1.5 - 2.1 m)
						Silty Fine Sand, compact, moist, light brown (2.1 - 2.6 m)
4	SS	7	4,650			Medium/ Fine Sand with trace silt, compact, wet, grey, hydrocarbon staining and strong hydrocarbon odour (2.6 - 4.4 m)
	SS	8	500			
	SS	9	1,300			Medium/ Fine Sand with trace silt, compact, wet, beige and light brown (4.4 - 4.6 m)
	SS	10&11	30/ 2,250			
6	SS	12	110			Medium/ Fine Sand with trace silt, compact, wet, grey with hydrocarbon staining and odour (4.6 - 5.0 m)
	SS	13&14	580/ 100			
	SS	15&16	220/ 160			Medium/ Fine Sand with trace silt, compact, wet, beige (5.0 - 5.45 m)
	SS	17	20			Medium/ Fine Sand with trace silt, compact, wet, grey (5.45 - 5.7 m)
8	SS	18	40			Silty Medium/ Fine Sand, compact, wet, beige and light brown (5.7 - 6.05 m)
						Silty Medium/ Fine Sand, compact, wet, beige (6.05 - 6.3 m)
	SS	19	15			Silty Medium/ Fine Sand, compact, wet, brown with grey banding (6.3 - 7.9 m)
						Medium/ Fine Sandy Silt, firm, moist, grey (7.9 - 9.4 m)
	SS	20	30			Medium/ Fine Sand with trace silt, compact, wet, brown (9.4 - 10.2 m)
10	SS	21&22	10/ 15			Medium/ Fine Sand with trace silt, compact, wet, grey (10.2 - 12.2 m)
	SS	23	5			Silty clay seam (10.2 - 10.3 m)
	SS	24	0			
	SS	25	40			
12	SS	26, 27	5/ 5			Clay with trace silt and medium/ fine sand, firm, wet, grey and brown (12.2 - 12.7 m)
	SS	28	5			

Ground Water Level Upon Well Completion (mbgs)

Seal (grout / hole plug) **Silica Sand Pack** **Well Screen**

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Environmental Assessments & Approvals

Project: 41 & 43 Essa Rd	**Project Number:** 18-175	**Client:** Barrie Drive-A-Car (1979) Ltd.	**Borehole ID:** BH401a/ MW401a
Project Location: 41 & 43 Essa Road, Barrie, ON		**Drilling Contractor:** Orbit Garant	**Drilling Method:** Hollow Stems with Split Spoons
Logged By: I. Acheson	**Date:** 6-May-2019	**Flushmount (mbgs):** 0.09	**Well Depth (mbgs):** 7.2
UTM: (NAD 83, Zone 17T)	**Ground Elevation (masl):**	**Water Level (mbgs):** 2.58	**Well Diameter (mm)** 50.8
Easting: 604218	**Well Screen Type:** 10-Slot PVC, schedule 40	**Riser Pipe Type:** Schedule 40 PVC	**Well Screen Length (m):** 3.0
Northing: 4914163			

Depth Below Ground Surface (mbgs)	Sample Type	Sample Number	Headspace (ppm)	Lithology	Monitoring Well Construction	Lithology Description
	SS	1	5			Asphalt at surface (0.05 m thick)
						Medium sand with stone, compact, dry, golden brown (0.0 - 0.7)
	SS	2	0			Fine Sand with trace Silt, compact, dry, light brown with orange mottling (0.7 - 2.0 m)
	SS	3&4	0/ 0			
2	SS	5	5			Fine Sand with trace Silt, compact, wet, light brown with orange mottling (0.7 - 6.0 m)
	SS	6	25			
	SS	7	25			
4						
	SS	8	25			
	SS	9	130			Orange and black mottling (5.15 m)
6						
	SS	10	45			Silt, firm, moist, grey (6.0 - 6.25 m)
	SS	11	40			Medium and Fine Sand with trace silt, compact, wet, grey with black banding (6.25 - 7.7 m)
8						
10						
12						

Soil Group Name: grain size,color, density/consistency, moisture, stratification, other descriptors

Rock Description: modifier, color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.

Ground Water Level Upon Well Completion (mbgs)

Seal (grout / hole plug) **Silica Sand Pack** **Well Screen**

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Environmental Assessments & Approvals

Project: 41 & 43 Essa Rd	**Project Number:** 18-175	**Client:** Barrie Drive-A-Car (1979) Ltd.	**Borehole ID:** BH401b/ MW401b
Project Location: 41 & 43 Essa Road, Barrie, ON		**Drilling Contractor:** Orbit Garant	**Drilling Method:** Hollow Stems with Split Spoons
Logged By: I. Acheson	**Date:** 6-May-2019	**Flushmount (mbgs):** 0.08	**Well Depth (mbgs):** 4.9
UTM: (NAD 83, Zone 17T)	**Ground Elevation (masl):**	**Water Level (mbgs):** 2.63	**Well Diameter (mm)** 50.8
Easting: 604218	**Well Screen Type:** 10-Slot PVC, schedule 40	**Riser Pipe Type:** Schedule 40 PVC	**Well Screen Length (m):** 3.0
Northing: 4914163			

Depth Below Ground Surface (mbgs)	Sample Type	Sample Number	Headspace (ppm)	Lithology	Monitoring Well Construction	Lithology Description
						Soil Group Name: grain size,color, density/consistency, moisture, stratification, other descriptors **Rock Description:** modifier, color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.
						Asphalt at surface (0.05 m thick)
						Advance directly to 2.4 mbgs
2	SS	1	5			Fine Sand, compact, wet, light brown (2.4 - 4.9 m)
	SS	2	0			
4						
6						
8						
10						
12						

Ground Water Level Upon Well Completion (mbgs)

Seal (grout / hole plug) **Silica Sand Pack** **Well Screen**

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Environmental Assessments & Approvals

Project: 41 & 43 Essa Rd	**Project Number:** 18-175	**Client:** Barrie Drive-A-Car (1979) Ltd.	**Borehole ID:** BH401c/ MW401c
Project Location: 41 & 43 Essa Road, Barrie, ON		**Drilling Contractor:** Orbit Garant	**Drilling Method:** Hollow Stems with Split Spoons
Logged By: I. Acheson	**Date:** 7-May-2019	**Flushmount (mbgs):** 0.13	**Well Depth (mbgs):** 4.2
UTM: (NAD 83, Zone 17T) **Easting:** 604218 **Northing:** 4914163	**Ground Elevation (masl):** **Well Screen Type:** 10-Slot PVC, schedule 40	**Water Level (mbgs):** 2.63 **Riser Pipe Type:** Schedule 40 PVC	**Well Diameter (mm)** 50.8 **Well Screen Length (m):** 3.0

Depth Below Ground Surface (mbgs)	Sample Type	Sample Number	Headspace (ppm)	Lithology	Monitoring Well Construction	Lithology Description
						Asphalt at surface (0.05 m thick)
	SS	1	0			Medium/ Fine Sand, compact, dry, beige and light brown (0.0 - 0.8 m)
	SS	2	0			Fine Sand, compact, dry, beige and light brown (0.8 - 1.6 m)
	SS	3	0			Fine Sand, compact, moist, beige and light brown (1.6 - 2.0 m)
2						
	SS	4	5			Fine Sand, compact, wet, beige and light brown (2.0 - 3.0 m)
4						
6						
8						
10						
12						

Soil Group Name: grain size,color, density/consistency, moisture, stratification, other descriptors

Rock Description: modifier, color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.

Ground Water Level Upon Well Completion (mbgs)

Seal (grout / hole plug) **Silica Sand Pack** **Well Screen**

AZIMUTH ENVIRONMENTAL CONSULTING, INC.
Environmental Assessments & Approvals

Project: 41 & 43 Essa Rd	**Project Number:** 18-175	**Client:** Barrie Drive-A-Car (1979) Ltd.	**Borehole ID:** BH402a/ MW402a
Project Location: 41 & 43 Essa Road, Barrie, ON		**Drilling Contractor:** Orbit Garant	**Drilling Method:** Hollow Stems with Split Spoons
Logged By: I. Acheson	**Date:** 7-May-2019	**Flushmount (mbgs):** 0.14	**Well Depth (mbgs):** 7.2
UTM: (NAD 83, Zone 17T)	**Ground Elevation (masl):**	**Water Level (mbgs):** 2.45	**Well Diameter (mm)** 50.8
Easting: 604235	**Well Screen Type:** 10-Slot PVC, schedule 40	**Riser Pipe Type:** Schedule 40 PVC	**Well Screen Length (m):** 3.0
Northing: 4914163			

Depth Below Ground Surface (mbgs)	Sample Type	Sample Number	Headspace (ppm)	Lithology	Monitoring Well Construction	Lithology Description
	SS	1	0			Asphalt at surface (0.05 m thick)
	SS	2	0			Medium sand with stone, compact, dry, golden brown (0.0 - 0.8)
						Fine Sand with trace silt, compact, dry, light brown (0.8 - 1.4 m)
2	SS	3	15			Fine Sand with trace silt, compact, moist, light brown (1.4 - 2.5 m)
	SS	4	20			Fine Sand with trace silt, compact, wet, light brown with orange mottling and black banding (2.5 - 3.9 m)
	SS	5	30			
4						Fine Sand with trace silt, compact, wet, grey (3.9 - 6.1 m)
	SS	6	--			Lost sample/ No recovery
	SS	7	25			
						Fine sand, compact, wet, grey and light brown (6.1 - 7.45 m)
6	SS	8	55			
	SS	9	10			
	SS	10	10			
8						
10						
12						

Soil Group Name: grain size,color, density/consistency, moisture, stratification, other descriptors

Rock Description: modifier, color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.

Ground Water Level Upon Well Completion (mbgs)

Seal (grout / hole plug) **Silica Sand Pack** **Well Screen**

AZIMUTH ENVIRONMENTAL CONSULTING, INC.
Environmental Assessments & Approvals

Project: 41 & 43 Essa Rd	**Project Number:** 18-175	**Client:** Barrie Drive-A-Car (1979) Ltd.	**Borehole ID:** BH402b/ MW402b
Project Location: 41 & 43 Essa Road, Barrie, ON		**Drilling Contractor:** Orbit Garant	**Drilling Method:** Hollow Stems with Split Spoons
Logged By: I. Acheson	**Date:** 8-May-2019	**Flushmount (mbgs):** 0.08	**Well Depth (mbgs):** 5.2
UTM: (NAD 83, Zone 17T) **Easting:** 604218 **Northing:** 4914163	**Ground Elevation (masl):** **Well Screen Type:** 10-Slot PVC, schedule 40	**Water Level (mbgs):** 2.43 **Riser Pipe Type:** Schedule 40 PVC	**Well Diameter (mm)** 50.8 **Well Screen Length (m):** 3.0

Depth Below Ground Surface (mbgs)	Sample Type	Sample Number	Headspace (ppm)	Lithology	Monitoring Well Construction	Lithology Description
						Asphalt at surface (0.05 m thick)
						Advance directly to 1.5 mbgs
2	SS	1	0			Medium/ Fine Sand with trace silt, compact, moist, light brown with black bands and orange mottling (1.5 - 2.25 m)
	SS	2	5			
	SS	3	15			Medium/ Fine Sand with trace silt, compact, wet, light brown with black bands and orange mottling (2.25 - 4.45 m)
4	SS	4	10			
6						
8						
10						
12						

Soil Group Name: grain size,color, density/consistency, moisture, stratification, other descriptors

Rock Description: modifier, color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.

Ground Water Level Upon Well Completion (mbgs)

Seal (grout / hole plug) **Silica Sand Pack** **Well Screen**

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Environmental Assessments & Approvals

Project: 41 & 43 Essa Rd	**Project Number:** 18-175	**Client:** Barrie Drive-A-Car (1979) Ltd.	**Borehole ID:** BH402c/ MW402c
Project Location: 41 & 43 Essa Road, Barrie, ON		**Drilling Contractor:** Orbit Garant	**Drilling Method:** Hollow Stems with Split Spoons
Logged By: I. Acheson	**Date:** 8-May-2019	**Flushmount (mbgs):** 0.15	**Well Depth (mbgs):** 4.2
UTM: (NAD 83, Zone 17T)	**Ground Elevation (masl):**	**Water Level (mbgs):** 2.58	**Well Diameter (mm)** 50.8
Easting: 604218	**Well Screen Type:** 10-Slot PVC, schedule 40	**Riser Pipe Type:** Schedule 40 PVC	**Well Screen Length (m):** 3.0
Northing: 4914163			

Depth Below Ground Surface (mbgs)	Sample Type	Sample Number	Headspace (ppm)	Lithology	Monitoring Well Construction	Lithology Description
						Asphalt at surface (0.05 m thick)
						Advance directly to 1.5 mbgs
2	SS	1	0			Medium/ Fine Sand, compact, moist, light brown with black bands and orange mottling (1.5 - 2.25 m)
	SS	2	0			
	SS	3	0			Medium/ Fine Sand, compact, wet, light brown with black bands and orange mottling (2.25 - 4.45 m)
4	SS	4	10			
6						
8						
10						
12						

Soil Group Name: grain size,color, density/consistency, moisture, stratification, other descriptors

Rock Description: modifier, color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.

Ground Water Level Upon Well Completion (mbgs)

Seal (grout / hole plug) **Silica Sand Pack** **Well Screen**

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Environmental Assessments & Approvals

Project: 41 & 43 Essa Rd	**Project Number:** 18-175	**Client:** Barrie Drive-A-Car (1979) Ltd.	**Borehole ID:** BH403a/ MW403a
Project Location: 41 & 43 Essa Road, Barrie, ON		**Drilling Contractor:** Orbit Garant	**Drilling Method:** Hollow Stems with Split Spoons
Logged By: I. Acheson	**Date:** 9-May-2019	**Flushmount (mbgs):** 0.11	**Well Depth (mbgs):** 7.3
UTM: (NAD 83, Zone 17T) **Easting:** 604235 **Northing:** 4914163	**Ground Elevation (masl):** **Well Screen Type:** 10-Slot PVC, schedule 40	**Water Level (mbgs):** 2.73 **Riser Pipe Type:** Schedule 40 PVC	**Well Diameter (mm)** 50.8 **Well Screen Length (m):** 3.0

Depth Below Ground Surface (mbgs)	Sample Type	Sample Number	Headspace (ppm)	Lithology	Monitoring Well Construction	Lithology Description
	SS	1	0			Asphalt at surface (0.05 m thick)
	SS	2	0			Fine Sand with stones, compact, moist, light brown with orange mottling and black banding (0.8 - 2.3 m)
2	SS	3	0			
	SS	4	10			Fine Sand with trace silt, compact, wet, light brown with orange mottling and black banding (2.3 - 3.9 m)
	SS	5	35			
4						
	SS	6	20			Fine Sand with trace silt, compact, wet, light brown (3.9 - 6.1 m)
	SS	7	10			
6	SS	8	10			Fine sand, compact, wet, grey and light brown (6.1 - 7.45 m)
	SS	9	10			
	SS	10&11	15/ 15			Coarse Sand, compact, wet, granite colours (7.4 - 7.5 m)
8	SS	12	30			Silty sand with trace clay, stiff, wet, grey (7.5 - 8.3 m)
						Clay with trace silt, stiff, wet, grey (8.3 - 8.4 m)
10						
12						

Lithology Description

Soil Group Name: grain size,color, density/consistency, moisture, stratification, other descriptors

Rock Description: modifier, color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.

Ground Water Level Upon Well Completion (mbgs)

Seal (grout / hole plug) **Silica Sand Pack** **Well Screen**

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Environmental Assessments & Approvals

Project: 41 & 43 Essa Rd	**Project Number:** 18-175	**Client:** Barrie Drive-A-Car (1979) Ltd.	**Borehole ID:** BH403b/ MW403b
Project Location: 41 & 43 Essa Road, Barrie, ON		**Drilling Contractor:** Orbit Garant	**Drilling Method:** Hollow Stems with Split Spoons
Logged By: I. Acheson	**Date:** 8-May-2019	**Flushmount (mbgs):** 0.13	**Well Depth (mbgs):** 5.3
UTM: (NAD 83, Zone 17T)	**Ground Elevation (masl):**	**Water Level (mbgs):** 2.75	**Well Diameter (mm)** 50.8
Easting: 604218	**Well Screen Type:** 10-Slot PVC, schedule 40	**Riser Pipe Type:** Schedule 40 PVC	**Well Screen Length (m):** 3.0
Northing: 4914163			

Depth Below Ground Surface (mbgs)	Sample Type	Sample Number	Headspace (ppm)	Lithology	Monitoring Well Construction	Lithology Description
						Soil Group Name: grain size,color, density/consistency, moisture, stratification, other descriptors **Rock Description:** modifier, color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.
						Asphalt at surface (0.05 m thick)
						Advance directly to 1.5 mbgs
2	SS	1	5			Fine Sand, compact, moist, light brown (1.5 - 2.25 m)
	SS	2	0			Fine Sand, compact, wet, light brown (2.25 - 4.45 m)
	SS	3	15			Coarse Sand seam, granite colours (2.7 m)
4	SS	4	10			
6						
8						
10						
12						

Ground Water Level Upon Well Completion (mbgs)

Seal (grout / hole plug) **Silica Sand Pack** **Well Screen**

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Environmental Assessments & Approvals

Project: 41 & 43 Essa Rd	**Project Number:** 18-175	**Client:** Barrie Drive-A-Car (1979) Ltd.	**Borehole ID:** BH403c/ MW403c
Project Location: 41 & 43 Essa Road, Barrie, ON		**Drilling Contractor:** Orbit Garant	**Drilling Method:** Hollow Stems with Split Spoons
Logged By: I. Acheson	**Date:** 10-May-2019	**Flushmount (mbgs):** 0.10	**Well Depth (mbgs):** 4.0
UTM: (NAD 83, Zone 17T) **Easting:** 604218 **Northing:** 4914163	**Ground Elevation (masl):** **Well Screen Type:** 10-Slot PVC, schedule 40	**Water Level (mbgs):** 2.67 **Riser Pipe Type:** Schedule 40 PVC	**Well Diameter (mm)** 50.8 **Well Screen Length (m):** 3.0

Depth Below Ground Surface (mbgs)	Sample Type	Sample Number	Headspace (ppm)	Lithology	Monitoring Well Construction	Lithology Description
						Asphalt at surface (0.05 m thick)
						Advance directly to 1.5 mbgs
2	SS	1	0			Fine Sand, compact, dry, light brown (1.5 - 2.0 m)
	SS	2	5			Fine Sand, compact, wet, light brown with orange mottling and black banding (2.0 - 4.45 m)
	SS	3	5			
4	SS	4	0			
6						
8						
10						
12						

Soil Group Name: grain size,color, density/consistency, moisture, stratification, other descriptors

Rock Description: modifier, color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.

Ground Water Level Upon Well Completion (mbgs)

Seal (grout / hole plug) **Silica Sand Pack** **Well Screen**

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Environmental Assessments & Approvals

Project: 41 & 43 Essa Rd	**Project Number:** 18-175	**Client:** Barrie Drive-A-Car (1979) Ltd.	**Borehole ID:** BH404a/ MW404a
Project Location: 41 & 43 Essa Road, Barrie, ON		**Drilling Contractor:** Kodiak	**Drilling Method:** Direct Push with Sleeves/ Tubes
Logged By: I. Acheson	**Date:** 6-Jun-2019	**Stick-up (mags):** 0.37	**Well Depth (mbgs):** 7.8
UTM: (NAD 83, Zone 17T)	**Ground Elevation (masl):**	**Water Level (mbgs):** 3.28	**Well Diameter (mm)** 25.4
Easting: 604249	**Well Screen Type:** 10-Slot PVC, schedule 40	**Riser Pipe Type:** Schedule 40 PVC	**Well Screen Length (m):** 3.0
Northing: 4914163			

Depth Below Ground Surface (mbgs)	Sample Type	Sample Number	Headspace (ppm)	Lithology	Monitoring Well Construction	Lithology Description
						Soil Group Name: grain size,color, density/consistency, moisture, stratification, other descriptors **Rock Description:** modifier, color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.
						Wood dance floor + concrete subfloor (0.2 m thick)
	S/T	1	0			Fine Sand with stones, compact, dry, beige and light brown (0.0 - 1.2 m)
						Fine Sand with stones, compact, dry, golden and dark brown (1.2 - 1.7 m)
2	S/T	2	0			Fine Sand, compact, moist, brown (1.7 - 2.4 m)
	S/T	3	0			Medium/ Fine Sand, compact, wet, grey (2.4 - 4.3 m)
	S/T	4	0			
4	S/T	5	35			Sample refusual beyond 4.3 mbgs
6						
8						
10						
12						

Ground Water Level Upon Well Completion (mbgs)

Seal (grout / hole plug) **Silica Sand Pack** **Well Screen**

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Environmental Assessments & Approvals

Project: 41 & 43 Essa Rd	**Project Number:** 18-175	**Client:** Barrie Drive-A-Car (1979) Ltd.	**Borehole ID:** BH404b/ MW404b
Project Location: 41 & 43 Essa Road, Barrie, ON		**Drilling Contractor:** Kodiak	**Drilling Method:** Direct Push with Sleeves/ Tubes
Logged By: I. Acheson	**Date:** 6-Jun-2019	**Stick-up (mags):** 0.47	**Well Depth (mbgs):** 5.3
UTM: (NAD 83, Zone 17T)	**Ground Elevation (masl):**	**Water Level (mbgs):** 3.25	**Well Diameter (mm)** 25.4
Easting: 604249	**Well Screen Type:** 10-Slot PVC, schedule 40	**Riser Pipe Type:** Schedule 40 PVC	**Well Screen Length (m):** 3.0
Northing: 4914163			

Depth Below Ground Surface (mbgs)	Sample Type	Sample Number	Headspace (ppm)	Lithology	Monitoring Well Construction	Lithology Description
						Soil Group Name: grain size,color, density/consistency, moisture, stratification, other descriptors **Rock Description:** modifier, color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.
						Wood dance floor + concrete subfloor (0.2 m thick)
	S/T	1	0			Fine Sand with stones, compact, dry, beige and light brown (0.0 - 1.2 m)
						Fine Sand with stones, compact, dry, golden and dark brown (1.2 - 1.7 m)
	S/T	2	0			Fine Sand, compact, moist, brown (1.7 - 2.4 m)
2	S/T	3	10			Fine/ Coarse Sand, compact, wet, grey (2.4 - 4.3 m)
	S/T	4	15			
4	S/T	5	25			Sample refusual beyond 4.3 mbgs
6						
8						
10						
12						

Ground Water Level Upon Well Completion (mbgs)

Seal (grout / hole plug) **Silica Sand Pack** **Well Screen**

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Environmental Assessments & Approvals

Project: 41 & 43 Essa Rd	**Project Number:** 18-175	**Client:** Barrie Drive-A-Car (1979) Ltd.	**Borehole ID:** BH404c/ MW404c
Project Location: 41 & 43 Essa Road, Barrie, ON		**Drilling Contractor:** Kodiak	**Drilling Method:** Direct Push with Sleeves/ Tubes
Logged By: I. Acheson	**Date:** 6-Jun-2019	**Stick-up (mags):** 0.18	**Well Depth (mbgs):** 4.2
UTM: (NAD 83, Zone 17T)	**Ground Elevation (masl):**	**Water Level (mbgs):** 3.25	**Well Diameter (mm)** 25.4
Easting: 604249	**Well Screen Type:** 10-Slot PVC, schedule 40	**Riser Pipe Type:** Schedule 40 PVC	**Well Screen Length (m):** 3.0
Northing: 4914163			

Depth Below Ground Surface (mbgs)	Sample Type	Sample Number	Headspace (ppm)	Lithology	Monitoring Well Construction	Lithology Description
						Soil Group Name: grain size,color, density/consistency, moisture, stratification, other descriptors **Rock Description:** modifier, color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.
	S/T	1	0			Wood dance floor + concrete subfloor (0.2 m thick)
						Fine Sand with stones, compact, dry, beige and light brown (0.0 - 1.2 m)
						Fine Sand with stones, compact, dry, golden and dark brown (1.2 - 1.7 m)
	S/T	2	0			Fine Sand, compact, moist, brown (1.7 - 2.4 m)
2						Medium/ Coarse Sand, compact, wet, grey (2.4 - 4.3 m)
	S/T	3	0			
	S/T	4	15			Sample refusual beyond 4.3 mbgs
4						
6						
8						
10						
12						

Ground Water Level Upon Well Completion (mbgs)

Seal (grout / hole plug)

Silica Sand Pack

Well Screen

AZIMUTH ENVIRONMENTAL CONSULTING, INC.
Environmental Assessments & Approvals

Project: 41 & 43 Essa Rd	**Project Number:** 18-175	**Client:** Barrie Drive-A-Car (1979) Ltd.	**Borehole ID:** BH405a/ MW405a
Project Location: 41 & 43 Essa Road, Barrie, ON		**Drilling Contractor:** Orbit Garant	**Drilling Method:** Hollow Stems with Split Spoons
Logged By: I. Acheson	**Date:** 10-May-2019	**Flushmount (mbgs):** 0.08	**Well Depth (mbgs):** 7.1
UTM: (NAD 83, Zone 17T)	**Ground Elevation (masl):**	**Water Level (mbgs):** 2.32	**Well Diameter (mm)** 50.8
Easting: 604223	**Well Screen Type:** 10-Slot PVC, schedule 40	**Riser Pipe Type:** Schedule 40 PVC	**Well Screen Length (m):** 3.0
Northing: 4914163			

Depth Below Ground Surface (mbgs)	Sample Type	Sample Number	Headspace (ppm)	Lithology	Monitoring Well Construction	Lithology Description
	SS	1	5			Asphalt at surface (0.05 m thick)
	SS	2	5			Fine Sand with stones, compact, moist, golden and light brown, and grey (0.0 - 0.8 m)
2	SS	3	5			Medium/ Fine Sand with trace silt, compact, moist, light brown (0.8 - 1.3 m)
	SS	4	10			Medium/ Fine Sand with trace silt, compact, moist, light brown with orange mottling and black banding (1.3 - 1.55 m)
	SS	5	15			Fine Sand, compact, moist, light brown (1.55 - 2.3 m)
4						Fine Sand, compact, wet, light brown (2.3 - 7.9 m)
	SS	6	20			
	SS	7	5			
	SS	8	70			
6						
	SS	9	90			
	SS	10	130			
	SS	11	110			Clay with silt, stiff, wet, grey (7.9 - 8.2 m)
8						
10						
12						

Soil Group Name: grain size,color, density/consistency, moisture, stratification, other descriptors

Rock Description: modifier, color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.

Ground Water Level Upon Well Completion (mbgs)

Seal (grout / hole plug) **Silica Sand Pack** **Well Screen**

AZIMUTH ENVIRONMENTAL CONSULTING, INC.
Environmental Assessments & Approvals

Project: 41 & 43 Essa Rd	**Project Number:** 18-175	**Client:** Barrie Drive-A-Car (1979) Ltd.	**Borehole ID:** BH406a/ MW406a
Project Location: 41 & 43 Essa Road, Barrie, ON		**Drilling Contractor:** Kodiak	**Drilling Method:** Direct Push with Sleeves/ Tubes
Logged By: I. Acheson	**Date:** 6-Jun-2019	**Stick-up (mags):** 0.24	**Well Depth (mbgs):** 6.8
UTM: (NAD 83, Zone 17T)	**Ground Elevation (masl):**	**Water Level (mbgs):** 3.19	**Well Diameter (mm)** 25.4
Easting: 604243	**Well Screen Type:** 10-Slot PVC, schedule 40	**Riser Pipe Type:** Schedule 40 PVC	**Well Screen Length (m):** 3.0
Northing: 4914178			

Depth Below Ground Surface (mbgs)	Sample Type	Sample Number	Headspace (ppm)	Lithology	Monitoring Well Construction	Lithology Description
						Soil Group Name: grain size,color, density/consistency, moisture, stratification, other descriptors **Rock Description:** modifier, color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.
						Wood dance floor + concrete subfloor (0.2 m thick)
	S/T	1	0			Fine Sand with stones, compact, dry, beige and light brown (0.0 - 1.7 m)
						Fine Sand with trace silt, compact, moist, golden brown (1.7 m - 2.4)
	S/T	2	0			Fine Sand, compact, wet, grey (2.4 - 3.4 m)
2	S/T	3	0			Coarse/ Fine Sand, compact, wet, grey (3.4 - 4.9 m)
	S/T	4	25			
4	S/T	5	85			Sample refusual beyond 4.9 mbgs
6						
8						
10						
12						

Ground Water Level Upon Well Completion (mbgs)

Seal (grout / hole plug)

Silica Sand Pack

Well Screen

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Environmental Assessments & Approvals

Project: 41 & 43 Essa Rd	**Project Number:** 18-175	**Client:** Barrie Drive-A-Car (1979) Ltd.	**Borehole ID:** BH406b/ MW406b
Project Location: 41 & 43 Essa Road, Barrie, ON		**Drilling Contractor:** Kodiak	**Drilling Method:** Direct Push with Sleeves/ Tubes
Logged By: I. Acheson	**Date:** 6-Jun-2019	**Stick-up (mags):** 0.72	**Well Depth (mbgs):** 4.3
UTM: (NAD 83, Zone 17T)	**Ground Elevation (masl):**	**Water Level (mbgs):** 3.18	**Well Diameter (mm)** 25.4
Easting: 604243	**Well Screen Type:** 10-Slot PVC, schedule 40	**Riser Pipe Type:** Schedule 40 PVC	**Well Screen Length (m):** 3.0
Northing: 4914178			

Depth Below Ground Surface (mbgs)	Sample Type	Sample Number	Headspace (ppm)	Lithology	Monitoring Well Construction	Lithology Description
						Soil Group Name: grain size,color, density/consistency, moisture, stratification, other descriptors **Rock Description:** modifier, color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.
						Wood dance floor + concrete subfloor (0.2 m thick)
	S/T	1	0			Fine Sand with stones, compact, dry, beige and light brown (0.0 - 1.2 m)
						Fine Sand with stones, compact, dry, golden and dark brown (1.2 - 1.7 m)
	S/T	2	5			Fine Sand with trace silt, compact, moist, brown (1.7 - 3.4 m)
2	S/T	3	5			Fine/ Coarse Sand, compact, wet, grey (3.4 - 4.3 m)
	S/T	4	15			
4	S/T	5	110			Sample refusual beyond 4.3 mbgs
6						
8						
10						
12						

Ground Water Level Upon Well Completion (mbgs)

Seal (grout / hole plug) **Silica Sand Pack** **Well Screen**

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Environmental Assessments & Approvals

Project: 41 & 43 Essa Rd	**Project Number:** 18-175	**Client:** Barrie Drive-A-Car (1979) Ltd.	**Borehole ID:** BH406c/ MW406c
Project Location: 41 & 43 Essa Road, Barrie, ON		**Drilling Contractor:** Kodiak	**Drilling Method:** Direct Push with Sleeves/ Tubes
Logged By: I. Acheson	**Date:** 6-Jun-2019	**Stick-up (mags):** 0.45	**Well Depth (mbgs):** 5.1
UTM: (NAD 83, Zone 17T)	**Ground Elevation (masl):**	**Water Level (mbgs):** 3.17	**Well Diameter (mm)** 25.4
Easting: 604249	**Well Screen Type:** 10-Slot PVC, schedule 40	**Riser Pipe Type:** Schedule 40 PVC	**Well Screen Length (m):** 3.0
Northing: 4914163			

Depth Below Ground Surface (mbgs)	Sample Type	Sample Number	Headspace (ppm)	Lithology	Monitoring Well Construction	Lithology Description
						Soil Group Name: grain size,color, density/consistency, moisture, stratification, other descriptors **Rock Description:** modifier, color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.
						Wood dance floor + concrete subfloor (0.2 m thick)
	S/T	1	0			Fine Sand with stones, compact, dry, beige and light brown (0.0 - 1.2 m)
						Fine Sand with stones, compact, dry, golden and dark brown (1.2 - 1.7 m)
	S/T	2	0			Fine Sand, compact, moist, brown (1.7 - 2.4 m)
2	S/T	3	0			Medium/ Coarse Sand, compact, wet, grey (2.4 - 4.3 m)
	S/T	4	95			
	S/T	5	25			Sample refusual beyond 4.3 mbgs
4						
6						
8						
10						
12						

Ground Water Level Upon Well Completion (mbgs)

Seal (grout / hole plug)

Silica Sand Pack

Well Screen

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Environmental Assessments & Approvals

Project: 41 & 43 Essa Rd	**Project Number:** 18-175	**Client:** Barrie Drive-A-Car (1979) Ltd.	**Borehole ID:** BH407a/ MW407a
Project Location: 41 & 43 Essa Road, Barrie, ON		**Drilling Contractor:** Orbit Garant	**Drilling Method:** Hollow Stems with Split Spoons
Logged By: I. Acheson	**Date:** 13-May-2019	**Flushmount (mbgs):** 0.08	**Well Depth (mbgs):** 7.0
UTM: (NAD 83, Zone 17T)	**Ground Elevation (masl):**	**Water Level (mbgs):** 2.23	**Well Diameter (mm)** 50.8
Easting: 604214	**Well Screen Type:** 10-Slot PVC, schedule 40	**Riser Pipe Type:** Schedule 40 PVC	**Well Screen Length (m):** 3.0
Northing: 4914178			

Depth Below Ground Surface (mbgs)	Sample Type	Sample Number	Headspace (ppm)	Lithology	Monitoring Well Construction	Lithology Description
	SS	1	0			Asphalt at surface (0.05 m thick)
	SS	2	0			Fine Sand with stones, compact, moist, light and golden brown (0.0 - 0.7 m)
						Fine Sand, compact, dry, light brown (0.7 - 2.0 m)
2	SS	3	5			Fine Sand, compact, moist, light brown with black banding (2.0 - 2.3 m)
						Fine Sand, compact, wet, brown with black banding (2.3 - 7.2 m)
	SS	4	5			
	SS	5	25			
4						
	SS	6	5			
	SS	7	0			
	SS	8	20			
6	SS	9	10			
	SS	10	0			
	SS	11	5			Silt with trace fine sand, stiff, wet, grey (7.2 - 7.45 m)
	SS	12	5			Fine Sand, compact, wet, grey (7.45 - 7.9 m)
8	SS	13	5			Silt with trace sand, stiff, wet, grey (7.9 - 8.25 m)
10						
12						

Soil Group Name: grain size,color, density/consistency, moisture, stratification, other descriptors

Rock Description: modifier, color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.

Ground Water Level Upon Well Completion (mbgs)

Seal (grout / hole plug) **Silica Sand Pack** **Well Screen**

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Environmental Assessments & Approvals

Project: 41 & 43 Essa Rd	**Project Number:** 18-175	**Client:** Barrie Drive-A-Car (1979) Ltd.	**Borehole ID:** BH407b/ MW407b
Project Location: 41 & 43 Essa Road, Barrie, ON		**Drilling Contractor:** Orbit Garant	**Drilling Method:** Hollow Stems with Split Spoons
Logged By: I. Acheson	**Date:** 14-May-2019	**Flushmount (mbgs):** 0.18	**Well Depth (mbgs):** 5.3
UTM: (NAD 83, Zone 17T) **Easting:** 604218 **Northing:** 4914163	**Ground Elevation (masl):** **Well Screen Type:** 10-Slot PVC, schedule 40	**Water Level (mbgs):** 2.23 **Riser Pipe Type:** Schedule 40 PVC	**Well Diameter (mm)** 50.8 **Well Screen Length (m):** 3.0

Depth Below Ground Surface (mbgs)	Sample Type	Sample Number	Headspace (ppm)	Lithology	Monitoring Well Construction	Lithology Description
						Asphalt at surface (0.05 m thick)
						Advance directly to 1.5 mbgs
2	SS	1	0			Fine Sand, compact, moist, goldenn and light brown (1.5 - 2.0 m)
	SS	2	0			Fine Sand, compact, wet, light brown (2.0 - 2.25 m)
						Fine Sand, compact, wet, light brown with black banding (2.25 - 4.45 m)
	SS	3	0			
4	SS	4	0			
6						
8						
10						
12						

Soil Group Name: grain size,color, density/consistency, moisture, stratification, other descriptors

Rock Description: modifier, color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.

Ground Water Level Upon Well Completion (mbgs)

Seal (grout / hole plug) **Silica Sand Pack** **Well Screen**

AZIMUTH ENVIRONMENTAL CONSULTING, INC.

Environmental Assessments & Approvals

Project: 41 & 43 Essa Rd	**Project Number:** 18-175	**Client:** Barrie Drive-A-Car (1979) Ltd.	**Borehole ID:** BH407c/ MW407c
Project Location: 41 & 43 Essa Road, Barrie, ON		**Drilling Contractor:** Orbit Garant	**Drilling Method:** Hollow Stems with Split Spoons
Logged By: I. Acheson	**Date:** 14-May-2019	**Flushmount (mbgs):** 0.09	**Well Depth (mbgs):** 4.0
UTM: (NAD 83, Zone 17T) **Easting:** 604218 **Northing:** 4914163	**Ground Elevation (masl):** **Well Screen Type:** 10-Slot PVC, schedule 40	**Water Level (mbgs):** 2.20 **Riser Pipe Type:** Schedule 40 PVC	**Well Diameter (mm)** 50.8 **Well Screen Length (m):** 3.0

Depth Below Ground Surface (mbgs)	Sample Type	Sample Number	Headspace (ppm)	Lithology	Monitoring Well Construction	Lithology Description
						Asphalt at surface (0.05 m thick)
						Advance directly to 1.5 mbgs
2	SS	1	0			Fine Sand, compact, dry, golden and light brown (1.5 - 2.0 m)
	SS	2	0			Fine Sand, compact, wet, light brown (2.0 - 2.5 m)
						Fine Sand, compact, wet, light brown with black banding (2.5 - 4.45 m)
	SS	3	5			
4	SS	4	25			
6						
8						
10						
12						

Soil Group Name: grain size,color, density/consistency, moisture, stratification, other descriptors

Rock Description: modifier, color, hardness/degree of concentration, bedding and joint characteristics, solutions, void conditions.

Ground Water Level Upon Well Completion (mbgs)

Seal (grout / hole plug) **Silica Sand Pack** **Well Screen**

AZIMUTH ENVIRONMENTAL CONSULTING, INC.
Environmental Assessments & Approvals

Project: 41 & 43 Essa Rd	**Project Number:** 18-175	**Client:** Barrie Drive-A-Car (1979) Ltd.	**Borehole ID:** BH408/ MW408
Project Location: 41 & 43 Essa Road, Barrie, ON		**Drilling Contractor:** Orbit Garant	**Drilling Method:** Hollow Stems with Split Spoons
Logged By: I. Acheson	**Date:** 13-May-2019	**Flushmount (mbgs):** 0.15	**Well Depth (mbgs):** 6.7
UTM: (NAD 83, Zone 17T) **Easting:** 604216 **Northing:** 4914178	**Ground Elevation (masl):** **Well Screen Type:** 10-Slot PVC, schedule 40	**Water Level (mbgs):** 2.16 **Riser Pipe Type:** Schedule 40 PVC	**Well Diameter (mm)** 50.8 **Well Screen Length (m):** 3.0

Depth Below Ground Surface (mbgs)	Sample Type	Sample Number	Headspace (ppm)	Lithology	Monitoring Well Construction	Lithology Description
	SS	1	0			Asphalt at surface (0.05 m thick)
	SS	2	0			Medium/ Fine Sand with some stones, compact, dry, golden and light brown (0.0 - 1.4 m)
2	SS	3	0			Medium/ Fine Sand with trace silt, compact, wet, light brown (1.4 - 2.6 m)
	SS	4	0			Medium/ Fine Sand with trace silt, compact, moist, light brown with black banding (2.6 - 6.85 m)
	SS	5	0			
4	SS	6	0			
	SS	7	0			
	SS	8	0			
6	SS	9	0			
						Coarse sand, compact, wet, granite colours (6.85 - 7.2 m)
	SS	10	0			Silt with trace clay, stiff, wet, grey (7.2 - 8.2 m)
	SS	11	5			
8	SS	12	0			
10						
12						

Ground Water Level Upon Well Completion (mbgs)

Seal (grout / hole plug) **Silica Sand Pack** **Well Screen**

Gas	Measuring Range	Accuracy * Which ever is greater
Standard Confined Space Gases		
Hydrocarbons (CH4, std)	0 - 100% LEL	± 5% of reading or ± 2% LEL (*)
	0 - 50,000 ppm	± 50 ppm or ± 10% of reading (*)
Oxygen (O2)	0 - 40% Vol.	± 0.5% O2
Carbon Monoxide (CO)	0 - 500 ppm	± 5% of reading or ± 5 ppm CO (*)
Hydrogen Sulfide (H2S)	0 - 100 ppm	± 5% of reading or ± 2 ppm H2S (*)
Super Toxics and Other Gases		
Ammonia (NH3)	0 - 75 ppm	± 10% of reading or ± 5% of full scale (*)
Arsine (AsH3)	0 - 1 ppm 0 - 200 ppb	
Chlorine (Cl2)	0 - 3 ppm	
Chlorine Dioxide (ClO2)	0 - 1 ppm	
Fluorine (F2)	0 - 5 ppm	
Hydrogen Fluoride (HF)	0 - 9 ppm	
Hydrogen Chloride (HCl)	0 - 15 ppm	
Hydrogen Cyanide (HCN)	0 - 30 ppm	
Hydrogen Selenide (H2Se)	0 - 0.2 ppm	
Hydrogen Sulfide (H2S)	0 - 1 ppm 0 - 30 ppm	
Nitrogen Dioxide (NO2)	0 - 15 ppm	
Ozone (O3)	0 - 1 ppm	
Nitric Oxide (NO)	0 - 100 ppm	
Phosphine (PH3)	0 - 1 ppm	
Silane (SiH4)	0 - 15 ppm	

Sulfur Dioxide (SO2)	0 - 6 ppm	
IR Sensors		
Carbon Dioxide (CO2) (IR Sensor)	0 - 5,000 ppm 0 - 10,000 ppm 0 - 5% Vol. 0 - 20% Vol. 0 - 60% Vol.	± 5% of reading or ± 2% of full scale (*)
Methane (CH4) (IR Sensor)	0 - 100% LEL 0 - 100% Vol.	
Isobutane (iC4H10) (IR Sensor)	0 - 100% LEL 0 - 30% Vol.	

APPENDIX F

Analytical Tables

Table 1

Well Information and Water Level Measurements

PROJECT NO: 18-175

Well Name	Well Depth (m btoc)	Stickup (m ags)	Flushmount (m bgs)	Well Depth (m bgs)	Screened Interval (m bgs)	Ground Elevation (m rtd)	Casing Elevation (m rtd)	Date (d-m-y)	Water Level (m btoc)	Water Level (m bgs)	Water Level (m rtd)
MW101	6.40	0.98	-	5.42	2.4 - 5.4	227.69	228.67	26-Nov-19	3.93	2.95	224.74
								05-Jun-20	3.57	2.59	225.10
MW102	5.80	0.71	-	5.09	2.8 - 5.8	226.94	227.65	05-Jun-20	3.36	2.65	224.29
MW103	5.80	-	0.09	5.89	2.8 - 5.8	227.10	227.01	05-Jun-20	2.47	2.56	224.54
MW105*	5.70	-	0.14	5.84	3.0 - 6.0	227.16	227.02	25-Oct-18	3.50	3.64	223.52
								16-Apr-19	3.32	3.46	223.70
								26-Nov-19	3.41	3.55	223.61
								05-Jun-20	3.21	3.35	223.81
MW201	10.50	0.69	-	9.81	6.8 - 10.5	226.95	227.64	05-Jun-20	2.98	2.29	224.66
MW202*	5.42	-	0.11	5.53	2.8 - 5.8	226.47	226.36	25-Oct-18	2.54	2.65	223.82
								16-Apr-19	2.16	2.27	224.20
MW203*	5.05	-	0.09	5.14	2.95 - 5.95	226.68	226.59	25-Oct-18	2.57	2.66	224.02
								16-Apr-19	2.20	2.29	224.39
								05-Jun-20	2.10	2.19	224.49
MW204	6.10	-	0.26	6.36	3.1 - 6.1	227.27	227.01	05-Jun-20	2.89	3.15	224.12
MW205*	5.37	-	0.12	5.49	2.6 - 5.6	227.40	227.28	24-Oct-18	2.94	3.06	224.34
								16-Apr-19	2.65	2.77	224.63
								05-Jun-20	2.51	2.63	224.77
MW206	6.00	-	0.11	6.11	3.0 - 6.0	227.11	227.00	05-Jun-20	2.53	2.64	224.47
MW207	3.50	0.90	-	2.60	2.0 - 3.5	227.29	228.19	05-Jun-20	3.76	2.86	224.43
MW304	4.37	-	0.13	4.50	1.5 - 4.6	227.35	227.22	26-Oct-18	2.87	3.00	224.35
								16-Apr-19	2.71	2.84	224.51
								13-May-19	2.61	2.48	224.61
								26-Nov-19	2.78	2.65	224.44
								05-Jun-20	2.59	2.46	224.63
MW305	11.20	-	0.22	11.42	10.5 - 11.5	227.28	227.06	25-Oct-18	2.41	2.63	224.65
								16-Apr-19	2.38	2.16	224.68
								13-May-19	2.15	1.93	224.91
								26-Nov-19	2.47	2.25	224.59
								05-Jun-20	2.18	1.96	224.88
MW308	4.49	-	0.11	4.60	1.5 - 4.6	227.11	227.00	25-Oct-18	3.12	3.01	223.88
								16-Apr-19	2.95	3.06	224.05
								13-May-19	2.85	2.96	224.15
								26-Nov-19	3.03	3.14	223.97
								05-Jun-20	2.84	2.95	224.16
MW309	12.69	-	0.17	12.86	11.8 - 12.8	226.99	226.82	25-Oct-18	2.16	2.33	224.66
								16-Apr-19	1.95	1.78	224.87
								05-Jun-20	1.71	1.88	225.11
MW401a	7.17	-	0.09	7.26	4.3 - 7.3	227.50	227.41	13-May-19	2.49	2.58	224.92
								26-Nov-19	2.84	2.93	224.57
								05-Jun-20	2.55	2.64	224.86
MW401b	3.50	-	0.08	3.58	0.6 - 3.6	227.53	227.45	13-May-19	2.55	2.63	224.90
								26-Nov-19	2.90	2.98	224.55
								05-Jun-20	2.59	2.67	224.86
MW401c	4.22	-	0.13	4.35	1.4 - 4.4	227.57	227.44	13-May-19	2.50	2.63	224.94
								26-Nov-19	2.84	2.97	224.60
								05-Jun-20	2.56	2.69	224.88
MW402a	7.16	-	0.14	7.30	4.3 - 7.3	227.17	227.03	13-May-19	2.31	2.45	224.72
								26-Nov-19	2.84	2.98	224.19
								05-Jun-20	2.50	2.64	224.53
MW402b	5.15	-	0.08	5.23	2.2 - 5.2	227.13	227.05	13-May-19	2.35	2.43	224.70
								26-Nov-19	2.71	2.79	224.34
								05-Jun-20	2.45	2.53	224.60
MW402c	4.15	-	0.15	4.30	1.3 - 4.3	227.13	226.98	13-May-19	2.43	2.58	224.55
								26-Nov-19	2.62	2.77	224.36
								05-Jun-20	2.36	2.51	224.62
MW403a	7.34	-	0.11	7.45	4.5 - 7.5	227.10	226.99	13-May-19	2.62	2.73	224.37
								26-Nov-19	2.86	2.97	224.13
								05-Jun-20	2.63	2.74	224.36
MW403b	5.30	-	0.13	5.43	2.4 - 5.4	227.09	226.96	13-May-19	2.62	2.75	224.34
								26-Nov-19	2.86	2.99	224.10
								05-Jun-20	2.62	2.75	224.34
MW403c	4.01	-	0.10	4.11	1.1 - 4.1	227.10	227.00	13-May-19	2.57	2.67	224.43
								26-Nov-19	2.91	3.01	224.09
								05-Jun-20	2.67	2.77	224.33
MW404a	7.76	0.37	-	7.39	4.4 - 7.4	227.34	227.71	07-Jun-19	3.65	3.28	224.06
								26-Nov-19	3.85	3.48	223.86
								05-Jun-20	3.60	3.23	224.11
MW404b	5.30	0.47	-	4.83	1.8 - 4.8	227.33	227.80	07-Jun-19	3.72	3.25	224.08
								26-Nov-19	3.96	3.49	223.84
								05-Jun-20	3.71	3.24	224.09
MW404c	4.18	0.18	-	4.00	1.0 - 4.0	227.32	227.50	07-Jun-19	3.43	3.25	224.07
								26-Nov-19	3.68	3.50	223.82
								05-Jun-20	3.40	3.22	224.10
MW405a	7.14	-	0.08	7.22	4.1 - 7.1	226.91	226.83	13-May-19	2.24	2.32	224.59
								26-Nov-19	2.56	2.64	224.27
								05-Jun-20	2.27	2.35	224.56
MW406a	6.75	0.24	-	6.51	3.8 - 6.8	227.28	227.52	07-Jun-19	3.43	3.19	224.09
								26-Nov-19	3.65	3.41	223.87
								05-Jun-20	3.40	3.16	224.12
MW406b	4.31	0.72	-	3.59	1.3 - 4.3	227.28	228.00	07-Jun-19	3.90	3.18	224.10
								26-Nov-19	4.15	3.43	223.85
								05-Jun-20	3.87	3.15	224.13
MW406c	5.06	0.45	-	4.61	2.1 - 5.1	227.29	227.74	07-Jun-19	3.62	3.17	224.12
								26-Nov-19	3.88	3.43	223.86
								05-Jun-20	3.60	3.15	224.14
MW407a	6.98	-	0.08	7.06	4.0 - 7.0	226.83	226.75	13-May-19	2.15	2.23	224.60
								26-Nov-19	2.49	2.57	224.26
								05-Jun-20	2.30	2.38	224.45
MW407b	5.32	-	0.18	5.50	2.3 - 5.3	226.83	226.65	13-May-19	2.05	2.23	224.60
								26-Nov-19	2.41	2.59	224.24
								05-Jun-20	2.09	2.27	224.56
MW407c	4.01	-	0.09	4.10	1.0 - 4.0	226.81	226.72	13-May-19	2.11	2.20	224.61
								26-Nov-19	2.46	2.55	224.26
								05-Jun-20	2.15	2.24	224.57
MW408	6.71	-	0.19	6.90	3.7 - 6.7	226.70	226.51	13-May-19	2.01	2.20	224.50
								26-Nov-19	2.32	2.51	224.19
								05-Jun-20	2.03	2.22	224.48

NOTES:

m ags - metres above ground surface
m bgs - metres below ground surface
m btoc - metres below top of casing
m rtd - metres relative to datum
- not appilcable
--- denotes information not available
*ground surface elevation revised from G2S DRAFT Phase Two ESA Report
Ground survey elevation completed by RudyMak Survey Ltd. on November 28, 2019

Table 2

Soil Quality Analytical Results: Hydrocarbons

PROJECT NO: 18-175

Borehole	Depth (m bgs)	Date Sampled (d-m-y)	BTEX				HYDROCARBONS				
			Benzene (µg/g)	Toluene (µg/g)	Ethylbenzene (µg/g)	Total Xylenes (µg/g)	F1 (C_6-$C_{<10}$)-BTEX (µg/g)	F1 (C_6-$C_{<10}$) (µg/g)	F2 (C_{10}-$C_{<16}$) (µg/g)	F3 (C_{16}-$C_{<34}$) (µg/g)	F4 (C_{34}-C_{50}) (µg/g)
Table 1 (O.Reg. 153/04*)			**0.02**	**0.2**	**0.05**	**0.05**	**25**	**---**	**10**	**240**	**120**
Table 2 (O.Reg. 153/04)**			**0.21**	**2.3**	**1.1**	**3.1**	**55**	**---**	**98**	**300**	**2800**
TP-1-3	2.2 - 2.5	14-May-18	<0.02	**59**	**51**	**330**	**3,600**	**4,000**	**1,100**	<50	<50
TP-6-3	2.2 - 2.5	14-May-18	<0.02	<0.02	0.06	**0.63**	**490**	**490**	**3,100**	**1,200**	<50
BH101	4.55 - 5.05	08-Feb-18	<0.0068	<0.018	<0.080	<0.050	---	<5.0	<10	<50	<50
BH102	2.25 - 2.95	08-Feb-18	<0.0068	**0.156**	<0.080	**0.649**	---	**156**	**1,990**	**916**	<50
	6.0 - 6.6	08-Feb-18	<0.0068	<0.018	<0.08	<0.05	---	---	---	---	---
BH103	3.75 - 4.45	09-Feb-18	<0.0068	**0.041**	<0.080	**0.486**	---	**536**	**344**	<50	<50
	Duplicate	09-Feb-18	<0.11	<0.29	<1.3	<0.58	---	**1370**	**244**	<50	<50
	6.0 - 6.6	09-Feb-18	<0.0068	<0.018	<0.080	<0.050	---	**17**	<10	<50	<50
BH104	3.0 - 3.6	09-Feb-18	<0.0068	<0.018	<0.080	<0.050	---	<5.0	<10	<50	<50
	6.0 - 6.6	09-Feb-18	<0.0068	<0.018	<0.08	<0.05	---	---	---	---	---
BH105	3.0 - 3.6	09-Feb-18	<0.0068	<0.018	<0.080	<0.050	---	<5.0	<10	<50	<50
	6.0 - 6.6	09-Feb-18	<0.0068	<0.018	<0.08	<0.05	---	---	---	---	---
BH201	6.0 - 6.45	19-Mar-18	<0.0068	<0.018	<0.080	<0.050	---	<5.0	<10	<50	<50
BH202	2.4 - 3.0	19-Mar-18	<0.0068	<0.018	<0.080	<0.050	---	<5.0	<10	<50	<50
BH203	2.4 - 3.0	19-Mar-18	<0.0068	<0.018	<0.080	<0.050	---	<5.0	<10	<50	<50
	Duplicate	19-Mar-18	<0.0068	<0.018	<0.080	<0.050	---	<5.0	<10	<50	<50
BH204	2.4 - 3.6	19-Mar-18	<0.0068	<0.018	<0.080	<0.050	---	<5.0	<10	<50	<50
BH205	2.4 - 3.6	20-Mar-18	<0.0068	<0.018	<0.080	<0.050	---	<5.0	<10	<50	<50
BH206	2.4 - 3.6	20-Mar-18	<0.0068	<0.018	<0.080	<0.050	---	<5.0	<10	<50	<50
BH207	2.4 - 3.3	20-Mar-18	<0.0068	**1.1**	<0.080	**9.0**	---	**113**	**65**	<50	<50
BH304-4	2.5 - 2.95	26-Oct-18	<0.02	<0.02	<0.05	<0.05	<5	<5	<10	<50	<50
BH305-5	3.1 - 3.7	24-Oct-18	<0.02	<0.02	<0.05	<0.05	<5	<5	<10	<50	<50
	Duplicate	24-Oct-18	<0.02	<0.02	<0.05	<0.05	<5	<5	<10	<50	<50

Table 2

Soil Quality Analytical Results: Hydrocarbons

PROJECT NO: 18-175

Borehole	Depth (m bgs)	Date Sampled (d-m-y)	BTEX				HYDROCARBONS				
			Benzene (µg/g)	Toluene (µg/g)	Ethylbenzene (µg/g)	Total Xylenes (µg/g)	F1 (C_6-$C_{<10}$)-BTEX (µg/g)	F1 (C_6-$C_{<10}$) (µg/g)	F2 (C_{10}-$C_{<16}$) (µg/g)	F3 (C_{16}-$C_{<34}$) (µg/g)	F4 (C_{34}-C_{50}) (µg/g)
Table 1 (O.Reg. 153/04*)			**0.02**	**0.2**	**0.05**	**0.05**	**25**	**---**	**10**	**240**	**120**
BH305-8	10.9 - 11.2	24-Oct-18	<0.02	<0.02	<0.05	<0.05	<5	<5	<10	<50	<50
BH308-4	2.5 - 2.95	24-Oct-18	<0.02	<0.02	<0.05	<0.05	<5	<5	<10	<50	<50
BH309-6	3.1 - 3.9	23-Oct-18	<0.02	**0.88**	**3.0**	**70**	**330**	**330**	**120**	<50	<50
BH309-27	12.3 - 12.5	23-Oct-18	<0.02	<0.02	<0.05	<0.05	<5	<5	<10	<50	<50
BH 401a-6	3.15 - 3.75	06-May-19	<0.02	<0.2	<0.05	<0.03	---	<10	<5	<10	<10
BH 401a-9	5.4 - 6.1	06-May-19	<0.02	<0.2	<0.05	<0.03	---	<10	<5	<10	<10
BH 401b-1	2.4 - 3.0	06-May-19	<0.02	<0.2	<0.05	<0.03	---	<10	<5	<10	<10
BH 401c-4	2.3 - 3.0	07-May-19	<0.02	<0.2	<0.05	<0.03	---	<10	<5	<10	<10
	Duplicate	07-May-19	<0.02	<0.2	<0.05	<0.03	---	<10	<5	<10	<10
BH 402a-5	3.15 - 3.75	07-May-19	<0.02	<0.2	<0.05	<0.03	---	<10	<5	<10	<10
BH 402a-8	5.4 - 6.1	07-May-19	<0.02	<0.2	<0.05	<0.03	---	<10	<5	<10	<10
BH 402b-3	3.0 - 3.6	08-May-19	<0.02	<0.2	<0.05	<0.03	---	<10	<5	<10	<10
BH 402c-4	3.75 - 4.45	08-May-19	<0.02	<0.2	<0.05	<0.03	---	<10	<5	<10	<10
BH 403a-5	3.15 - 3.75	09-May-19	<0.02	<0.2	<0.05	<0.03	---	<10	**7**	<10	<10
BH 403b-3	3.0 - 3.6	09-May-19	<0.02	<0.2	<0.05	<0.03	---	<10	<5	<10	<10
BH 403c-2	2.25 - 2.85	10-May-19	<0.02	<0.2	<0.05	<0.03	---	<10	**6**	<10	<10
BH 404a-4	2.40 - 3.70	06-Jun-19	< 0.02	< 0.2	< 0.05	< 0.03	< 10	< 10	< 5	< 10	< 10
BH 404b-3	1.70 - 2.40	06-Jun-19	< 0.02	< 0.2	< 0.05	< 0.03	< 10	< 10	< 5	< 10	< 10
BH404c-3	2.40 - 3.70	06-Jun-19	< 0.02	< 0.2	< 0.05	< 0.03	< 10	< 10	< 5	< 10	< 10
	Duplicate	06-Jun-19	< 0.02	< 0.2	< 0.05	< 0.03	< 10	< 10	< 5	< 10	< 10
BH 405a-4	2.3 - 3.0	10-May-19	<0.02	<0.2	<0.05	<0.03	---	<10	<5	<10	<10
BH 405a-10	6.85 - 7.45	10-May-19	<0.02	<0.2	<0.05	<0.03	---	<10	**6**	<10	<10
BH 406a-4	2.40 - 3.70	06-Jun-19	< 0.02	< 0.2	< 0.05	< 0.03	< 10	< 10	< 5	< 10	< 10
BH 406a-5	3.70 - 4.90	06-Jun-19	< 0.02	< 0.2	< 0.05	**0.06**	< 10	< 10	**10**	**13**	< 10
BH 406b-4	2.40 - 3.70	06-Jun-19	< 0.02	< 0.2	< 0.05	< 0.03	< 10	< 10	< 5	< 10	< 10
BH 406b-5	3.70 - 4.30	06-Jun-19	< 0.02	< 0.2	< 0.05	**0.05**	< 10	< 10	< 5	< 10	< 10

Table 2

Soil Quality Analytical Results: Hydrocarbons

PROJECT NO: 18-175

			BTEX				HYDROCARBONS				
Borehole	**Depth** (m bgs)	**Date Sampled** (d-m-y)	**Benzene** (µg/g)	**Toluene** (µg/g)	**Ethylbenzene** (µg/g)	**Total Xylenes** (µg/g)	**F1 (C_6-$C_{<10}$)-BTEX** (µg/g)	**F1 (C_6-$C_{<10}$)** (µg/g)	**F2 (C_{10}-$C_{<16}$)** (µg/g)	**F3 (C_{16}-$C_{<34}$)** (µg/g)	**F4 (C_{34}-C_{50})** (µg/g)
Table 1 (O.Reg. 153/04*)			**0.02**	**0.2**	**0.05**	**0.05**	**25**	**---**	**10**	**240**	**120**
BH406c-4	2.40 - 3.70	06-Jun-19	< 0.02	< 0.2	< 0.05	**0.23**	< 10	< 10	**11**	< 10	< 10
BH 407a-5	3.15 - 3.75	13-May-19	<0.02	<0.2	<0.05	<0.03	---	<10	<5	<10	<10
BH 407b-3	3.0 - 3.6	14-May-19	<0.02	<0.2	<0.05	<0.03	---	<10	<6	<10	<10
BH 407c-2	2.25 - 2.85	14-May-19	<0.02	<0.2	<0.05	<0.03	---	<10	<5	<10	<10
BH 408-11	7.2 - 7.5	13-May-19	<0.02	<0.2	<0.05	<0.03	---	<10	<5	<10	<10

NOTES:

1. --- in guideline(s) row denotes no criteria, and in data row(s) indicates parameter not analyzed.
2. Bold and red values denotes parameters above Table 2 guidelines.
4. ** denotes O.Reg. 153/04 Table 1 Residential/Parkland/Institutional Property Use, coarse grained soil guidelines
4. ** denotes O.Reg. 153/04 Table 2 Residential/Parkland/Institutional Property Use, coarse grained soil guidelines

Table 3

Soil Quality Analtyical Results: Volatile Organic Compounds

PROJECT NO: 18-175

Borehole	Depth (m bgs)	Date (d-m-y)	VOC Parameters: Dichlorodifluromethane (µg/g)	Vinyl Chloride (µg/g)	Bromomethane (µg/g)	Trichlorofluromethane (µg/g)	Acetone (µg/g)	1,1-Dichloroethene (µg/g)	Dichloromethane (methylene chloride) (µg/g)	trans-1,2-Dichloroethene (µg/g)	Methyl tert-Butyl Ether (µ g/g)	1,1-Dichloroethane (µg/g)	Methyl Ethyl Ketone (µg/g)	cis-1,2-Dichloroethene (µg/g)	Chloroform (µg/g)	1,2-Dichloroethane (µg/g)	1,1,1-Trichloroethane (µg/g)	Carbon Tetrachloride (µg/g)	1,2-Dichloropropane (µg/g)	Trichloroethene (µg/g)	Bromodichloromethane (µg /g)	Methyl Isobutyl Ketone (µg/g)	1,1,2-Trichloroethane (µg/g)	Dibromochloromethane (µg/g)	Ethylene Dibromide (µg/g)	Tetrachloroethene (µg/g)	1,1,1,2-Tetrachloroethane (µg/g)	Chlorobenzene (µg/g)	Bromoform (µg/g)	Styrene (µg/g)	1,1,2,2-Tetrachloroethane (µg/ g)	1,3-Dichlorobenzene (µg/g)	1,4-Dichlorobenzene (µg/g)	1,2-Dichlorobenzene (µg/g)	1,3-Dichloropropene (cis+trans) (µg/g)	n-Hexane (µg/g)
Table 1 (O.Reg. 153/04*)			0.05	0.02	0.05	0.25	0.5	0.05	0.05	0.05	0.05	0.05	0.5	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.5	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Table 2 (O.Reg. 153/04)**			16	0.02	0.05	4	16	0.05	0.1	0.084	0.75	0.47	16	1.9	0.05	0.05	0.38	0.05	0.05	0.061	1.5	1.7	0.05	2.3	0.05	0.28	0.058	2.4	0.27	0.7	0.05	4.8	0.083	1.2	0.05	2.8
TP-1-3	2.2 - 2.5	14-May-19	<0.05	<0.02	<0.05	<0.05	<0.50	<0.05	<0.05	<0.05	<0.05	<0.02	<0.50	<0.02	<0.04	<0.03	<0.05	<0.05	<0.03	<0.03	<0.05	<0.50	<0.04	<0.05	<0.04	<0.05	<0.04	<0.05	<0.04	<0.05	<0.05	<0.05	<0.05	<0.05	<0.04	**42**
TP-6-3	2.2 - 2.5	14-May-19	<0.05	<0.02	<0.05	<0.05	<0.50	<0.05	<0.05	<0.05	<0.05	<0.02	<0.50	<0.02	<0.04	<0.03	<0.05	<0.05	<0.03	<0.03	<0.05	<0.50	<0.04	<0.05	<0.04	<0.05	<0.04	<0.05	<0.04	<0.05	<0.05	<0.05	<0.05	<0.05	<0.04	**1.0**
BH102	6.0 - 6.6	08-Feb-18	<0.05	<0.02	<0.05	<0.05	<0.50	<0.05	<0.05	<0.05	<0.05	<0.05	<0.50	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.50	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.06	<0.05	<0.05	<0.042	<0.05
BH103	3.75 - 4.35	09-Feb-18	<0.05	<0.02	<0.05	<0.05	<0.50	<0.05	<0.05	<0.05	<0.05	<0.05	<0.75	<0.05	<0.45	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<2.1	<0.70	<1.7	<0.05	<0.32	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.20	<0.05	<0.05	<0.042	**1.8**
BH104	6.0 - 6.6	09-Feb-18	<0.05	<0.02	<0.05	<0.05	<0.50	<0.05	<0.05	<0.05	<0.05	<0.05	<0.50	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.50	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.06	<0.05	<0.05	<0.042	<0.05
BH105	6.0 - 6.6	09-Feb-18	<0.05	<0.02	<0.05	<0.05	<0.50	<0.05	<0.05	<0.05	<0.05	<0.05	<0.50	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.50	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.06	<0.05	<0.05	<0.042	<0.05
BH304-4	2.5 - 2.95	26-Oct-18	<0.05	<0.02	<0.05	<0.05	<0.50	<0.05	<0.05	<0.05	<0.05	<0.02	<0.50	<0.02	<0.04	<0.03	<0.05	<0.05	<0.03	<0.03	<0.05	<0.50	<0.04	<0.05	<0.04	<0.05	<0.04	<0.05	<0.04	<0.05	<0.05	<0.05	<0.05	<0.05	<0.04	<0.05
BH305-5	3.1 - 3.7	24-Oct-18	<0.05	<0.02	<0.05	<0.05	<0.50	<0.05	<0.05	<0.05	<0.05	<0.02	<0.50	<0.02	<0.04	<0.03	<0.05	<0.05	<0.03	<0.03	<0.05	<0.50	<0.04	<0.05	<0.04	<0.05	<0.04	<0.05	<0.04	<0.05	<0.05	<0.05	<0.05	<0.05	<0.04	<0.05
	Duplicate	24-Oct-18	<0.05	<0.02	<0.05	<0.05	<0.50	<0.05	<0.05	<0.05	<0.05	<0.02	<0.50	<0.02	<0.04	<0.03	<0.05	<0.05	<0.03	<0.03	<0.05	<0.50	<0.04	<0.05	<0.04	<0.05	<0.04	<0.05	<0.04	<0.05	<0.05	<0.05	<0.05	<0.05	<0.04	<0.05
BH305-8	10.9 - 11.2	24-Oct-18	<0.05	<0.02	<0.05	<0.05	<0.50	<0.05	<0.05	<0.05	<0.05	<0.02	<0.50	<0.02	<0.04	<0.03	<0.05	<0.05	<0.03	<0.03	<0.05	<0.50	<0.04	<0.05	<0.04	<0.05	<0.04	<0.05	<0.04	<0.05	<0.05	<0.05	<0.05	<0.05	<0.04	<0.05
BH308-4	2.5 - 2.95	24-Oct-18	<0.05	<0.02	<0.05	<0.05	<0.50	<0.05	<0.05	<0.05	<0.05	<0.02	<0.50	<0.02	<0.04	<0.03	<0.05	<0.05	<0.03	<0.03	<0.05	<0.50	<0.04	<0.05	<0.04	<0.05	<0.04	<0.05	<0.04	<0.05	<0.05	<0.05	<0.05	<0.05	<0.04	<0.05
BH309-6	3.1 - 3.9	23-Oct-18	<0.05	<0.02	<0.05	<0.05	<0.50	<0.05	<0.05	<0.05	<0.05	<0.02	<0.50	<0.02	<0.04	<0.03	<0.05	<0.05	<0.03	<0.03	<0.05	<0.50	<0.04	<0.05	<0.04	<0.05	<0.04	<0.05	<0.04	<0.05	<0.05	<0.05	<0.05	<0.05	<0.04	**0.86**
BH309-27	12.3 - 12.5	23-Oct-18	<0.05	<0.02	<0.05	<0.05	<0.50	<0.05	<0.05	<0.05	<0.05	<0.02	<0.50	<0.02	<0.04	<0.03	<0.05	<0.05	<0.03	<0.03	<0.05	<0.50	<0.04	<0.05	<0.04	<0.05	<0.04	<0.05	<0.04	<0.05	<0.05	<0.05	<0.05	<0.05	<0.04	<0.05
BH 401a-6	3.15 - 3.75	06-May-19	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.02	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02
BH 401a-9	5.4 - 6.1	06-May-19	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.02	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02
BH 401b-1	2.4 - 3.0	06-May-19	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.02	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02
BH 401c-4	2.3 - 3.0	07-May-19	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.02	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02
	Duplicate	07-May-19	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.02	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02
BH 402a-5	3.15 - 3.75	07-May-19	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.02	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02
BH 402a-8	5.4 - 6.1	07-May-19	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.02	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02
BH 402b-3	3.0 - 3.6	08-May-19	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.02	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02
BH 402c-4	3.75 - 4.45	08-May-19	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.02	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02
BH 403a-5	3.15 - 3.75	09-May-19	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.02	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02
BH 403b-3	3.0 - 3.6	09-May-19	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.02	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02
BH 403c-2	2.25 - 2.85	10-May-19	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.02	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02
BH 404a-4	2.40 - 3.70	06-Jun-19	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.02	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02
BH 404b-3	1.70 - 2.40	06-Jun-19	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.02	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02
BH 404c-3	2.40 - 3.70	06-Jun-19	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.02	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02
	Duplicate	06-Jun-19	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.02	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02
BH 405a-4	2.3 - 3.0	10-May-19	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.02	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02
BH 405a-10	6.85 - 7.45	10-May-19	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.02	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02
BH 406a-4	2.40 - 3.70	06-Jun-19	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.02	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02
BH 406a-5	3.70 - 4.70	06-Jun-19	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.02	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02
BH 406b-4	2.40 - 3.70	06-Jun-19	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.02	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02
BH 406b-5	3.70 - 4.30	06-Jun-19	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.02	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02
BH 406c-4	2.40 - 3.70	06-Jun-19	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.02	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02
BH 407a-5	3.15 - 3.75	13-May-19	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.02	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02
BH 407b-3	3.0 - 3.6	14-May-19	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.02	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02
BH 407c-2	2.25 - 2.85	14-May-19	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.02	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02
BH 408-11	7.2 - 7.5	13-May-19	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.05	< 0.02	< 0.5	< 0.02	< 0.02	< 0.02	< 0.05	< 0.02	< 0.02	< 0.02	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.02	< 0.02

Table 3

Soil Quality Analtyical Results: Volatile Organic Compounds

PROJECT NO: 18-175			VOC Parameters																																					
Borehole	Depth (m bgs)	Date (d-m-y)	Dichlorodifluromethane (µg/g)	Vinyl Chloride (µg/g)	Bromomethane (µg/g)	Trichlorofluromethane (µg/g)	Acetone (µg/g)	1,1-Dichloroethene (µg/g)	Dichloromethane (methylene chloride) (µg/g)	trans-1,2-Dichloroethene (µg/g)	Methyl tert-Butyl Ether (µ g/g)	1,1-Dichloroethane (µg/g)	Methyl Ethyl Ketone (µg/g)	cis-1,2-Dichloroethene (µg/g)	Chloroform (µg/g)	1,2-Dichloroethane (µg/g)	1,1,1-Trichloroethane (µg/g)	Carbon Tetrachloride (µg/g)	1,2-Dichloropropane (µg/g)	Trichloroethene (µg/g)	Bromodichloromethane (µg /g)	Methyl Isobutyl Ketone (µg/g)	1,1,2-Trichloroethane (µg/g)	Dibromochloromethane (µg/g)	Ethylene Dibromide (µg/g)	Tetrachloroethene (µg/g)	1,1,1,2-Tetrachloroethane (µg/g)	Chlorobenzene (µg/g)	Bromoform (µg/g)	Styrene (µg/g)	1,1,2,2-Tetrachloroethane (µg/ g)	1,3-Dichlorobenzene (µg/g)	1,4-Dichlorobenzene (µg/g)	1,2-Dichlorobenzene (µg/g)	1,3-Dichloropropene (cis+trans) (µg/g)	n-Hexane (µg/g)
Table 1 (O.Reg. 153/04*)			0.05	0.02	0.05	0.25	0.5	0.05	0.05	0.05	0.05	0.05	0.5	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.5	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Table 2 (O.Reg. 153/04**)			16	0.02	0.05	4	16	0.05	0.1	0.084	0.75	0.47	16	1.9	0.05	0.05	0.38	0.05	0.05	0.061	1.5	1.7	0.05	2.3	0.05	0.28	0.058	2.4	0.27	0.7	0.05	4.8	0.083	1.2	0.05	2.8				

NOTES:

1. --- in guideline(s) row denotes no criteria, and in data row(s) indicates parameter not analyzed.

2. Bold values indicate parameters above Table 1 guidelines.

*3. * denotes O.Reg. 153/04 Table 1 Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use, coarse grained soil guidelines*

*4. ** denotes O.Reg. 153/04 Table 2 Residential/Parkland/Instituational Property Use, coarse grained soil guidelines*

Table 4
Soil Quality Analtyical Results: Heavy Metals and Inorganic

PROJECT NO: 18-175

Borehole	Depth (m bgs)	Date Sampled (d-m-y)	pH ---	Fraction of Organic Carbon ---	Sodium Adsorption Ratio SAR	Conductivity mS/cm	Fluoride (2:1) (µg/g)	Nitrate as N (2:1) (µg/g)	Nitrite as N (2:1) (µg/g)	Antimony (µg/g)	Arsenic (µg/g)	Barium (µg/g)	Beryllium (µg/g)	Boron (µg/g)	Hot Water Soluble Boron (µg/g)	Calcium (µg/g)	Cadmium (µg/g)	Chromium (µg/g)	Chromium VI (µ g/g)	Cobalt (µg/g)	Copper (µg/g)	Cyanide (µg/g)	Lead (µg/g)	Magnesium (µg/g)	Mercury (µg/g)	Molybdenum (µg/g)	Nickel (µg/g)	Selenium (µg/g)	Silver (µg/g)	Sodium (µg/g)	Thallium (µg/g)	Uranium (µg/g)	Vanadium (µg/g)	Zinc (µg/g)
Table 1 (O.Reg. 153/04*)			---	---	---	---	---	---	---	1.3	18	220	2.5	36	---	---	1.2	70	0.66	21	92	0.051	120	---	0.27	2.0	82	1.5	0.5	---	1.0	2.5	86	290
Table 2 (O.Reg. 153/04)**			---	---	5.0	0.70	---	---	---	7.5	18	390	4.0	120	1.5	---	1.2	160	8.0	22	140	0.051	120	---	0.27	6.9	100	2.4	20	---	1.0	23	86	340
TP-1-3	2.2 - 2.5	14-May-18	---	---	---	---	<1.0	<1.0	<1.0	---	1.0	**21**	---	<5	---	---	<0.5	10	---	---	---	<0.040	**5.0**	---	<0.1	---	---	<0.4	<0.2	---	---	<0.5	---	---
TP-6-3	2.2 - 2.5	14-May-18	---	---	---	---	<1.0	<1.0	<1.0	---	1.0	**22**	---	<5	---	---	<0.5	10	---	---	---	<0.040	**3.0**	---	<0.1	---	---	<0.4	<0.2	---	---	<0.5	---	---
BH101	0.05 - 0.60	08-Feb-19	**7.50**	---	**0.16**	**0.19**	---	---	---	<1.0	**12**	**148**	<0.50	**0.24**	**6.0**	**16**	<0.50	**18**	<0.20	**3.9**	**18**	<0.05	**115**	<1.0	**0.08**	<1.0	**7.5**	**1.7**	<0.2	**2.4**	<0.5	<1.0	**45**	**187**
BH102	0.75 - 1.35	08-Feb-19	**7.50**	---	**1.34**	**0.09**	---	---	---	<1.0	**1.1**	**19**	<0.50	<0.1	<5	**4.1**	<0.50	**8.8**	**0.44**	**2.2**	**2.1**	<0.05	**2.2**	<1.0	**0.01**	<1.0	**4.4**	<1.0	<0.2	**9.8**	<0.5	<1.0	**21**	**13**
	2.25 - 2.95	08-Feb-19	**8.00**	---	**0.35**	**0.07**	---	---	---	<1.0	<1.0	**6.9**	<0.50	<0.1	<5	**2.2**	<0.50	**7.1**	<0.20	**1.5**	**1.9**	<0.05	<1.0	<1.0	<0.005	<1.0	**2.5**	<1.0	<0.2	**1.9**	<0.5	<1.0	**22**	**5.5**
BH103	0.75 - 1.35	09-Feb-19	**7.46**	---	**1.7**	**0.20**	---	---	---	<1.0	**1.3**	**28**	<0.50	**0.18**	<5	**3.3**	<0.50	**12**	**0.25**	**2.7**	**2.1**	<0.05	**1.5**	**1.6**	**0.01**	<1.0	**5.2**	<1.0	<0.2	**15**	<0.5	<1.0	**29**	**10**
BH304-4	2.5 - 2.95	26-Oct-18	---	---	---	---	---	---	---	<0.8	<1	**14**	<0.5	<5	---	---	<0.5	**4.0**	---	**1.6**	**3.0**	--	**1.0**	---	---	<0.5	**2.0**	<0.4	<0.2	--	<0.4	<0.5	**10**	**7.0**
BH305-8	10.9 - 11.2	24-Oct-18	---	---	---	---	---	---	---	<0.8	**2.0**	**129**	<0.5	**6.0**	<0.10	---	<0.5	**12**	<0.2	**4.1**	**8.0**	--	**3.0**	---	<0.10	<0.5	**6.0**	**0.5**	<0.2	--	<0.4	<0.5	**21**	**21**
BH308-4	2.5 - 2.95	24-Oct-18	---	---	---	---	---	---	---	<0.8	<1	**12**	<0.5	<5	<0.10	---	<0.5	**3.0**	<0.2	**1.1**	**2.0**	--	<1	---	<0.10	<0.5	**2.0**	**1.3**	<0.2	--	<0.4	<0.5	**9.0**	**5.0**
	Duplicate	24-Oct-18	---	---	---	---	---	---	---	<0.8	<1	**13**	<0.5	<5	<0.10	---	<0.5	**3.0**	<0.2	**0.90**	**2.0**	--	<1	---	<0.10	<0.5	**1.0**	**1.0**	<0.2	--	<0.4	<0.5	**8.0**	<5
BH309-3	1.6 - 2.2	23-Oct-18	**7.61**	<0.003	---	---	---	---	---	---	---	**---**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BH309-6	3.1 - 3.9	23-Oct-18	---	---	---	---	---	---	---	<0.8	<1	**11**	<0.5	<5	<0.10	---	<0.5	**6.0**	<0.2	**1.3**	**2.0**	--	**2.0**	---	<0.10	<0.5	**2.0**	**1.2**	<0.2	--	<0.4	<0.5	**15**	**6.0**
BH309-10	5.0 - 5.3	23-Oct-18	**7.84**	<0.003	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BH309-27	12.3 - 12.5	23-Oct-18	---	---	---	---	---	---	---	<0.8	**1.0**	**126**	<0.5	**5.0**	<0.10	---	<0.5	**12**	<0.2	**4.3**	**8.0**	--	**3.0**	---	<0.10	<0.5	**6.0**	**0.90**	<0.2	--	<0.4	<0.5	**23**	**21**
BH 401a-2	0.85 - 1.45	06-May-19	**7.82**	<0.005	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BH 401a-5	2.2 - 3.0	06-May-19	---	---	---	---	---	---	---	<0.5	**0.60**	**16**	<0.2	**3.8**	**0.05**	---	<0.5	**29**	<0.2	**2.0**	**2.0**	---	<5	---	**0.005**	<1	**37**	<0.5	<0.2	---	<0.1	**0.30**	**14**	**8.0**
BH 401a-11	7.1 - 7.7	06-May-19	**7.88**	**0.010**	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BH 401b-1	2.4 - 3.0	06-May-19	---	---	---	---	---	---	---	**0.60**	**0.80**	**23**	<0.2	**4.0**	**0.05**	---	<0.5	**15**	<0.2	**4.0**	**5.0**	---	<5	---	**0.005**	<1	**14**	<0.5	<0.2	---	<0.1	**0.30**	**21**	**11**
BH 401c-3	1.45 - 2.15	07-May-19	---	---	---	---	---	---	---	<0.5	**1.1**	**26**	<0.2	**4.5**	**0.05**	---	<0.5	**14**	<0.2	**3.0**	**6.0**	---	<5	---	**0.006**	<1	**11**	<0.5	<0.2	---	<0.1	**0.40**	**24**	**12**
BH 402a-4	2.3 - 3.0	07-May-19	---	---	---	---	---	---	---	<0.5	**<0.5**	**15**	<0.2	**3.6**	**0.08**	---	<0.5	**13**	<0.2	**2.0**	**2.0**	---	<5	---	<0.005	<1	**11**	<0.5	<0.2	---	<0.1	**0.30**	**21**	**8.0**
BH 402b-2	2.25 - 2.85	08-May-19	---	---	---	---	---	---	---	<0.5	**<0.5**	**15**	<0.2	**3.9**	**0.04**	---	<0.5	**11**	<0.2	**2.0**	**2.0**	---	<5	---	<0.005	<1	**11**	<0.5	<0.2	---	<0.1	**0.30**	**17**	**7.0**
BH 402c-3	3.0 - 3.6	08-May-19	**7.88**	---	---	---	---	---	---	<0.5	**0.50**	**15**	<0.2	**3.5**	**0.08**	---	<0.5	**7.0**	<0.2	**2.0**	<1	---	<5	---	<0.005	<1	**4.0**	<0.5	<0.2	---	<0.1	**0.30**	**17**	**6.0**
BH 403a-4	2.3 - 3.0	08-May-19	---	---	---	---	---	---	---	<0.5	**<0.5**	**13**	<0.2	**3.7**	**0.06**	---	<0.5	**11**	<0.2	**2.0**	**2.0**	---	<5	---	<0.005	<1	**11**	<0.5	<0.2	---	<0.1	**0.20**	**14**	**7.0**
BH 403b-2	2.25 - 2.85	09-May-19	---	---	---	---	---	---	---	<0.5	**<0.5**	**12**	<0.2	**3.7**	**0.05**	---	<0.5	**8.0**	<0.2	**2.0**	**2.0**	---	<5	---	<0.005	<1	**4.0**	<0.5	<0.2	---	<0.1	**0.30**	**20**	**7.0**
BH 403c-3	3.0 - 3.6	10-May-19	---	---	---	---	---	---	---	<0.5	**<0.5**	**12**	<0.2	**3.3**	**0.03**	---	<0.5	**7.0**	<0.2	**2.0**	<1	---	<5	---	<0.005	<1	**3.0**	<0.5	<0.2	---	<0.1	**0.30**	**18**	**6.0**
	Duplicate	10-May-19	---	---	---	---	---	---	---	<0.5	**<0.5**	**12**	<0.2	**3.3**	**0.03**	---	<0.5	**6.0**	<0.2	**1.0**	<1	---	<5	---	<0.005	<1	**4.0**	<0.5	<0.2	---	<0.1	**0.40**	**15**	**6.0**
BH 404a-4	2.40 - 3.70	06-Jun-19	---	---	---	---	---	---	---	< 0.5	**0.50**	**14**	< 0.2	**2.6**	**0.19**	---	< 0.5	**8.0**	< 0.2	**3.0**	**3.0**	< 0.05	< 5	---	< 0.005	< 1	**4.0**	< 0.5	< 0.2	---	< 0.1	**0.30**	**21**	**9.0**
BH 404b-4	1.70 - 2.40	06-Jun-19	---	---	---	---	---	---	---	< 0.5	**0.50**	**14**	< 0.2	**2.2**	**0.21**	---	< 0.5	**8.0**	< 0.2	**2.0**	**2.0**	< 0.05	< 5	---	< 0.005	< 1	**4.0**	< 0.5	< 0.2	---	< 0.1	**0.30**	**23**	**9.0**
BH 404c-2	2.40 - 3.70	06-Jun-19	---	---	---	---	---	---	---	< 0.5	**1.4**	**30**	**0.2**	**5.5**	**0.60**	---	< 0.5	**11**	< 0.2	**4.0**	**4.0**	**0.50**	**12**	---	**0.05**	< 1	**5.0**	< 0.5	< 0.2	---	< 0.1	**0.30**	**28**	**18**
BH 405a-5	3.15 - 3.75	10-May-19	---	---	---	---	---	---	---	<0.5	**0.50**	**738**	<0.2	**3.3**	**0.03**	---	<0.5	**7.0**	<0.2	**2.0**	**1.0**	---	<5	---	<0.005	<1	**3.0**	<0.5	<0.2	---	<0.1	**0.30**	**19**	**6.0**
BH 406a-4	2.40 - 3.70	06-Jun-19	---	---	---	---	---	---	---	< 0.5	**0.60**	**14**	< 0.2	**2.6**	**0.03**	---	< 0.5	**10**	< 0.2	**3.0**	**4.0**	< 0.05	< 5	---	< 0.005	< 1	**5.0**	< 0.5	< 0.2	---	< 0.1	**0.30**	**23**	**12**
BH 406b-4	2.40 - 3.70	06-Jun-19	---	---	---	---	---	---	---	< 0.5	**0.50**	**11**	< 0.2	**2.1**	**0.21**	---	< 0.5	**9.0**	< 0.2	**2.0**	**2.0**	< 0.05	< 5	---	< 0.005	< 1	**4.0**	< 0.5	< 0.2	---	< 0.1	**0.30**	**26**	**9.0**
BH 406c-5	3.70 - 4.30	06-Jun-19	---	---	---	---	---	---	---	< 0.5	**0.60**	**10**	< 0.2	**1.3**	**0.19**	---	< 0.5	**10**	< 0.2	**3.0**	**2.0**	< 0.05	< 5	---	< 0.005	< 1	**4.0**	< 0.5	< 0.2	---	< 0.1	**0.30**	**33**	**9.0**
	Duplicate	06-Jun-19	---	---	---	---	---	---	---	< 0.5	**0.70**	**13**	< 0.2	**3.4**	**0.12**	---	< 0.5	**9.0**	< 0.2	**3.0**	**4.0**	< 0.05	< 5	---	< 0.005	< 1	**5.0**	< 0.5	< 0.2	---	< 0.1	**0.30**	**22**	**11**
BH 407a-4	2.3 - 3.0	13-May-19	---	---	---	---	---	---	---	<0.5	**0.50**	**16**	<0.2	**3.9**	**0.09**	---	<0.5	**8.0**	<0.2	**2.0**	**2.0**	---	<5	---	<0.005	<1	**3.0**	<0.5	<0.2	---	<0.1	**0.30**	**29**	**7.0**
BH 407b-2	2.25 - 2.85	14-May-19	---	---	---	---	---	---	---	<0.5	**0.60**	**16**	<0.2	**1.2**	**0.07**	---	<0.5	**12**	<0.2	**3.0**	**2.0**	---	<5	---	<0.005	<1	**4.0**	<0.5	<0.2	---	<0.1	**0.30**	**42**	**9.0**
BH 407c-3	3.0 - 3.6	14-May-19	---	---	---	---	---	---	---	<0.5	**0.50**	**27**	<0.2	**1.4**	**0.06**	---	<0.5	**11**	<0.2	**2.0**	**3.0**	---	<5	---	<0.005	<1	**4.0**	<0.5	<0.2	---	<0.1	**0.30**	**34**	**8.0**
BH 408-11	7.2 - 7.5	13-May-19	---	---	---	---	---	---	---	<0.5	**1.1**	**44**	<0.2	**6.1**	**0.09**	---	<0.5	**8.0**	<0.2	**3.0**	**6.0**	---	<5	---	<0.005	<1	**6.0**	<0.5	<0.2	---	<0.1	**0.40**	**17**	**14**

NOTES:

1. **--- in guideline(s) row denotes no criteria, and in data row(s) indicates parameter not analyzed.**
2. **Bold and red values indicate parameters above the Table 2 guidelines.**
3. *** denotes O.Reg. 153/04 Table 1 Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use, coarse grained soil guidelines**
4. **** denotes O.Reg. 153/04 Table 2 Residential/Parkland/Institutional Property Use, coarse grained soil guidelines**
5. **N/A denotes not applicable**
6. **Bold indicates measureable parameters**

Table 5
Soil Quality Analytical Results: Polycyclic Aromatic Hydrocarbons & Acid/ Base/ Neutrals

PROJECT NO: 18-175

Borehole	Depth (m bgs)	Date Sampled (d-m-y)	PAH & ABN Parameters: Naphthalene µg/g	Acenaphthylene µg/g	Acenaphthene µg/g	Fluorene µg/g	Phenanthrene µg/g	Anthracene µg/g	Fluoranthene µg/g	Pyrene µg/g	Benz(a)anthracene µg/g	Chrysene µ g/g	Benzo(b)fluoranthene µg/g	Benzo(k)fluoranthene µg/g	Benzo(a)pyrene µg/g	Indeno(1,2,3-cd)pyrene µg/g	Dibenz(a,h)anthracene µg/g	Benzo(g,h,i)perylene µg/g	Methylnaphthalene,1- µg/g	Methylnaphthalene,2- µg/g	Phenol µg/g	Bis(2-chloroethyl)ether µg/g	2-Chlorophenol µg/g	o-Cresol µg/g	Bis(2-chloroisopropyl)ether µg/g	m & p - Cresol µg/g	2,4-Dimethylphenol µg/g	2,4-Dichlorophenol µg/g	1,2,4-Trichlorobenzene µg/g	p-Chloroaniline µg/g	2-and 1-methyl Naphthalene µg/g	2,4,6-Trichlorophenol µg/g	2,4,5-Trichlorophenol µg/g	1,1-Biphenyl µg/g	Dimethyl Phthalate µg/g	2,4 and 2,6-Dinitrotoluene µg/g	Diethyl Phthalate µg/ g	Pentachlorophenol µg/g	3,3'-Dichlorobenzidine µg/g	Bis(2-Ethylhexyl)phthalate µg/g	2,4-Dinitrophenol µg/g
Table 1 (O.Reg. 153/04*)			**0.09**	**0.093**	**0.072**	**0.12**	**0.69**	**0.16**	**0.56**	**1.0**	**0.36**	**2.8**	**0.47**	**0.48**	**0.3**	**0.23**	**0.1**	**0.68**	**0.59**	**0.59**	**0.5**	**0.5**	**0.1**	**---**	**0.5**	**---**	**0.2**	**0.1**	**0.05**	**0.5**	**0.59**	**0.1**	**0.1**	**0.05**	**0.5**	**0.5**	**0.5**	**0.3**	**1.0**	**5.0**	**2.0**
Table 2 (O.Reg. 153/04)**			**0.6**	**0.15**	**7.9**	**62**	**6.2**	**0.67**	**0.69**	**78**	**0.5**	**7.0**	**0.78**	**0.78**	**0.3**	**0.38**	**0.1**	**6.6**	**0.99**	**0.99**	**9.4**	**0.5**	**1.6**	**---**	**0.67**	**---**	**38**	**0.19**	**0.36**	**0.5**	**0.99**	**2.1**	**4.4**	**0.31**	**0.5**	**0.5**	**0.5**	**0.1**	**1.0**	**5.0**	**2.0**
TP-1-3	2.2 - 2.5	14-May-19	**24**	<0.05	<0.05	**0.30**	0.56	<0.05	<0.05	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	---	---	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.05	<0.05	**46**	<0.1	<0.1	**0.36**	<0.1	<0.5	<0.1	<0.1	<0.5	<0.2	<2.0
TP-6-3	2.2 - 2.5	14-May-19	<0.50	**1.2**	<0.50	**9.1**	**17**	**2.9**	<0.50	**1.3**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	---	---	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<0.50	<5.0	**55**	<1.0	<1.0	<0.50	<1.0	<5.0	<1.0	<1.0	<5.0	<2.0	<20
BH102	2.25 - 2.95	08-Feb-18	**0.477**	**0.176**	**0.766**	**1.3**	**3.1**	**0.207**	**0.06**	**0.21**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**1.6**	**2.6**	---	---	---	---	---	---	---	---	---	---	**4.1**	---	---	---	---	---	---	---	---	---	---
BH103	3.75 - 4.35	09-Feb-18	**3.0**	<0.05	<0.05	**0.051**	**0.072**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**3.4**	**7.8**	---	---	---	---	---	---	---	---	---	---	**11**	---	---	---	---	---	---	---	---	---	---
	6.0 - 6.6	09-Feb-18	<0.013	<0.05	<0.05	<0.05	<0.046	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	---	---	---	---	---	---	---	---	---	---	<0.042	---	---	---	---	---	---	---	---	---	---
BH201	6.0 - 6.45	19-Mar-18	<0.013	<0.05	<0.05	<0.05	<0.046	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	---	---	---	---	---	---	---	---	---	---	<0.042	---	---	---	---	---	---	---	---	---	---
BH202	2.4 - 3.0	19-Mar-18	<0.013	<0.05	<0.05	<0.05	<0.046	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	---	---	---	---	---	---	---	---	---	---	<0.042	---	---	---	---	---	---	---	---	---	---
BH203	2.4 - 3.6	19-Mar-18	<0.013	<0.05	<0.05	<0.05	<0.046	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	---	---	---	---	---	---	---	---	---	---	<0.042	---	---	---	---	---	---	---	---	---	---
	Duplicate	19-Mar-18	<0.013	<0.05	<0.05	<0.05	<0.046	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	---	---	---	---	---	---	---	---	---	---	<0.042	---	---	---	---	---	---	---	---	---	---
BH204	2.4 - 3.6	19-Mar-18	<0.013	<0.05	<0.05	<0.05	<0.046	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	---	---	---	---	---	---	---	---	---	---	<0.042	---	---	---	---	---	---	---	---	---	---
BH205	2.4 - 3.6	20-Mar-18	<0.013	<0.05	<0.05	<0.05	<0.046	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	---	---	---	---	---	---	---	---	---	---	<0.042	---	---	---	---	---	---	---	---	---	---
BH206	2.4 - 3.6	20-Mar-18	<0.013	<0.05	<0.05	<0.05	<0.046	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.03	<0.03	---	---	---	---	---	---	---	---	---	---	<0.042	---	---	---	---	---	---	---	---	---	---
BH207	2.4 - 3.3	20-Mar-18	**1.3**	<0.05	<0.05	<0.05	<0.046	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**1.1**	**2.3**	---	---	---	---	---	---	---	---	---	---	**3.3**	---	---	---	---	---	---	---	---	---	---
BH304-4	2.5 - 2.9	26-Oct-18	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	---	---	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.05	<0.5	<0.05	<0.1	<0.1	<0.05	<0.1	<0.5	<0.1	<0.1	<0.5	<0.2	<2.0
BH305-8	10.9 - 11.2	24-Oct-18	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	---	---	--	--	--	--	--	--	--	--	--	--	<0.05	--	--	--	--	--	--	--	--	--	--
BH308-1	3.1 - 3.7	23-Oct-18	**1.9**	<0.05	<0.05	<0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	---	---	--	--	--	--	--	--	--	--	--	--	**3.6**	--	--	--	--	--	--	--	--	--	--
	duplicate	23-Oct-18	**2.2**	<0.05	<0.05	<0.05	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	---	---	--	--	--	--	--	--	--	--	--	--	**4.6**	--	--	--	--	--	--	--	--	--	--
BH 401a-6	3.15 - 3.75	06-May-19	<0.05	<0.05	---	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BH 401a-9	5.4 - 6.1	06-May-19	<0.05	<0.05	---	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BH 401b-1	2.4 - 3.0	06-May-19	<0.05	<0.05	---	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BH 401c-4	2.3 - 3.0	07-May-19	<0.05	<0.05	---	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Duplicate	07-May-19	<0.05	<0.05	---	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BH 402a-5	3.15 - 3.75	07-May-19	<0.05	<0.05	---	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BH 402a-8	5.4 - 6.1	07-May-19	<0.05	<0.05	---	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BH 402b-3	3.0 - 3.6	08-May-19	<0.05	<0.05	---	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BH 402c-4	3.75 - 4.45	08-May-19	**0.29**	<0.05	---	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BH 403a-5	3.15 - 3.75	09-May-19	<0.05	<0.05	---	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BH 403b-3	3.0 - 3.6	09-May-19	<0.05	<0.05	---	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BH 403c-2	2.25 - 2.85	10-May-19	<0.05	<0.05	---	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BH 404a-4	2.40 - 3.70	06-Jun-19	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	--	--	--	--	--	--	--	--	--	--	< 0.05	--	--	--	--	--	--	--	--	--	--
BH 404b-3	1.20 - 1.70	06-Jun-19	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	--	--	--	--	--	--	--	--	--	--	< 0.05	--	--	--	--	--	--	--	--	--	--
BH 404c-3	2.40 - 3.70	06-Jun-19	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	--	--	--	--	--	--	--	--	--	--	< 0.05	--	--	--	--	--	--	--	--	--	--
	Duplicate	06-Jun-19	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	--	--	--	--	--	--	--	--	--	--	< 0.05	--	--	--	--	--	--	--	--	--	--
BH 405a-4	2.3 - 3.0	10-May-19	<0.05	<0.05	---	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BH 405a-10	6.85 - 7.45	10-May-19	<0.05	<0.05	---	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BH 406a-4	2.40 - 3.70	06-Jun-19	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	--	--	--	--	--	--	--	--	--	--	< 0.05	--	--	--	--	--	--	--	--	--	--
BH 406a-5	3.70 - 4.90	06-Jun-19	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	**0.09**	**0.08**	--	--	--	--	--	--	--	--	--	--	**0.17**	--	--	--	--	--	--	--	--	--	--
BH 406b-4	2.40 - 3.70	06-Jun-19	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	--	--	--	--	--	--	--	--	--	--	< 0.05	--	--	--	--	--	--	--	--	--	--
BH 406b-5	3.70 - 4.30	06-Jun-19	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	--	--	--	--	--	--	--	--	--	--	< 0.05	--	--	--	--	--	--	--	--	--	--
BH 406c-4	2.40 - 3.70	06-Jun-19	0.08	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	**0.06**	**0.11**	--	--	--	--	--	--	--	--	--	--	**0.16**	--	--	--	--	--	--	--	--	--	--
BH 407a-5	3.15 - 3.75	13-May-19	<0.05	<0.05	---	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BH 407b-3	3.0 - 3.6	14-May-19	<0.05	<0.05	---	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BH 407c-2	2.25 - 2.85	14-May-19	<0.05	<0.05	---	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BH 408-11	7.2 - 7.5	13-May-19	<0.05	<0.05	---	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

NOTES:

1. ***--- in guideline(s) row denotes no criteria, and in data row(s) indicates parameter not analyzed.***
2. ***Bold and red values denotes parameters above Table 2 guidelines.***
3. **** denotes O.Reg. 153/04 Table 1 Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use, coarse grained soil guidelines***
4. ***** denotes O.Reg. 153/04 Table 2 Residential/Parkland/Instituational Property Use, coarse grained soil guidelines***

1. ***--- in guideline(s) row denotes no criteria, and in data row(s) indicates parameter not analyzed.***
2. ***Bold values denotes parameters above Table 2 guidelines.***
3. **** denotes O.Reg. 153/04 Table 1 Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use, coarse grained soil guidelines***
4. ***** denotes O.Reg. 153/04 Table 2 Residential/Parkland/Instituational Property Use, coarse grained soil guidelines***

Table 5
Soil Quality Analytical Results: Polycyclic Aromatic Hydrocarbons & Acid/ Base/ Neutrals

PROJECT NO: 18-175

| | | | PAH & ABN Parameters | | |

Table 6

Ground and Surface Water Quality Analytical Results: Hydrocarbons

PROJECT NO.: 18-175

		BTEX				HYDROCARBONS				
Borehole	**Date (d-m-y)**	**Benzene (µg/L)**	**Toluene (µg/L)**	**Ethylbenzene (µg/L)**	**Total Xylenes (µg/L)**	**F1 (C_6-$C_{<10}$)-BTEX (µg/L)**	**F1 (C_6-$C_{<10}$) (µg/L)**	**F2 (C_{10}-$C_{<16}$) (µg/L)**	**F3 (C_{16}-$C_{<34}$) (µg/L)**	**F4 (C_{34}-C_{50}) (µg/L)**
Table 1 (O.Reg. 153/04*)		**0.5**	**0.8**	**0.5**	**72**	**420**	**---**	**150**	**500**	**500**
Table 2 (O.Reg. 153/04)**		**5.0**	**24**	**2.4**	**300**	**750**	**---**	**150**	**500**	**500**
MW101	13-Feb-18	<0.5	<0.5	<0.5	<0.5	---	<25	<100	<250	<250
	26-Nov-19	< 0.5	< 0.5	< 0.5	< 1.1	---	< 50	< 50	< 400	< 400
Duplicate	26-Nov-19	< 0.5	**0.60**	< 0.5	< 1.1	---	< 50	< 50	< 400	< 400
MW102	13-Feb-18	<0.5	<0.55	**0.67**	**2.3**	---	**14,100**	**44,900**	**19,900**	<250
Duplicate	13-Feb-18	<0.5	<0.7	**0.92**	**2.1**	---	**6,440**	**38,400**	**14,900**	<250
	23-Mar-18	<0.5	**0.50**	<0.5	**2.9**	---	**3,540**	**9,790**	**5,550**	<250
MW103	13-Feb-18	<0.85	**35**	**171**	**1,530**	---	**11,100**	**5,760**	<250	<250
	23-Mar-18	**2.5**	**107**	**109**	**844**	---	**8,860**	**3,560**	<250	<250
MW105	13-Feb-18	<0.5	<0.5	<0.5	<0.5	---	<25	<100	<250	<250
	25-Oct-18	<0.20	<0.20	<0.10	<0.20	<25	<25	<100	<100	<100
MW201	23-Mar-18	<0.5	<0.5	<0.5	<0.5	---	<25	<100	<250	<250
Duplicate	23-Mar-18	<0.5	<0.5	<0.5	<0.5	---	<25	<100	<250	<250
MW202	23-Mar-18	<0.5	<0.5	<0.5	<0.5	---	<25	<100	<250	<250
MW203	23-Mar-18	<0.5	<0.5	<0.5	<0.5	---	<25	<100	<250	<250
MW204	23-Mar-18	<0.5	<0.5	<0.5	<0.5	---	<25	<100	<250	<250
MW205	23-Mar-18	<0.5	**0.68**	<0.5	<0.5	---	<25	<100	<250	<250
	24-Oct-18	**0.21**	**0.80**	**0.17**	**0.32**	<25	<25	<100	<100	<100
MW206	23-Mar-18	<0.5	<0.5	<0.5	<0.5	---	<25	<100	<250	<250
MW207	23-Mar-18	<0.5	**23**	**694**	**5,080**	---	**15,400**	**8,340**	<250	<250
MW304	26-Oct-18	<0.20	**1.1**	**0.23**	**0.87**	<25	<25	<100	<100	<100
	26-Nov-19	< 0.5	< 0.5	< 0.5	< 1.1	---	< 50	< 50	< 400	< 400
MW305	25-Oct-18	<0.20	**0.62**	**0.28**	**2.0**	---	---	---	---	---
	26-Nov-19	< 0.5	< 0.5	< 0.5	< 1.1	---	< 50	< 50	**1,200**	< 400
MW308	25-Oct-18	<0.20	**0.80**	**0.15**	**0.27**	<25	<25	<100	<100	<100
	26-Nov-19	< 0.5	< 0.5	< 0.5	< 1.1	---	< 50	< 50	**700**	< 400
Duplicate	26-Nov-19	< 0.5	< 0.5	< 0.5	< 1.1	---	< 50	< 50	< 400	< 400
MW309	25-Oct-18	<0.20	**2.8**	**47**	**490**	**360**	**900**	<100	<100	<100
Duplicate	25-Oct-18	<0.20	**3.5**	**48**	**610**	**340**	**1,000**	<100	<100	<100
MW 401a	13-May-19	< 0.5	< 0.5	< 0.5	< 1.1	---	< 50	< 50	< 400	< 400
	27-Nov-19	< 0.5	< 0.5	< 0.5	< 1.1	---	< 50	< 50	< 400	< 400
MW 401b	13-May-19	< 0.5	< 0.5	< 0.5	< 1.1	---	< 50	< 50	< 400	< 400
Duplicate	13-May-19	< 0.5	< 0.5	< 0.5	< 1.1	---	< 50	< 50	< 400	< 400
	27-Nov-19	< 0.5	< 0.5	< 0.5	< 1.1	---	< 50	< 50	< 400	< 400
MW 401c	13-May-19	< 0.5	< 0.5	< 0.5	< 1.1	---	< 50	< 50	< 400	< 400
	27-Nov-19	< 0.5	< 0.5	< 0.5	< 1.1	---	< 50	< 50	< 400	< 400
MW 402a	13-May-19	< 0.5	< 0.5	< 0.5	< 1.1	---	< 50	< 50	< 400	< 400
	27-Nov-19	< 0.5	< 0.5	< 0.5	< 1.1	---	< 50	< 50	< 400	< 400
MW 402b	13-May-19	< 0.5	< 0.5	< 0.5	< 1.1	---	< 50	< 50	< 400	< 400
	27-Nov-19	< 0.5	< 0.5	< 0.5	< 1.1	---	< 50	< 50	< 400	< 400
MW 402c	13-May-19	< 0.5	< 0.5	< 0.5	< 1.1	---	< 50	< 50	< 400	< 400
	27-Nov-19	< 0.5	< 0.5	< 0.5	< 1.1	---	< 50	< 50	< 400	< 400
MW 403a	13-May-19	< 0.5	< 0.5	< 0.5	< 1.1	---	< 50	< 50	< 400	< 400
	27-Nov-19	< 0.5	< 0.5	< 0.5	< 1.1	---	< 50	< 50	< 400	< 400
MW 403b	13-May-19	< 0.5	< 0.5	< 0.5	< 1.1	---	< 50	**60**	< 400	< 400
	27-Nov-19	< 0.5	< 0.5	< 0.5	< 1.1	---	< 50	< 50	< 400	< 400
MW 403c	13-May-19	**0.60**	**3.7**	**18**	**43**	---	**510**	**1,040**	< 400	< 400
	27-Nov-19	< 0.5	< 0.5	< 0.5	< 1.1		< 50	< 50	< 400	< 400
MW 404a	07-Jun-19	< 0.5	**876**	**585**	**750**	**5,840**	**8,050**	**320**	< 400	< 400
	26-Nov-19	< 0.5	**19**	**113**	**1,220**	**---**	**2,280**	**180**	< 400	< 400
MW 404b	07-Jun-19	**2.7**	**1,190**	**1,210**	**1,490**	**17,700**	**21,500**	**1,760**	< 400	< 400
	26-Nov-19	**4.0**	**418**	**1,890**	**16,000**	**---**	**31,700**	**2,020**	< 400	< 400

Table 6

Ground and Surface Water Quality Analytical Results: Hydrocarbons

PROJECT NO.: 18-175		BTEX				HYDROCARBONS				
Borehole	Date (d-m-y)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	F1 (C_6-$C_{<10}$)-BTEX (µg/L)	F1 (C_6-$C_{<10}$) (µg/L)	F2 (C_{10}-$C_{<16}$) (µg/L)	F3 (C_{16}-$C_{<34}$) (µg/L)	F4 (C_{34}-C_{50}) (µg/L)
Table 1 (O.Reg. 153/04*)		**0.5**	**0.8**	**0.5**	**72**	**420**	**---**	**150**	**500**	**500**
Table 2 (O.Reg. 153/04)**		**5.0**	**24**	**2.4**	**300**	**750**	**---**	**150**	**500**	**500**
MW 404c	07-Jun-19	**4.0**	**881**	**447**	**3,080**	**5,810**	**10,200**	**1,810**	< 400	< 400
	26-Nov-19	**11**	**489**	**558**	**4,260**	**---**	**10,600**	**1,350**	< 400	< 400
MW 405a	14-May-19	< 0.5	< 0.5	< 0.5	< 1.1	---	< 50	< 50	< 400	< 400
	27-Nov-19	< 0.5	< 0.5	< 0.5	< 1.1	---	< 50	< 50	< 400	< 400
MW 406a	07-Jun-19	< 0.5	**1.2**	**1.3**	**33**	**2,740**	**2,780**	**1,620**	< 400	< 400
Duplicate	07-Jun-19	< 0.5	**1.8**	**2.2**	**37**	**2,650**	**2,700**	**2,270**	< 400	< 400
	26-Nov-19	< 0.5	**0.5**	< 0.5	**2.0**	**---**	**400**	**250**	< 400	< 400
MW 406b	07-Jun-19	**1.1**	**4.8**	**132**	**685**	**11,700**	**12,500**	**3,940**	< 400	< 400
	26-Nov-19	< 0.5	< 0.5	**5.7**	**62**	**---**	**5,400**	**1,390**	< 400	< 400
MW 406c	07-Jun-19	**1.9**	**2.4**	**105**	**280**	**6,860**	**7,250**	**600**	< 400	< 400
	26-Nov-19	< 0.5	**0.70**	**71**	**456**	**---**	**9,370**	**4,790**	< 400	< 400
MW 407a	14-May-19	< 0.5	< 0.5	< 0.5	< 1.1	---	< 50	< 50	< 400	< 400
	27-Nov-19	< 0.5	< 0.5	< 0.5	< 1.1	---	< 50	< 50	< 400	< 400
MW 407b	14-May-19	< 0.5	**1.1**	< 0.5	< 1.1	---	< 50	< 50	< 400	< 400
	27-Nov-19	< 0.5	< 0.5	< 0.5	< 1.1	---	< 50	< 50	< 400	< 400
MW 407c	14-May-19	< 0.5	< 0.5	< 0.5	< 1.1	---	< 50	< 50	< 400	< 400
	27-Nov-19	< 0.5	< 0.5	< 0.5	< 1.1	---	< 50	< 50	< 400	< 400
MW 408	14-May-19	< 0.5	< 0.5	< 0.5	< 1.1	---	< 50	< 50	< 400	< 400
	26-Nov-19	< 0.5	**0.50**	< 0.5	< 1.1	---	< 50	< 50	< 400	< 400

NOTES:

1. --- in guideline(s) row denotes no criteria, and in data row(s) indicates parameter not analyzed
2. Bold and red values indicate parameters above the Table 2 guidelines.
3. * denotes O.Reg. 153/04 Table 1 Full Depth Generic Site Condition Standards in a Potable Gound Water Condition for All Types of Property Use, for coarse grained soil guidelines
4. ** denotes O.Reg. 153/04 Table 2 Full Depth Generic Site Condition Standards in a Potable Gound Water Condition for All Types of Property Use, for coarse grained soil guidelines
5. Bold values indicate measurable parameters.

Table 7

Ground Water Quality Analytical Results: VOCs

PROJECT NO: 18-175

Monitoring Well	Date (d-m-y)	VOC Parameters																																		
		Dichlorodifluromethane (µg/L)	Vinyl Chloride (µg/L)	Bromomethane (µg/L)	Trichlorofluromethane (µg/L)	Acetone (µg/L)	1,1-Dichloroethene (µg/L)	Dichloromethane (methylene chloride) (µg/L)	trans-1,2-Dichloroethene (µ g/L)	Methyl tert-Butyl Ether (µg/L)	1,1-Dichloroethane (µg/L)	Methyl Ethyl Ketone (µg/L)	cis-1,2-Dichloroethene (µg/L)	Chloroform (µg/L)	1,2-Dichloroethane (µg/L)	1,1,1-Trichloroethane (µg/L)	Carbon Tetrachloride (µg/L)	1,2-Dichloropropane (µg/L)	Trichloroethene (µg/L)	Bromodichloromethane (µg/L)	Methyl Isobutyl Ketone (µg/L)	1,1,2-Trichloroethane (µg/L)	Dibromochloromethane (µg/L)	Ethylene Dibromide (µg/L)	Tetrachloroethene (µg/L)	1,1,1,2-Tetrachloroethane (µ g/L)	Chlorobenzene (µg/L)	Bromoform (µg/L)	Styrene (µg/L)	1,1,2,2-Tetrachloroethane (µg/L)	1,3-Dichlorobenzene (µg/L)	1,4-Dichlorobenzene (µg/L)	1,2-Dichlorobenzene (µg/L)	1,3-Dichloropropene (cis+trans) (µg/L)	n-Hexane (µg/L)
Table 1 (O.Reg. 153/04*)		**590**	**0.5**	**0.89**	**150**	**2700**	**0.5**	**5.0**	**1.6**	**15**	**0.5**	**400**	**1.6**	**2.0**	**0.5**	**0.5**	**0.2**	**0.5**	**0.5**	**2.0**	**640**	**0.5**	**2**	**0.2**	**0.5**	**1.1**	**0.5**	**5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**5**
Table 2 (O.Reg. 153/04)**		**590**	**0.5**	**0.89**	**150**	**2700**	**1.6**	**50**	**1.6**	**15**	**5.0**	**1800**	**1.6**	**2.4**	**1.6**	**200**	**0.79**	**5.0**	**1.6**	**16**	**640**	**4.7**	**25**	**0.2**	**1.6**	**1.1**	**30**	**25**	**5.4**	**1**	**59**	**1**	**3**	**0.5**	**51**
MW101	13-Feb-18	<2	<0.5	<0.5	<5	<30	<0.5	<5	<0.5	<2	<0.5	<20	<0.5	<1	<0.5	<0.5	<0.2	<0.5	<0.5	<0.2	<20	<0.5	<2	<0.2	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	26-Nov-19	< 2	< 0.2	< 0.5	< 5	< 30	< 0.5	< 5	< 0.5	< 2	< 0.5	< 20	< 0.5	< 1	< 0.5	< 0.5	< 0.2	< 0.5	< 0.5	< 2	< 20	< 0.5	< 2	< 0.2	< 0.5	< 0.5	< 0.5	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
Duplicate	26-Nov-19	< 2	< 0.2	< 0.5	< 5	< 30	< 0.5	< 5	< 0.5	< 2	< 0.5	< 20	< 0.5	< 1	< 0.5	< 0.5	< 0.2	< 0.5	< 0.5	< 2	< 20	< 0.5	< 2	< 0.2	< 0.5	< 0.5	< 0.5	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
MW102	13-Feb-18	<2	<0.5	<0.5	<5	<30	<0.5	<5	<0.5	<2	<0.5	<20	<0.5	<4.2	<0.5	<0.5	<0.2	<0.5	<0.5	<39	<20	<12	<2	<1.3	<0.5	<0.5	<0.5	<5	<0.5	<15	<10	<10	<10	<0.5	**16**
Duplicate	13-Feb-18	<2	<0.5	<0.5	<5	<30	<0.5	<5	<0.5	<2	<0.5	<20	<0.5	<6.6	<0.5	<0.5	<0.2	<0.5	<0.5	<42	<20	<1.5	<2	<2.6	<0.5	<0.5	<0.95	<5	<0.5	<29	<13	<13	<13	<0.5	**15**
MW103	13-Feb-18	<2	<0.5	<0.5	<5	<30	<0.5	<5	<0.5	<2	<0.5	<56	<2.5	<21	<0.5	<0.5	<0.2	<0.5	<0.5	<18	<20	<3.2	<2	<1.8	<0.5	<0.5	<0.5	<5	**1.1**	<4.4	<0.5	<0.5	<0.5	<1.0	**66**
MW105	13-Feb-18	<2	<0.5	<0.5	<5	<30	<0.5	<5	<0.5	<2	<0.5	<20	<0.5	<1	<0.5	<0.5	<0.2	<0.5	<0.5	<0.2	<20	<0.5	<2	<0.2	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	25-Oct-18	<0.20	<0.17	<0.20	<0.40	<1.0	<0.30	<0.30	<0.20	<0.20	<0.30	<1.0	<0.20	<0.20	<0.20	<0.30	<0.20	<0.20	<0.20	<0.20	<1.0	<0.20	<0.10	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.30	<0.20
MW205	24-Oct-18	<0.20	<0.17	<0.20	<0.40	<1.0	<0.30	<0.30	<0.20	<0.20	<0.30	<1.0	<0.20	<0.20	<0.20	<0.30	<0.20	<0.20	<0.20	<0.20	<1.0	<0.20	<0.10	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.30	**0.92**
MW304	26-Oct-18	<0.20	<0.17	<0.20	<0.40	<1.0	<0.30	<0.30	<0.20	<0.20	<0.30	<1.0	<0.20	<0.20	<0.20	<0.30	<0.20	<0.20	<0.20	<0.20	**3.7**	<0.20	<0.10	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.30	**0.77**
	26-Nov-19	< 2	< 0.2	< 0.5	< 5	< 30	< 0.5	< 5	< 0.5	< 2	< 0.5	< 20	< 0.5	< 1	< 0.5	< 0.5	< 0.2	< 0.5	< 0.5	< 2	< 20	< 0.5	< 2	< 0.2	< 0.5	< 0.5	< 0.5	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
MW305	25-Oct-18	<0.20	<0.17	<0.20	<0.40	<1.0	<0.30	<0.30	<0.20	<0.20	<0.30	<1.0	<0.20	<0.20	<0.20	<0.30	<0.20	<0.20	<0.20	<0.20	**5.9**	<0.20	<0.10	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.30	**0.74**
MW308	25-Oct-18	<0.20	<0.17	<0.20	<0.40	<1.0	<0.30	<0.30	<0.20	<0.20	<0.30	<1.0	<0.20	<0.20	<0.20	<0.30	<0.20	<0.20	<0.20	<0.20	<1.0	<0.20	<0.10	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.30	**1.1**
	26-Nov-19	< 2	< 0.2	< 0.5	< 5	< 30	< 0.5	< 5	< 0.5	< 2	< 0.5	< 20	< 0.5	< 1	< 0.5	< 0.5	< 0.2	< 0.5	< 0.5	< 2	< 20	< 0.5	< 2	< 0.2	< 0.5	< 0.5	< 0.5	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
Duplicate	26-Nov-19	< 2	< 0.2	< 0.5	< 5	< 30	< 0.5	< 5	< 0.5	< 2	< 0.5	< 20	< 0.5	< 1	< 0.5	< 0.5	< 0.2	< 0.5	< 0.5	< 2	< 20	< 0.5	< 2	< 0.2	< 0.5	< 0.5	< 0.5	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
MW309	25-Oct-18	<0.20	<0.17	<0.20	<0.40	<1.0	<0.30	<0.30	<0.20	<0.20	<0.30	<1.0	<0.20	<0.20	<0.20	<0.30	<0.20	<0.20	<0.20	<0.20	<1.0	<0.20	<0.10	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.30	**7.1**
Duplicate	25-Oct-18	<0.20	<0.17	<0.20	<0.40	<1.0	<0.30	<0.30	<0.20	<0.20	<0.30	<1.0	<0.20	<0.20	<0.20	<0.30	<0.20	<0.20	<0.20	<0.20	<1.0	<0.20	<0.10	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.30	**5.5**
MW 401a	13-May-19	< 2	< 0.2	< 0.5	< 5	< 30	< 0.5	< 5	< 0.5	< 2	< 0.5	< 20	< 0.5	< 1	< 0.5	< 0.5	< 0.2	< 0.5	< 0.5	< 2	< 20	< 0.5	< 2	< 0.2	< 0.5	< 0.5	< 0.5	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
	27-Nov-19	< 2	< 0.2	< 0.5	< 5	< 30	< 0.5	< 5	< 0.5	< 2	< 0.5	< 20	< 0.5	< 1	< 0.5	< 0.5	< 0.2	< 0.5	< 0.5	< 2	< 20	< 0.5	< 2	< 0.2	< 0.5	< 0.5	< 0.5	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
MW 401b	13-May-19	< 2	< 0.2	< 0.5	< 5	< 30	< 0.5	< 5	< 0.5	< 2	< 0.5	< 20	< 0.5	< 1	< 0.5	< 0.5	< 0.2	< 0.5	< 0.5	< 2	< 20	< 0.5	< 2	< 0.2	**1.3**	< 0.5	< 0.5	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
Duplicate	13-May-19	< 2	< 0.2	< 0.5	< 5	< 30	< 0.5	< 5	< 0.5	< 2	< 0.5	< 20	< 0.5	< 1	< 0.5	< 0.5	< 0.2	< 0.5	< 0.5	< 2	< 20	< 0.5	< 2	< 0.2	**1.2**	< 0.5	< 0.5	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
	27-Nov-19	< 2	< 0.2	< 0.5	< 5	< 30	< 0.5	< 5	< 0.5	< 2	< 0.5	< 20	< 0.5	< 1	< 0.5	< 0.5	< 0.2	< 0.5	< 0.5	< 2	< 20	< 0.5	< 2	< 0.2	< 0.5	< 0.5	< 0.5	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
MW 401c	13-May-19	< 2	< 0.2	< 0.5	< 5	< 30	< 0.5	< 5	< 0.5	< 2	< 0.5	< 20	< 0.5	< 1	< 0.5	< 0.5	< 0.2	< 0.5	< 0.5	< 2	< 20	< 0.5	< 2	< 0.2	< 0.5	< 0.5	< 0.5	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
	27-Nov-19	< 2	< 0.2	< 0.5	< 5	< 30	< 0.5	< 5	< 0.5	< 2	< 0.5	< 20	< 0.5	< 1	< 0.5	< 0.5	< 0.2	< 0.5	< 0.5	< 2	< 20	< 0.5	< 2	< 0.2	< 0.5	< 0.5	< 0.5	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
MW 402a	13-May-19	< 2	< 0.2	< 0.5	< 5	< 30	< 0.5	< 5	< 0.5	< 2	< 0.5	< 20	< 0.5	< 1	< 0.5	< 0.5	< 0.2	< 0.5	< 0.5	< 2	< 20	< 0.5	< 2	< 0.2	< 0.5	< 0.5	< 0.5	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
	27-Nov-19	< 2	< 0.2	< 0.5	< 5	< 30	< 0.5	< 5	< 0.5	< 2	< 0.5	< 20	< 0.5	< 1	< 0.5	< 0.5	< 0.2	< 0.5	< 0.5	< 2	< 20	< 0.5	< 2	< 0.2	< 0.5	< 0.5	< 0.5	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
MW 402b	13-May-19	< 2	< 0.2	< 0.5	< 5	< 30	< 0.5	< 5	< 0.5	< 2	< 0.5	< 20	< 0.5	< 1	< 0.5	< 0.5	< 0.2	< 0.5	< 0.5	< 2	< 20	< 0.5	< 2	< 0.2	< 0.5	< 0.5	< 0.5	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
	27-Nov-19	< 2	< 0.2	< 0.5	< 5	< 30	< 0.5	< 5	< 0.5	< 2	< 0.5	< 20	< 0.5	< 1	< 0.5	< 0.5	< 0.2	< 0.5	< 0.5	< 2	< 20	< 0.5	< 2	< 0.2	< 0.5	< 0.5	< 0.5	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
MW 402c	13-May-19	< 2	< 0.2	< 0.5	< 5	< 30	< 0.5	< 5	< 0.5	< 2	< 0.5	< 20	< 0.5	< 1	< 0.5	< 0.5	< 0.2	< 0.5	< 0.5	< 2	< 20	< 0.5	< 2	< 0.2	< 0.5	< 0.5	< 0.5	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
	27-Nov-19	< 2	< 0.2	< 0.5	< 5	< 30	< 0.5	< 5	< 0.5	< 2	< 0.5	< 20	< 0.5	< 1	< 0.5	< 0.5	< 0.2	< 0.5	< 0.5	< 2	< 20	< 0.5	< 2	< 0.2	< 0.5	< 0.5	< 0.5	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
MW 403a	13-May-19	< 2	< 0.2	< 0.5	< 5	< 30	< 0.5	< 5	< 0.5	< 2	< 0.5	< 20	< 0.5	< 1	< 0.5	< 0.5	< 0.2	< 0.5	< 0.5	< 2	< 20	< 0.5	< 2	< 0.2	< 0.5	< 0.5	< 0.5	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5

Table 7

Ground Water Quality Analytical Results: VOCs

PROJECT NO: 18-175

Monitoring Well	Date (d-m-y)	VOC Parameters																																		
		Dichlorodifluromethane (µg/L)	Vinyl Chloride (µg/L)	Bromomethane (µg/L)	Trichlorofluromethane (µg/L)	Acetone (µg/L)	1,1-Dichloroethene (µg/L)	Dichloromethane (methylene chloride) (µg/L)	trans-1,2-Dichloroethene (µ g/L)	Methyl tert-Butyl Ether (µg/L)	1,1-Dichloroethane (µg/L)	Methyl Ethyl Ketone (µg/L)	cis-1,2-Dichloroethene (µg/L)	Chloroform (µg/L)	1,2-Dichloroethane (µg/L)	1,1,1-Trichloroethane (µg/L)	Carbon Tetrachloride (µg/L)	1,2-Dichloropropane (µg/L)	Trichloroethene (µg/L)	Bromodichloromethane (µg/L)	Methyl Isobutyl Ketone (µg/L)	1,1,2-Trichloroethane (µg/L)	Dibromochloromethane (µg/L)	Ethylene Dibromide (µg/L)	Tetrachloroethene (µg/L)	1,1,1,2-Tetrachloroethane (µ g/L)	Chlorobenzene (µg/L)	Bromoform (µg/L)	Styrene (µg/L)	1,1,2,2-Tetrachloroethane (µg/L)	1,3-Dichlorobenzene (µg/L)	1,4-Dichlorobenzene (µg/L)	1,2-Dichlorobenzene (µg/L)	1,3-Dichloropropene (cis+trans) (µg/L)	n-Hexane (µg/L)
Table 1 (O.Reg. 153/04*)		**590**	**0.5**	**0.89**	**150**	**2700**	**0.5**	**5.0**	**1.6**	**15**	**0.5**	**400**	**1.6**	**2.0**	**0.5**	**0.5**	**0.2**	**0.5**	**0.5**	**2.0**	**640**	**0.5**	**2**	**0.2**	**0.5**	**1.1**	**0.5**	**5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**5**
Table 2 (O.Reg. 153/04)**		**590**	**0.5**	**0.89**	**150**	**2700**	**1.6**	**50**	**1.6**	**15**	**5.0**	**1800**	**1.6**	**2.4**	**1.6**	**200**	**0.79**	**5.0**	**1.6**	**16**	**640**	**4.7**	**25**	**0.2**	**1.6**	**1.1**	**30**	**25**	**5.4**	**1**	**59**	**1**	**3**	**0.5**	**51**
	27-Nov-19	< 2	< 0.2	< 0.5	< 5	< 30	< 0.5	< 5	< 0.5	< 2	< 0.5	< 20	< 0.5	< 1	< 0.5	< 0.5	< 0.2	< 0.5	< 0.5	< 2	< 20	< 0.5	< 2	< 0.2	< 0.5	< 0.5	< 0.5	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
MW 403b	13-May-19	< 2	< 0.2	< 0.5	< 5	< 30	< 0.5	< 5	< 0.5	< 2	< 0.5	< 20	< 0.5	< 1	< 0.5	< 0.5	< 0.2	< 0.5	< 0.5	< 2	< 20	< 0.5	< 2	< 0.2	< 0.5	< 0.5	< 0.5	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
	27-Nov-19	< 2	< 0.2	< 0.5	< 5	< 30	< 0.5	< 5	< 0.5	< 2	< 0.5	< 20	< 0.5	< 1	< 0.5	< 0.5	< 0.2	< 0.5	< 0.5	< 2	< 20	< 0.5	< 2	< 0.2	< 0.5	< 0.5	< 0.5	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
MW 403c	13-May-19	< 2	< 0.2	< 0.5	< 5	< 30	< 0.5	< 5	< 0.5	< 2	< 0.5	< 20	< 0.5	< 1	< 0.5	< 0.5	< 0.2	< 0.5	< 0.5	< 2	< 20	< 0.5	< 2	< 0.2	< 0.5	< 0.5	< 0.5	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
	27-Nov-19	< 2	< 0.2	< 0.5	< 5	< 30	< 0.5	< 5	< 0.5	< 2	< 0.5	< 20	< 0.5	< 1	< 0.5	< 0.5	< 0.2	< 0.5	< 0.5	< 2	< 20	< 0.5	< 2	< 0.2	< 0.5	< 0.5	< 0.5	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
MW 404a	07-Jun-19	< 2	< 0.2	< 0.5	< 5	< 30	< 0.5	< 5	< 0.5	< 2	< 0.5	< 20	< 0.5	< 1	< 0.5	< 0.5	< 0.2	< 0.5	< 0.5	< 2	< 20	< 0.5	< 2	< 0.2	< 0.5	**2,960**	< 0.5	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**5.0**
	26-Nov-19	< 2	< 0.2	< 0.5	< 5	< 30	< 0.5	< 5	< 0.5	< 2	< 0.5	< 20	< 0.5	< 1	< 0.5	< 0.5	< 0.2	< 0.5	< 0.5	< 2	< 20	< 0.5	< 2	< 0.2	< 0.5	< 0.5	< 0.5	< 5	**1.7**	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**9.0**
MW 404b	07-Jun-19	< 2	< 0.2	< 0.5	< 5	< 30	< 0.5	< 5	< 0.5	< 2	< 0.5	< 20	< 0.5	< 1	< 0.5	< 0.5	< 0.2	< 0.5	< 0.5	< 2	< 20	< 0.5	< 2	< 0.2	< 0.5	**6,980**	< 0.5	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**16**
	26-Nov-19	< 2	< 0.2	< 0.5	< 5	< 30	< 0.5	< 5	< 0.5	< 2	< 0.5	**50**	< 0.5	< 1	< 0.5	< 0.5	< 0.2	< 0.5	< 0.5	< 2	< 20	< 0.5	< 2	< 0.2	< 0.5	< 0.5	< 0.5	< 5	**47**	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**119**
MW 404c	07-Jun-19	< 2	< 0.2	< 0.5	< 5	< 30	< 0.5	< 5	< 0.5	< 2	< 0.5	< 20	< 0.5	< 1	< 0.5	< 0.5	< 0.2	< 0.5	< 0.5	< 2	< 20	< 0.5	< 2	< 0.2	< 0.5	< 0.5	< 0.5	< 5	**6.0**	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
	26-Nov-19	< 2	< 0.2	< 0.5	< 5	< 30	< 0.5	< 5	< 0.5	< 2	< 0.5	< 20	< 0.5	< 1	< 0.5	< 0.5	< 0.2	< 0.5	< 0.5	< 2	< 20	< 0.5	< 2	< 0.2	< 0.5	< 0.5	< 0.5	< 5	**13**	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**8.0**
MW 405a	14-May-19	< 2	< 0.2	< 0.5	< 5	< 30	< 0.5	< 5	< 0.5	< 2	< 0.5	< 20	< 0.5	< 1	< 0.5	< 0.5	< 0.2	< 0.5	< 0.5	< 2	< 20	< 0.5	< 2	< 0.2	< 0.5	< 0.5	< 0.5	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
	27-Nov-19	< 2	< 0.2	< 0.5	< 5	< 30	< 0.5	< 5	< 0.5	< 2	< 0.5	< 20	< 0.5	< 1	< 0.5	< 0.5	< 0.2	< 0.5	< 0.5	< 2	< 20	< 0.5	< 2	< 0.2	< 0.5	< 0.5	< 0.5	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
MW 406a	07-Jun-19	< 2	< 0.2	< 0.5	< 5	< 30	< 0.5	< 5	< 0.5	< 2	< 0.5	< 20	< 0.5	< 1	< 0.5	< 0.5	< 0.2	< 0.5	< 0.5	< 2	< 20	< 0.5	< 2	< 0.2	< 0.5	< 0.5	< 0.5	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**6.0**
Duplicate	07-Jun-19	< 2	< 0.2	< 0.5	< 5	< 30	< 0.5	< 5	< 0.5	< 2	< 0.5	< 20	< 0.5	< 1	< 0.5	< 0.5	< 0.2	< 0.5	< 0.5	< 2	< 20	< 0.5	< 2	< 0.2	< 0.5	< 0.5	< 0.5	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**5.0**
	26-Nov-19	< 2	< 0.2	< 0.5	< 5	< 30	< 0.5	< 5	< 0.5	< 2	< 0.5	< 20	< 0.5	< 1	< 0.5	< 0.5	< 0.2	< 0.5	< 0.5	< 2	< 20	< 0.5	< 2	< 0.2	< 0.5	< 0.5	< 0.5	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
MW 406b	07-Jun-19	< 2	< 0.2	< 0.5	< 5	< 30	< 0.5	< 5	< 0.5	< 2	< 0.5	**30**	< 0.5	< 1	< 0.5	< 0.5	< 0.2	< 0.5	< 0.5	< 2	< 20	< 0.5	< 2	< 0.2	< 0.5	< 0.5	< 0.5	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**35**
	26-Nov-19	< 2	< 0.2	< 0.5	< 5	< 30	< 0.5	< 5	< 0.5	< 2	< 0.5	< 20	< 0.5	< 1	< 0.5	< 0.5	< 0.2	< 0.5	< 0.5	< 2	< 20	< 0.5	< 2	< 0.2	< 0.5	< 0.5	< 0.5	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**13**
MW 406c	07-Jun-19	< 2	< 0.2	< 0.5	< 5	< 30	< 0.5	< 5	< 0.5	< 2	< 0.5	< 20	< 0.5	< 1	< 0.5	< 0.5	< 0.2	< 0.5	< 0.5	< 2	< 20	< 0.5	< 2	< 0.2	< 0.5	< 0.5	< 0.5	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
	26-Nov-19	< 2	< 0.2	< 0.5	< 5	< 30	< 0.5	< 5	< 0.5	< 2	< 0.5	**30**	< 0.5	< 1	< 0.5	< 0.5	< 0.2	< 0.5	< 0.5	< 2	< 20	< 0.5	< 2	< 0.2	< 0.5	< 0.5	< 0.5	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**67**
MW 407a	14-May-19	< 2	< 0.2	< 0.5	< 5	< 30	< 0.5	< 5	< 0.5	< 2	< 0.5	< 20	< 0.5	< 1	< 0.5	< 0.5	< 0.2	< 0.5	< 0.5	< 2	< 20	< 0.5	< 2	< 0.2	< 0.5	< 0.5	< 0.5	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
	27-Nov-19	< 2	< 0.2	< 0.5	< 5	< 30	< 0.5	< 5	< 0.5	< 2	< 0.5	< 20	< 0.5	< 1	< 0.5	< 0.5	< 0.2	< 0.5	< 0.5	< 2	< 20	< 0.5	< 2	< 0.2	< 0.5	< 0.5	< 0.5	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
MW 407b	14-May-19	< 2	< 0.2	< 0.5	< 5	< 30	< 0.5	< 5	< 0.5	< 2	< 0.5	< 20	< 0.5	< 1	< 0.5	< 0.5	< 0.2	< 0.5	< 0.5	< 2	< 20	< 0.5	< 2	< 0.2	< 0.5	< 0.5	< 0.5	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
	27-Nov-19	< 2	< 0.2	< 0.5	< 5	< 30	< 0.5	< 5	< 0.5	< 2	< 0.5	< 20	< 0.5	< 1	< 0.5	< 0.5	< 0.2	< 0.5	< 0.5	< 2	< 20	< 0.5	< 2	< 0.2	< 0.5	< 0.5	< 0.5	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
MW 407c	14-May-19	< 2	< 0.2	< 0.5	< 5	< 30	< 0.5	< 5	< 0.5	< 2	< 0.5	< 20	< 0.5	< 1	< 0.5	< 0.5	< 0.2	< 0.5	< 0.5	< 2	< 20	< 0.5	< 2	< 0.2	< 0.5	< 0.5	< 0.5	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
	27-Nov-19	< 2	< 0.2	< 0.5	< 5	< 30	< 0.5	< 5	< 0.5	< 2	< 0.5	< 20	< 0.5	< 1	< 0.5	< 0.5	< 0.2	< 0.5	< 0.5	< 2	< 20	< 0.5	< 2	< 0.2	< 0.5	< 0.5	< 0.5	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
MW 408	14-May-19	< 2	< 0.2	< 0.5	< 5	< 30	< 0.5	< 5	< 0.5	< 2	< 0.5	< 20	< 0.5	< 1	< 0.5	< 0.5	< 0.2	< 0.5	< 0.5	< 2	< 20	< 0.5	< 2	< 0.2	< 0.5	< 0.5	< 0.5	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5
	26-Nov-19	< 2	< 0.2	< 0.5	< 5	< 30	< 0.5	< 5	< 0.5	< 2	< 0.5	< 20	< 0.5	< 1	< 0.5	< 0.5	< 0.2	< 0.5	< 0.5	< 2	< 20	< 0.5	< 2	< 0.2	< 0.5	< 0.5	< 0.5	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5

NOTES:

1. *--- in guideline(s) row denotes no criteria, and in data row(s) indicates parameter not analyzed.*
2. *Bold values indicate parameters above the Table 2 guidelines.*
3. ** denotes O.Reg. 153/04 Table 1 Full Depth Generic Site Condition Standards in a Potable Ground Water Condition in*

Table 7

Ground Water Quality Analytical Results: VOCs

PROJECT NO: 18-175

Monitoring Well	Date (d-m-y)	VOC Parameters																																		
		Dichlorodifluromethane (µg/L)	Vinyl Chloride (µg/L)	Bromomethane (µg/L)	Trichlorofluromethane (µg/L)	Acetone (µg/L)	1,1-Dichloroethene (µg/L)	Dichloromethane (methylene chloride) (µg/L)	trans-1,2-Dichloroethene (µ g/L)	Methyl tert-Butyl Ether (µg/L)	1,1-Dichloroethane (µg/L)	Methyl Ethyl Ketone (µg/L)	cis-1,2-Dichloroethene (µg/L)	Chloroform (µg/L)	1,2-Dichloroethane (µg/L)	1,1,1-Trichloroethane (µg/L)	Carbon Tetrachloride (µg/L)	1,2-Dichloropropane (µg/L)	Trichloroethene (µg/L)	Bromodichloromethane (µg/L)	Methyl Isobutyl Ketone (µg/L)	1,1,2-Trichloroethane (µg/L)	Dibromochloromethane (µg/L)	Ethylene Dibromide (µg/L)	Tetrachloroethene (µg/L)	1,1,1,2-Tetrachloroethane (µ g/L)	Chlorobenzene (µg/L)	Bromoform (µg/L)	Styrene (µg/L)	1,1,2,2-Tetrachloroethane (µg/L)	1,3-Dichlorobenzene (µg/L)	1,4-Dichlorobenzene (µg/L)	1,2-Dichlorobenzene (µg/L)	1,3-Dichloropropene (cis+trans) (µg/L)	n-Hexane (µg/L)
Table 1 (O.Reg. 153/04*)		590	0.5	0.89	150	2700	0.5	5.0	1.6	15	0.5	400	1.6	2.0	0.5	0.5	0.2	0.5	0.5	2.0	640	0.5	2	0.2	0.5	1.1	0.5	5	0.5	0.5	0.5	0.5	0.5	0.5	5
Table 2 (O.Reg. 153/04)**		590	0.5	0.89	150	2700	1.6	50	1.6	15	5.0	1800	1.6	2.4	1.6	200	0.79	5.0	1.6	16	640	4.7	25	0.2	1.6	1.1	30	25	5.4	1	59	1	3	0.5	51

Coarse Grained Soils, for All Types of Property Use.

4. ** denotes O.Reg. 153/04 Table 2 Full Depth Generic Site Condition Standards in a Potable Ground Water Condition in Coarse Grained Soils, for All Types of Property Use.

Table 8

Ground and Surface Water Quality Analtyical Results: Trace Metals

PROJECT NO: 18-175		Inorganics				Dissolved Metal Parameters																				
Borehole	Date Sampled (d-m-y)	pH	Electrical Conductivity mS/cm	Chloride (µg/L)	Sodium (µg/L)	Total Ammonia (as Nitrogen) (mg/L)	Antimony (µg/L)	Arsenic (µg/L)	Barium (µg/L)	Beryllium (µg /L)	Boron (µg/L)	Cadmium (µg/L)	Chromium (µg/L)	Chromium (VI) (µg/L)	Cobalt (µg/L)	Copper (µg/L)	Cyanide (µg/L)	Lead (µg/L)	Mercury (µg/L)	Molybdenum (µg/L)	Nickel (µg/L)	Selenium (µg/L)	Silver (µg/L)	Thallium (µg/L)	Uranium (µg/L)	Vanadium (µg/L)	Zinc (µg/L)
Table 1 (O.Reg. 153/04*)		**N/A**	**N/A**	**790,000**	**NV**	**N/A**	**1.5**	**13**	**610**	**0.5**	**1,700**	**0.5**	**11**	**NV**	**3.8**	**5.0**	**5.0**	**1.9**	**0.2**	**23**	**14**	**5.0**	**0.3**	**0.5**	**8.9**	**3.9**	**160**
Table 2 (O.Reg. 153/04)**		**N/A**	**N/A**	**790,000**	**490,000**	**N/A**	**6.0**	**25**	**1,000**	**4.0**	**5,000**	**2.7**	**25**	**25**	**3.8**	**87**	**66**	**10**	**0.29**	**70**	**100**	**10.0**	**1.5**	**2.0**	**20**	**6.2**	**1,100**
MW101	26-Nov-19	**7.8**	**2.1**	---	**208,000**	**24**	< 0.2	< 0.2	**389**	< 0.2	**74**	< 0.028	< 2	< 10	**0.40**	< 2	< 5	< 0.04	< 0.02	0.2	< 10	< 2	< 0.1	< 0.1	**0.4**	**0.3**	< 5
Duplicate	26-Nov-19	**7.9**	**2.0**	---	**210,000**	**22**	< 0.1	0.1	**383**	< 0.1	**75**	< 0.015	< 2	< 10	**0.40**	< 2	< 5	< 0.02	< 0.02	0.2	< 10	< 1	< 0.1	< 0.05	**0.4**	**0.4**	< 5
MW102	13-Feb-18	**7.2**	**1.3**	**135,000**	**112,000**	---	<0.10	**0.41**	**232**	<0.10	**77**	<0.01	<0.05	<1.0	**2.6**	**0.62**	<2.0	**0.21**	<0.01	**1.4**	**2.1**	**2.2**	<0.05	<0.01	**1.2**	**0.82**	**1.7**
Duplicate	13-Feb-18	**7.4**	**1.3**	**155,000**	**101,000**	---	<0.10	**0.46**	**236**	<0.10	**76**	<0.01	<0.05	<1.0	**2.6**	**1.4**	<2.0	**0.27**	<0.01	**1.4**	**2.1**	**2.0**	<0.05	<0.01	**1.2**	**0.84**	**3.0**
MW103	13-Feb-18	**7.6**	**2.9**	**730,000**	**398,000**	---	<1.0	<1.0	**358**	<1.0	<100	**0.14**	<5.0	<1.0	**1.5**	<2.0	<2.0	**4.0**	<0.01	**1.7**	<5.0	**0.70**	<0.05	<0.01	**2.3**	<5.0	<10
MW202	25-Oct-18	---	---	---	---	---	<1.0	<1.0	**208**	<0.5	**68**	<0.2	<2.0	---	<0.5	**4.2**	---	**1.0**	---	<0.5	**1.4**	**3.6**	<0.2	<0.3	**0.8**	<0.4	<5.0
MW203	25-Oct-18	---	---	---	---	---	<1.0	<1.0	**324**	<0.5	**99**	<0.2	<2.0	---	<0.5	**3.1**	---	<0.5	---	**1.0**	<1.0	**2.1**	<0.2	<0.3	**1.9**	<0.4	**6.2**
MW205	24-Oct-18	---	---	---	---	---	<1.0	**1.6**	**305**	<0.5	**100**	<0.2	**4.3**	---	<0.5	**4.1**	---	**0.60**	---	**2.1**	<1.0	**2.7**	<0.2	<0.3	**2.5**	**1.2**	<5.0
MW304	26-Oct-18	---	---	---	---	---	<1.0	**2.0**	**649**	<0.5	**803**	<0.2	<2.0	---	**0.70**	**2.2**	---	<0.5	---	**3.0**	**1.6**	**7.4**	<0.2	<0.3	**2.1**	**2.4**	**5.2**
	13-May-19	**7.8**	**2.8**	---	**442,000**	---	<0.1	**0.10**	**295**	<0.1	**36**	<0.015	<2	<10	<0.1	<2	---	**0.22**	<0.02	**3.6**	**0.50**	**1.0**	<0.1	<0.05	**1.5**	**0.40**	<5
	26-Nov-19	**8.0**	**3.0**	---	**477,000**	**0.09**	< 0.5	< 0.5	**297**	< 0.5	**38**	< 0.070	< 2	< 10	< 0.5	< 2	< 5	< 0.1	< 0.02	**1.4**	< 10	< 5	< 0.1	< 0.3	**1.7**	< 0.5	< 5
MW305	13-May-19	**7.8**	**2.2**	---	**260,000**	---	**0.2**	**3.3**	**184**	<0.1	**31**	<0.015	<2	<10	**0.3**	<2	---	**0.31**	**0.03**	**1.5**	**1.2**	<1	<0.1	<0.05	**1.0**	**0.80**	<5
	26-Nov-19	**8.0**	**2.3**	---	**272,000**	---	< 0.5	**2.3**	**161**	< 0.5	**31**	< 0.070	< 2	< 10	< 0.5	< 2	< 5	**0.17**	< 0.02	**0.70**	< 10	< 5	< 0.1	< 0.3	**0.32**	< 0.5	< 5
MW308	25-Oct-18	---	---	---	---	---	<1.0	<1.0	**465**	<0.5	**57**	<0.2	<2.0	---	**0.60**	**3.9**	---	**1.6**	---	**1.8**	**1.8**	<1.0	<0.2	<0.3	**2.0**	<0.4	**12**
	13-May-19	**7.8**	**2.9**	---	**444,000**	---	<0.1	<0.1	**359**	<0.1	**40**	<0.015	**2.0**	<10	<0.1	<2	---	**0.04**	<0.02	**0.70**	**0.50**	**2.0**	<0.1	<0.05	**2.2**	**0.30**	<5
	26-Nov-19	**8.0**	**2.9**	---	**436,000**	---	< 0.5	< 0.5	**313**	< 0.5	**46**	< 0.070	< 2	< 10	< 0.5	< 2	< 5	< 0.1	< 0.02	**1.4**	< 10	< 5	< 0.1	< 0.3	**1.8**	< 0.5	< 5
Duplicate	26-Nov-19	**8.0**	**2.9**	---	**431,000**	---	< 0.5	< 0.5	**313**	< 0.5	**45**	< 0.070	< 2	< 10	< 0.5	< 2	< 5	< 0.1	< 0.02	**1.2**	< 10	< 5	< 0.1	< 0.3	**1.7**	< 0.5	< 5
MW309	25-Oct-18	---	---	---	---	---	<1.0	<1.0	**262**	<0.5	**50**	<0.2	<2.0	---	<0.5	**3.1**	---	**0.50**	---	**5.4**	**1.6**	**1.5**	<0.2	<0.3	**2.5**	<0.4	**6.0**
Duplicate	25-Oct-18	---	---	---	---	---	<1.0	<1.0	**247**	<0.5	**46**	<0.2	<2.0	---	<0.5	**1.0**	---	<0.5	---	**5.6**	**1.6**	**1.6**	<0.2	<0.3	**2.5**	<0.4	<5.0
MW 401a	13-May-19	**7.7**	**2.1**	---	**273,000**	---	**0.10**	**0.30**	**291**	<0.1	**35**	<0.015	<2	<10	**0.20**	<2	---	**0.06**	<0.02	**0.5**	**1.0**	<1	<0.1	<0.05	**1.6**	**0.50**	<5
	27-Nov-19	**7.9**	**2.6**	---	**320,000**	**0.17**	< 0.5	< 0.5	**372**	< 0.5	**40**	< 0.070	**2.0**	< 10	< 0.5	< 2	< 5	< 0.1	< 0.02	< 0.5	< 10	< 5	< 0.1	< 0.3	**1.1**	< 0.5	< 5
MW 401b	13-May-19	**7.7**	**2.8**	---	**433,000**	---	<0.1	0.2	**282**	<0.1	**47**	**0.02**	**2.0**	<10	**0.30**	<2	---	**0.33**	<0.02	**2.5**	**0.90**	**2.0**	<0.1	<0.05	**1.9**	**0.50**	<5
Duplicate	13-May-19	**7.7**	**2.7**	---	**434,000**	---	<0.1	0.2	**284**	<0.1	**46**	**0.02**	**2.0**	<10	**0.40**	<2	---	**0.13**	<0.02	**2.4**	**1.0**	**2.0**	<0.1	<0.05	**1.9**	**0.70**	<5
	27-Nov-19	**8.1**	**2.3**	---	**420,000**	**0.08**	< 0.2	< 0.2	**123**	< 0.2	**49**	< 0.028	< 2	< 10	< 0.2	< 2	< 5	**0.06**	< 0.02	**5.7**	< 10	< 2	< 0.1	< 0.1	**1.6**	**0.60**	< 5
MW 401c	13-May-19	**7.7**	**3.5**	---	**630,000**	---	<0.1	**0.20**	**246**	<0.1	**66**	**0.02**	**2.0**	<10	**0.30**	<2	---	**0.11**	**0.03**	**3.4**	**0.80**	**2.0**	<0.1	<0.05	**2.8**	**0.80**	<5
	27-Nov-19	**7.9**	**3.6**	---	**482,000**	**0.08**	< 0.5	< 0.5	**262**	< 0.5	**44**	< 0.070	< 2	< 10	< 0.5	< 2	< 5	< 0.1	**< 0.02**	**3.0**	< 10	< 5	< 0.1	< 0.3	**2.0**	< 0.5	< 5
MW 402a	13-May-19	**7.7**	**2.0**	---	**252,000**	---	**0.10**	**0.30**	**267**	<0.1	**32**	**0.02**	<2	<10	**0.20**	<2	---	**0.10**	<0.02	**0.70**	**1.0**	<1	<0.1	<0.05	**1.9**	**0.60**	<5
	27-Nov-19	**8.0**	**2.2**	---	**279,000**	---	< 0.2	< 0.2	**352**	< 0.2	**36**	< 0.028	< 2	< 10	< 0.2	< 2	< 5	< 0.04	< 0.02	< 0.2	< 10	< 2	< 0.1	< 0.1	**1.3**	**0.30**	< 5
MW 402b	13-May-19	**7.7**	**3.3**	---	**500,000**	---	**0.20**	**0.30**	**337**	<0.1	**50**	**0.04**	**2.0**	<10	**0.30**	<2	---	**0.64**	<0.02	**3.1**	**1.5**	**2.0**	<0.1	<0.05	**2.5**	**0.40**	<5
	27-Nov-19	**8.0**	**3.7**	---	**568,000**	---	< 0.5	< 0.5	**493**	< 0.5	**53**	< 0.070	< 2	< 10	< 0.5	< 2	< 5	**0.22**	< 0.02	**2.9**	< 10	< 5	< 0.1	< 0.3	**2.0**	< 0.5	< 5
MW 402c	13-May-19	**7.7**	**3.2**	---	**487,000**	---	**0.10**	**0.20**	**361**	<0.1	**60**	**0.03**	**2.0**	<10	**0.20**	<2	---	**0.25**	<0.02	**1.9**	**1.1**	**3.0**	<0.1	<0.05	**2.2**	**0.60**	<5
	27-Nov-19	**7.9**	**3.7**	---	**450,000**	---	< 0.5	< 0.5	**490**	< 0.5	**49**	< 0.070	< 2	< 10	< 0.5	< 2	< 5	< 0.1	< 0.02	**0.80**	< 10	< 5	< 0.1	< 0.3	**2.2**	< 0.5	**20**
MW 403a	13-May-19	**7.7**	**2.3**	---	**310,000**	---	**0.10**	**0.20**	**243**	<0.1	**36**	<0.015	<2	<10	**0.30**	<2	---	**0.05**	<0.02	**1.0**	**1.1**	<1	<0.1	<0.05	**1.7**	**0.40**	<5
	27-Nov-19	**8.0**	**2.2**	---	**278,000**	---	< 0.2	< 0.2	**259**	< 0.2	**39**	< 0.028	< 2	< 10	< 0.2	< 2	< 5	< 0.04	< 0.02	**0.20**	< 10	< 2	< 0.1	< 0.1	**1.2**	**0.30**	< 5
MW 403b	13-May-19	**8.0**	**0.6**	---	**24,500**	---	0.1	0.2	**431**	<0.1	<5	<0.015	<2	<10	**0.10**	<2	---	**0.15**	<0.02	**0.80**	**0.40**	<1	<0.1	<0.05	**0.50**	**0.30**	<5
	27-Nov-19	**8.0**	**2.9**	---	**390,000**	---	< 0.5	< 0.5	**372**	< 0.5	**54**	< 0.070	< 2	< 10	< 0.5	< 2	< 5	**0.14**	< 0.02	< 0.5	< 10	< 5	< 0.1	< 0.3	**2.2**	< 0.5	< 5
MW 403c	13-May-19	**7.6**	**2.9**	---	**408,000**	---	<0.1	**0.20**	**374**	<0.1	**52**	**0.05**	<2	<10	**0.70**	<2	---	**0.19**	<0.02	**1.5**	**1.6**	<1	<0.1	<0.05	**1.8**	**0.30**	<5
	27-Nov-19	**8.0**	**2.4**	---	**405,000**	---	< 0.5	< 0.5	**356**	< 0.5	**56**	< 0.070	< 2	< 10	< 0.5	< 2	< 5	**0.12**	< 0.02	**1.8**	< 10	< 5	< 0.1	< 0.3	**2.0**	< 0.5	< 5
MW 404a	07-Jun-19	**7.7**	**2.7**	---	**326,000**	---	**0.20**	**0.60**	**343**	< 0.1	**44**	< 0.015	< 2	< 10	**4.3**	< 2	< 5	**0.35**	< 0.02	**7.2**	**3.3**	< 1	< 0.1	< 0.05	**0.69**	**0.20**	< 5
	26-Nov-19	**8.0**	**2.4**	---	**302,000**	---	< 0.5	< 0.5	**221**	< 0.5	**46**	< 0.070	< 2	< 10	**0.90**	< 2	< 5	**0.59**	< 0.02	**0.70**	< 10	< 5	< 0.1	< 0.3	**1.4**	< 0.5	< 5

Table 8

Ground and Surface Water Quality Analtyical Results: Trace Metals

PROJECT NO: 18-175		Inorganics				Dissolved Metal Parameters																				
Borehole	Date Sampled (d-m-y)	pH	Electrical Conductivity mS/cm	Chloride (µg/L)	Sodium (µg/L)	Total Ammonia (as Nitrogen) (mg/L)	Antimony (µg/L)	Arsenic (µg/L)	Barium (µg/L)	Beryllium (µg /L)	Boron (µg/L)	Cadmium (µg/L)	Chromium (µg/L)	Chromium (VI) (µg/L)	Cobalt (µg/L)	Copper (µg/L)	Cyanide (µg/L)	Lead (µg/L)	Mercury (µg/L)	Molybdenum (µg/L)	Nickel (µg/L)	Selenium (µg/L)	Silver (µg/L)	Thallium (µg/L)	Uranium (µg/L)	Vanadium (µg/L)	Zinc (µg/L)
Table 1 (O.Reg. 153/04*)		N/A	N/A	790,000	NV	N/A	1.5	13	610	0.5	1,700	0.5	11	NV	3.8	5.0	5.0	1.9	0.2	23	14	5.0	0.3	0.5	8.9	3.9	160
Table 2 (O.Reg. 153/04)**		N/A	N/A	790,000	490,000	N/A	6.0	25	1,000	4.0	5,000	2.7	25	25	3.8	87	66	10	0.29	70	100	10.0	1.5	2.0	20	6.2	1,100
MW 404b	07-Jun-19	**7.7**	**2.7**	---	**249,000**	---	**0.70**	**1.1**	**399**	< 0.1	**42**	**0.04**	< 2	< 10	**1.3**	< 2	< 5	**1.9**	< 0.02	**26**	**5.8**	**1.0**	< 0.1	< 0.05	**0.57**	**0.30**	< 5
	26-Nov-19	**7.9**	**2.2**	---	**309,000**	---	< 0.2	**1.8**	**288**	< 0.2	**48**	< 0.028	< 2	< 10	**0.40**	< 2	< 5	**1.5**	< 0.02	**0.30**	< 10	< 2	< 0.1	< 0.1	**1.2**	**0.40**	< 5
MW 404c	07-Jun-19	**7.7**	**2.1**	---	**303,000**	---	**0.80**	**2.0**	**176**	< 0.1	**70**	**0.11**	< 2	< 10	**4.4**	< 2	< 5	**4.8**	< 0.02	**68**	**20**	< 1	< 0.1	< 0.05	**0.17**	**0.50**	< 5
	26-Nov-19	**7.9**	**2.6**	---	**361,000**	---	< 0.5	**1.5**	**305**	< 0.5	**80**	< 0.070	< 2	< 10	**1.6**	< 2	< 5	**4.3**	< 0.02	**0.70**	< 10	< 5	< 0.1	< 0.3	**1.4**	**0.80**	< 5
MW 405a	14-May-19	**8.0**	**2.1**	---	**258,000**	---	**0.10**	**0.40**	**413**	<0.1	**44**	**0.02**	**4.0**	<10	**1.6**	<2	---	**1.2**	<0.02	**0.70**	**3.6**	**1.0**	<0.1	<0.05	**3.5**	<5	**9.0**
	26-Nov-19	**8.0**	**2.0**	---	**247,000**	---	< 0.2	< 0.2	**246**	< 0.2	**40**	< 0.028	< 2	< 10	< 0.2	< 2	< 5	< 0.04	< 0.02	**0.30**	< 10	< 2	< 0.1	< 0.1	**2.8**	**0.30**	< 5
MW 406a	07-Jun-19	**7.8**	**1.8**	---	**236,000**	---	**0.20**	**0.90**	**193**	< 0.1	**49**	**0.02**	< 2	< 10	**5.1**	< 2	< 5	**0.40**	< 0.02	**13**	**5.5**	**1.0**	< 0.1	< 0.05	**0.82**	**0.30**	< 5
Duplicate	07-Jun-19	**7.9**	**1.9**	---	**236,000**	---	**0.20**	**0.90**	**186**	< 0.1	**49**	**0.02**	< 2	< 10	**5.2**	< 2	< 5	**0.44**	< 0.02	**14**	**5.3**	< 1	< 0.1	< 0.05	**0.79**	**0.30**	< 5
	26-Nov-19	**8.0**	**2.4**	---	**289,000**	---	< 0.5	< 0.5	**299**	< 0.5	**51**	< 0.070	< 2	< 10	< 0.5	< 2	< 5	**0.63**	< 0.02	**0.60**	< 10	< 5	< 0.1	< 0.3	**1.6**	< 0.5	< 5
MW 406b	07-Jun-19	**7.7**	**1.8**	---	**204,000**	---	**0.30**	**1.2**	**165**	< 0.1	**64**	**0.02**	< 2	< 10	**1.0**	< 2	< 5	**3.1**	< 0.02	**12**	**4.9**	< 1	< 0.1	< 0.05	**0.38**	**0.40**	< 5
	26-Nov-19	**8.1**	**1.7**	---	**188,000**	---	**0.60**	**0.20**	**104**	< 0.2	**135**	< 0.028	< 2	< 10	**1.1**	< 2	< 5	**9.8**	< 0.02	**0.50**	< 10	< 2	< 0.1	< 0.1	**0.48**	**0.40**	**8.0**
MW 406c	07-Jun-19	**7.7**	**1.9**	---	**149,000**	---	**0.70**	**0.60**	**106**	< 0.1	**89**	**0.08**	< 2	< 10	**1.5**	< 2	< 5	**6.9**	< 0.02	**38**	**7.8**	< 1	< 0.1	< 0.05	**0.32**	**0.60**	< 5
	26-Nov-19	**7.9**	**2.4**	---	**283,000**	---	**0.10**	**1.1**	**188**	< 0.1	**75**	< 0.015	< 2	< 10	**0.50**	< 2	< 5	**3.0**	< 0.02	**1.1**	< 10	< 1	< 0.1	< 0.05	**0.46**	**0.50**	< 5
MW 407a	14-May-19	**8.1**	**1.7**	---	**302,000**	---	**0.50**	**0.50**	**110**	<0.1	**48**	**0.04**	<2	<10	0.5	<2	---	**0.20**	<0.02	**7.0**	**2.5**	**2.0**	<0.1	<0.05	**4.2**	<5	<5
	27-Nov-19	**7.9**	**2.9**	---	**315,000**	---	< 0.5	< 0.5	**413**	< 0.5	**49**	< 0.070	< 2	< 10	< 0.5	< 2	< 5	**0.16**	< 0.02	< 0.5	< 10	< 5	< 0.1	< 0.3	**2.9**	< 0.5	< 5
MW 407b	14-May-19	**8.2**	**1.5**	---	**272,000**	---	**0.50**	**0.30**	**152**	<0.1	**42**	**0.05**	<2	<10	**0.50**	<2	---	**0.04**	<0.02	**6.5**	**2.3**	**2.0**	<0.1	<0.05	**3.4**	<5	<5
	27-Nov-19	**7.9**	**3.3**	---	**358,000**	---	< 0.5	< 0.5	**770**	< 0.5	**63**	< 0.070	< 2	< 10	< 0.5	< 2	< 5	< 0.1	< 0.02	< 0.5	< 10	< 5	< 0.1	< 0.3	**3.7**	< 0.5	< 5
MW 407c	14-May-19	**8.5**	**1.3**	---	**281,000**	---	**0.30**	1.0	**84**	<0.1	**45**	**0.02**	**5.0**	<10	0.2	<2	---	**0.15**	<0.02	**7.3**	**0.80**	**2.0**	<0.1	<0.05	**2.7**	<5	<5
	27-Nov-19	**7.8**	**3.3**	---	**323,000**	---	< 0.5	< 0.5	**963**	< 0.5	**71**	< 0.070	< 2	< 10	< 0.5	< 2	< 5	< 0.1	< 0.02	< 0.5	< 10	< 5	< 0.1	< 0.3	**3.5**	< 0.5	< 5
MW 408	14-May-19	**8.1**	**1.8**	---	**294,000**	---	**0.20**	**0.40**	**77**	<0.1	**54**	**0.06**	<2	<10	**0.90**	<2	---	**0.04**	<0.02	**6.6**	**4.7**	**3.0**	<0.1	<0.05	**4.1**	<5	<5
	26-Nov-19	**8.0**	**2.1**	---	**228,000**	**0.09**	< 0.2	< 0.2	**132**	< 0.2	**53**	< 0.028	< 2	< 10	**0.30**	< 2	< 5	< 0.04	< 0.02	**0.30**	< 10	< 2	< 0.1	< 0.1	**1.9**	**0.50**	< 5

NOTES:

1. --- in guideline(s) row denotes no criteria, and in data row(s) indicates parameter not analyzed.

2. Bold values indicate parameters above Table 2 guidelines.

3. * denotes O.Reg. 153/04 Table 1 Full Depth Background Site Condition Standards, for All Types of Property Use.

4. ** denotes O.Reg. 153/04 Table 2 Full Depth Generic Site Condition Standards in a Potable Ground Water Condition in Coarse Grained Soils, for All Types of Property Use.

5. N/A denotes not applicable

6. NV denotes no value

Table 9
Ground Water Quality Analytical Results: Polycyclic Aromatic Hydrocarbons and Acid/ Base/ Neutrals

PROJECT NO: 18-175

Borehole	Date Sampled (d-m-y)	PAH & ABN Parameters: Naphthalene µg/L	Acenaphthylene µg/L	Acenaphthene µg/L	Fluorene µg/L	Phenanthrene µg/L	Anthracene µg/L	Fluoranthene µg/L	Pyrene µg/L	Benz(a)anthracene µg/L	Chrysene µg/L	Benzo(b)fluoranthene µg/L	Benzo(k)fluoranthene µg/L	Benzo(a)pyrene µg/L	Indeno(1,2,3-cd)pyrene µg/L	Dibenz(a,h)anthracene µg/L	Benzo(g,h,i)perylene µg/ L	Methylnaphthalene,1- µg/L	Methylnaphthalene,2- µg/L
Table 1 (O.Reg. 153/04*)		**7.0**	**1.0**	**4.1**	**120**	**0.1**	**0.1**	**0.4**	**0.2**	**0.2**	**0.1**	**0.1**	**0.1**	**0.01**	**0.2**	**0.2**	**0.2**	**NV**	**NV**
Table 2 (O.Reg. 153/04)**		**11**	**1.0**	**4.1**	**120**	**1.0**	**2.4**	**0.41**	**4.1**	**1.0**	**0.1**	**0.1**	**0.1**	**0.01**	**0.2**	**0.2**	**0.2**	**3.2**	**3.2**
MW101	28-Nov-19	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.08
	Duplicate	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.08
MW102	13-Feb-18	<8	**4.6**	**7.9**	**27**	**70**	**5.4**	**1.1**	**4.1**	<0.4	**0.43**	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	**47**	**122**
	23-Mar-18	<3.5	**0.89**	**2.6**	**7.0**	**27**	**2.0**	**0.236**	**1.2**	**0.07**	**0.133**	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	**7.1**	**24**
Duplicate	23-Mar-18	<14	**4.3**	<11	**28**	**70**	**5.8**	**1.0**	**3.3**	**0.15**	**0.276**	0.07	<0.04	<0.04	0.04	<0.04	**0.044**	**42**	**115**
MW103	13-Feb-18	**311**	**0.15**	**0.319**	**0.484**	**0.71**	**0.052**	**0.064**	**0.10**	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	**80**	**173**
	23-Mar-18	**93**	**0.12**	**0.272**	**0.436**	**0.54**	**0.038**	**0.05**	**0.09**	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	**54**	**110**
MW105	25-Oct-18	<0.20	<0.20	<0.20	<0.20	<0.10	<0.10	<0.20	<0.20	<0.20	<0.10	<0.10	<0.10	<0.01	<0.20	<0.20	<0.20	---	---
Duplicate	25-Oct-18	<0.20	<0.20	<0.20	<0.20	<0.10	<0.10	<0.20	<0.20	<0.20	<0.10	<0.10	<0.10	<0.01	<0.20	<0.20	<0.20	---	---
MW201	23-Mar-18	<0.05	<0.02	<0.02	<0.02	<0.02	<0.20	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02
Duplicate	23-Mar-18	<0.05	<0.02	<0.02	<0.02	<0.02	<0.20	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02
MW202	25-Oct-18	<0.20	<0.20	<0.20	<0.20	<0.10	<0.10	<0.20	<0.20	<0.20	<0.10	<0.10	<0.10	<0.01	<0.20	<0.20	<0.20	---	---
	23-Mar-18	<0.05	<0.02	<0.02	<0.02	<0.02	<0.20	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02
MW203	23-Mar-18	<0.05	<0.02	<0.02	<0.02	<0.02	<0.20	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02
	25-Oct-18	<0.20	<0.20	<0.20	<0.20	<0.10	<0.10	<0.20	<0.20	<0.20	<0.10	<0.10	<0.10	<0.01	<0.20	<0.20	<0.20	---	---
MW204	23-Mar-18	<0.05	<0.02	<0.02	<0.02	<0.02	<0.20	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02
MW205	23-Mar-18	<0.05	<0.02	<0.02	<0.02	<0.02	<0.20	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02
	24-Oct-18	<0.20	<0.20	<0.20	<0.20	<0.10	<0.10	<0.20	<0.20	<0.20	<0.10	<0.10	<0.10	<0.01	<0.20	<0.20	<0.20	---	---
MW206	23-Mar-18	<0.05	<0.02	<0.02	<0.02	<0.02	<0.20	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02
MW207	23-Mar-18	**826**	**0.25**	**0.70**	**1.0**	**0.97**	**0.07**	**0.09**	**0.13**	**0.03**	**0.03**	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	**178**	**357**
MW304	26-Oct-18	<0.20	<0.20	<0.20	<0.20	<0.10	<0.10	<0.20	<0.20	<0.20	<0.10	<0.10	<0.10	<0.01	<0.20	<0.20	<0.20	---	---
Duplicate	26-Oct-18	<0.20	<0.20	<0.20	<0.20	<0.10	<0.10	<0.20	<0.20	<0.20	<0.10	<0.10	<0.10	<0.01	<0.20	<0.20	<0.20	---	---
	26-Nov-19	**0.08**	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.05	< 0.05	< 0.05	< 0.05	< 0.08
MW305	26-Nov-19	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.05	< 0.05	< 0.05	< 0.05	< 0.08
MW308	26-Nov-19	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	**0.03**	< 0.05	< 0.05	< 0.05	< 0.05	< 0.08
Duplicate	26-Nov-19	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	**0.03**	< 0.05	< 0.05	< 0.05	< 0.05	< 0.08
MW 401a	13-May-19	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.03**	<0.05	<0.05	<0.05	<0.05	<0.08
	27-Nov-19	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.05	< 0.05	< 0.05	< 0.05	< 0.08
MW 401b	13-May-19	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.02**	<0.05	<0.05	<0.05	<0.05	<0.08
Duplicate	13-May-19	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.02**	<0.05	<0.05	<0.05	<0.05	<0.08
	27-Nov-19	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.05	< 0.05	< 0.05	< 0.05	< 0.08
MW401c	15-May-19	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.08
	27-Nov-19	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.05	< 0.05	< 0.05	< 0.05	< 0.08
MW402a	13-May-19	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.08
	27-Nov-19	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.05	< 0.05	< 0.05	< 0.05	< 0.08
MW 402b	13-May-19	<0.05	<0.05	<0.05	<0.05	**0.06**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.02**	<0.05	<0.05	<0.05	<0.05	<0.08
	27-Nov-19	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.05	< 0.05	< 0.05	< 0.05	< 0.08
MW 402c	13-May-19	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.05	<0.2	<0.2	<0.2	<0.2	<0.4
	27-Nov-19	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.05	< 0.05	< 0.05	< 0.05	< 0.08
MW 403a	13-May-19	**0.06**	<0.05	<0.05	<0.05	**0.08**	<0.05	**0.08**	**0.08**	**0.08**	<0.05	<0.05	<0.05	**0.04**	<0.05	<0.05	<0.05	**0.06**	**0.12**
	27-Nov-19	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.05	< 0.05	< 0.05	< 0.05	< 0.08
MW 403b	13-May-19	**0.16**	<0.05	<0.05	<0.05	**0.05**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.01**	<0.05	<0.05	<0.05	**0.15**	**0.21**
	27-Nov-19	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.05	< 0.05	< 0.05	< 0.05	< 0.08
MW 403c	13-May-19	**28**	<0.05	**0.11**	**0.17**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.02**	<0.05	<0.05	<0.05	**16**	**8.5**
	27-Nov-19	**0.06**	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.05	< 0.05	< 0.05	< 0.05	< 0.08
MW 404a	07-Jun-19	**10**	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.05	< 0.05	< 0.05	**0.68**	**1.3**
	26-Nov-19	**50**	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.05	< 0.05	< 0.05	**4.4**	**6.7**
MW 404b	07-Jun-19	**515**	< 0.09	**0.15**	**0.39**	**0.24**	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.02	< 0.09	< 0.09	< 0.09	**72**	**144**
	26-Nov-19	**648**	< 0.2	**0.27**	**0.45**	**0.36**	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.05	< 0.2	< 0.2	< 0.2	**78**	**170**
MW 404c	07-Jun-19	**280**	< 0.09	**0.28**	**0.64**	**0.33**	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.02	< 0.09	< 0.09	< 0.09	**77**	**156**
	26-Nov-19	**360**	< 0.3	**0.33**	**0.44**	**0.50**	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.06	< 0.3	< 0.3	< 0.3	**74**	**150**
MW 405a	14-May-19	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.06	<0.3	<0.3	<0.3	<0.3	<0.5

Borehole	Date Sampled (d-m-y)	PAH & ABN Parameters: Phenol µg/L	Bis(2-chloroethyl)ether µg/L	2-Chlorophenol µg/L	o-Cresol µg/L	Bis(2-chloroisopropyl)e µg/L	m&p-Cresol µg/L	2,4-Dimethylphenol µg/L	2,4-Dichlorophenol µg/L	1,2,4-Trichlorobenzene ug/L	p-Chloroaniline µg/L	2-and 1-methyl Naphtha µg /L	2,4,6-Trichlorophenol µg/L	2,4,5-Trichlorophenol µg/L	1,1'-Biphenyl µg/L	Dimethyl phthalate µg/L	2,4 and 2,6-Dinitrotolue µg/L	Diethyl phthalate µg/L	Pentachlorophenol µg/L	3,3'-dichlorobenzidine µg/L	Bis(2-Ethylhexyl)phthal µg/L	2,4-Dinitrophenol µg/L
Table 1 (O.Reg. 153/04*)		**5**	**5**	**8.9**	**NV**	**120**	**NV**	**10**	**20**	**0.5**	**NV**	**2**	**0.2**	**0.2**	**0.2**	**30**	**5**	**30**	**0.5**	**0.5**	**10**	**10**
Table 2 (O.Reg. 153/04)**		**890**	**5**	**8.9**	**NV**	**120**	**NV**	**59**	**20**	**70**	**NV**	**3.2**	**2**	**8.9**	**0.5**	**38**	**5**	**38**	**30**	**0.5**	**10**	**10**
MW101	28-Nov-19	---	---	---	---	---	---	---	---	---	---	<1	---	---	---	---	---	---	---	---	---	---
	Duplicate	---	---	---	---	---	---	---	---	---	---	<1	---	---	---	---	---	---	---	---	---	---
MW102	13-Feb-18	---	---	---	---	---	---	---	---	---	---	**169**	---	---	---	---	---	---	---	---	---	---
	23-Mar-18	---	---	---	---	---	---	---	---	---	---	**31**	---	---	---	---	---	---	---	---	---	---
Duplicate	23-Mar-18	---	---	---	---	---	---	---	---	---	---	**157**	---	---	---	---	---	---	---	---	---	---
MW103	13-Feb-18	---	---	---	---	---	---	---	---	---	---	**253**	---	---	---	---	---	---	---	---	---	---
	23-Mar-18	---	---	---	---	---	---	---	---	---	---	**164**	---	---	---	---	---	---	---	---	---	---
MW105	25-Oct-18	---	---	---	---	---	---	---	---	---	---	<0.20	---	---	---	---	---	---	---	---	---	---
Duplicate	25-Oct-18	---	---	---	---	---	---	---	---	---	---	<0.20	---	---	---	---	---	---	---	---	---	---
MW201	23-Mar-18	---	---	---	---	---	---	---	---	---	---	<0.028	---	---	---	---	---	---	---	---	---	---
Duplicate	23-Mar-18	---	---	---	---	---	---	---	---	---	---	<0.028	---	---	---	---	---	---	---	---	---	---
MW202	25-Oct-18	<1.0	<0.5	<0.5	<0.5	<0.5	<0.6	<0.5	<0.3	<0.5	<1.0	<0.5	<0.2	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10
	23-Mar-18	---	---	---	---	---	---	---	---	---	---	<0.028	---	---	---	---	---	---	---	---	---	---
MW203	23-Mar-18	---	---	---	---	---	---	---	---	---	---	<0.028	---	---	---	---	---	---	---	---	---	---
	25-Oct-18	<1.0	<0.5	<0.5	<0.5	<0.5	<0.6	<0.5	<0.3	<0.5	<1.0	<0.5	<0.2	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10
MW204	23-Mar-18	---	---	---	---	---	---	---	---	---	---	<0.028	---	---	---	---	---	---	---	---	---	---
MW205	23-Mar-18	---	---	---	---	---	---	---	---	---	---	<0.028	---	---	---	---	---	---	---	---	---	---
	24-Oct-18	<1.0	<0.5	<0.5	<0.5	<0.5	<0.6	<0.5	<0.3	<0.5	<1.0	<0.5	<0.2	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10
MW206	23-Mar-18	---	---	---	---	---	---	---	---	---	---	<0.028	---	---	---	---	---	---	---	---	---	---
MW207	23-Mar-18	---	---	---	---	---	---	---	---	---	---	**536**	---	---	---	---	---	---	---	---	---	---
MW304	26-Oct-18	<1.0	<0.5	<0.5	<0.5	<0.5	<0.6	<0.5	<0.3	<0.5	<1.0	<0.5	<0.2	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10
Duplicate	26-Oct-18	<1.0	<0.5	<0.5	<0.5	<0.5	<0.6	<0.5	<0.3	<0.5	<1.0	<0.5	<0.2	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10
	26-Nov-19	---	---	---	---	---	---	---	---	---	---	< 1	---	---	---	---	---	---	---	---	---	---
MW305	26-Nov-19	---	---	---	---	---	---	---	---	---	---	< 1	---	---	---	---	---	---	---	---	---	---
MW308	26-Nov-19	---	---	---	---	---	---	---	---	---	---	< 1	---	---	---	---	---	---	---	---	---	---
Duplicate	26-Nov-19	---	---	---	---	---	---	---	---	---	---	< 1	---	---	---	---	---	---	---	---	---	---
MW 401a	13-May-19	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	27-Nov-19	---	---	---	---	---	---	---	---	---	---	< 1	---	---	---	---	---	---	---	---	---	---
MW 401b	13-May-19	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Duplicate	13-May-19	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	27-Nov-19	---	---	---	---	---	---	---	---	---	---	< 1	---	---	---	---	---	---	---	---	---	---
MW401c	15-May-19	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	27-Nov-19	---	---	---	---	---	---	---	---	---	---	< 1	---	---	---	---	---	---	---	---	---	---
MW402a	13-May-19	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	27-Nov-19	---	---	---	---	---	---	---	---	---	---	< 1	---	---	---	---	---	---	---	---	---	---
MW 402b	13-May-19	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	27-Nov-19	---	---	---	---	---	---	---	---	---	---	< 1	---	---	---	---	---	---	---	---	---	---
MW 402c	13-May-19	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	27-Nov-19	---	---	---	---	---	---	---	---	---	---	< 1	---	---	---	---	---	---	---	---	---	---
MW 403a	13-May-19	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	27-Nov-19	---	---	---	---	---	---	---	---	---	---	< 1	---	---	---	---	---	---	---	---	---	---
MW 403b	13-May-19	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	27-Nov-19	---	---	---	---	---	---	---	---	---	---	< 1	---	---	---	---	---	---	---	---	---	---
MW 403c	13-May-19	---	---	---	---	---	---	---	---	---	---	**25**	---	---	---	---	---	---	---	---	---	---
	27-Nov-19	---	---	---	---	---	---	---	---	---	---	< 1	---	---	---	---	---	---	---	---	---	---
MW 404a	07-Jun-19	---	---	---	---	---	---	---	---	---	---	**2.0**	---	---	---	---	---	---	---	---	---	---
	26-Nov-19	---	---	---	---	---	---	---	---	---	---	**11**	---	---	---	---	---	---	---	---	---	---
MW 404b	07-Jun-19	---	---	---	---	---	---	---	---	---	---	**216**	---	---	---	---	---	---	---	---	---	---
	26-Nov-19	---	---	---	---	---	---	---	---	---	---	**248**	---	---	---	---	---	---	---	---	---	---
MW 404c	07-Jun-19	---	---	---	---	---	---	---	---	---	---	**233**	---	---	---	---	---	---	---	---	---	---
	26-Nov-19	---	---	---	---	---	---	---	---	---	---	**224**	---	---	---	---	---	---	---	---	---	---
MW 405a	14-May-19	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Table 9
Ground Water Quality Analytical Results: Polycyclic Aromatic Hydrocarbons and Acid/ Base/ Neutrals

PROJECT NO: 18-175

Borehole	Date Sampled (d-m-y)	PAH & ABN Parameters: Naphthalene µg/L	Acenaphthylene µg/L	Acenaphthene µg/L	Fluorene µg/L	Phenanthrene µg/L	Anthracene µg/L	Fluoranthene µg/L	Pyrene µg/L	Benz(a)anthracene µg/L	Chrysene µg/L	Benzo(b)fluoranthene µg/L	Benzo(k)fluoranthene µg/L	Benzo(a)pyrene µg/L	Indeno(1,2,3-cd)pyrene µg/L	Dibenz(a,h)anthracene µg/L	Benzo(g,h,i)perylene µg/ L	Methylnaphthalene,1- µg/L	Methylnaphthalene,2- µg/L
Table 1 (O.Reg. 153/04*)		7.0	1.0	4.1	120	0.1	0.1	0.4	0.2	0.2	0.1	0.1	0.1	0.01	0.2	0.2	0.2	NV	NV
Table 2 (O.Reg. 153/04)**		11	1.0	4.1	120	1.0	2.4	0.41	4.1	1.0	0.1	0.1	0.1	0.01	0.2	0.2	0.2	3.2	3.2
	26-Nov-19	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.05	< 0.05	< 0.05	<0.08
MW 406a	07-Jun-19	23	< 0.05	< 0.05	0.08	0.09	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.05	< 0.05	5.5	11
Duplicate	07-Jun-19	18	< 0.05	0.08	0.19	0.23	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.05	< 0.05	7.9	16
	26-Nov-19	7.7	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.05	< 0.05	1.1	1.1
MW 406b	07-Jun-19	175	< 0.09	2.0	2.8	1.4	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.02	< 0.09	< 0.09	< 0.09	82	119
	26-Nov-19	546	0.24	1.2	1.8	0.99	0.06	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.05	< 0.05	< 0.05	85	130
MW 406c	07-Jun-19	559	< 0.05	0.81	1.5	1.1	0.08	0.07	0.11	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.05	< 0.05	< 0.05	129	259
	26-Nov-19	770	0.23	0.63	1.3	1.0	0.09	0.07	0.09	0.05	< 0.05	< 0.05	< 0.05	0.01	< 0.05	< 0.05	< 0.05	140	281
MW 407a	14-May-19	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.06	<0.3	<0.3	<0.3	<0.5
	27-Nov-19	0.07	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.05	< 0.05	< 0.05	<0.08
MW 407b	14-May-19	0.12	<0.06	<0.06	<0.06	0.08	<0.06	0.13	0.06	<0.06	<0.06	<0.06	<0.06	0.01	<0.06	<0.06	<0.06	<0.06	<0.09
	27-Nov-19	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.01	< 0.05	< 0.05	< 0.05	< 0.05	<0.08
MW 407c	14-May-19	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.01	<0.06	<0.06	<0.06	<0.06	<0.09
	27-Nov-19	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.05	< 0.05	< 0.05	< 0.05	<0.08
MW 408	14-May-19	0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.08
	26-Nov-19	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.05	< 0.05	< 0.05	< 0.05	<0.08

NOTES:

1. *--- in guideline(s) row denotes no criteria, and in data row(s) indicates parameter not analyzed.*
2. *Bold and red values indicate parameters above the Table 2 guidelines.*
3. ** denotes O.Reg. 153/04 Table 1 Full Depth Generic Site Condition Standards in a Potable Gound Water Condition for All Types of Property Use, for coarse grained soil guidelines*
4. *** denotes O.Reg. 153/04 Table 2 Full Depth Generic Site Condition Standards in a Potable Gound Water Condition for All Types of Property Use, for coarse grained soil guidelines*

NV - no value

Borehole	Date Sampled (d-m-y)	PAH & ABN Parameters: Phenol µg/L	Bis(2-chloroethyl)ether µg/L	2-Chlorophenol µg/L	o-Cresol µg/L	Bis(2-chloroisopropyl)e µg/L	m&p-Cresol µg/L	2,4-Dimethylphenol µg/L	2,4-Dichlorophenol µg/L	1,2,4-Trichlorobenzene ug/L	p-Chloroaniline µg/L	2-and 1-methyl Naphtha µg /L	2,4,6-Trichlorophenol µg/L	2,4,5-Trichlorophenol µg/L	1,1'-Biphenyl µg/L	Dimethyl phthalate µg/L	2,4 and 2,6-Dinitrotolue µg/L	Diethyl phthalate µg/L	Pentachlorophenol µg/L	3,3'-dichlorobenzidine µg/L	Bis(2-Ethylhexyl)phthal µg/L	2,4-Dinitrophenol µg/L
Table 1 (O.Reg. 153/04*)		5	5	8.9	NV	120	NV	10	20	0.5	NV	2	0.2	0.2	0.2	30	5	30	0.5	0.5	10	10
Table 2 (O.Reg. 153/04)**		890	5	8.9	NV	120	NV	59	20	70	NV	3.2	2	8.9	0.5	38	5	38	30	0.5	10	10
	26-Nov-19	---	---	---	---	---	---	---	---	---	---	< 1	---	---	---	---	---	---	---	---	---	---
MW 406a	07-Jun-19	---	---	---	---	---	---	---	---	---	---	16	---	---	---	---	---	---	---	---	---	---
Duplicate	07-Jun-19	---	---	---	---	---	---	---	---	---	---	24	---	---	---	---	---	---	---	---	---	---
	26-Nov-19	---	---	---	---	---	---	---	---	---	---	2.2	---	---	---	---	---	---	---	---	---	---
MW 406b	07-Jun-19	---	---	---	---	---	---	---	---	---	---	201	---	---	---	---	---	---	---	---	---	---
	26-Nov-19	---	---	---	---	---	---	---	---	---	---	214	---	---	---	---	---	---	---	---	---	---
MW 406c	07-Jun-19	---	---	---	---	---	---	---	---	---	---	388	---	---	---	---	---	---	---	---	---	---
	26-Nov-19	---	---	---	---	---	---	---	---	---	---	421	---	---	---	---	---	---	---	---	---	---
MW 407a	14-May-19	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	27-Nov-19	---	---	---	---	---	---	---	---	---	---	< 1	---	---	---	---	---	---	---	---	---	---
MW 407b	14-May-19	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	27-Nov-19	---	---	---	---	---	---	---	---	---	---	< 1	---	---	---	---	---	---	---	---	---	---
MW 407c	14-May-19	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	27-Nov-19	---	---	---	---	---	---	---	---	---	---	< 1	---	---	---	---	---	---	---	---	---	---
MW 408	14-May-19	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	26-Nov-19	---	---	---	---	---	---	---	---	---	---	< 1	---	---	---	---	---	---	---	---	---	---

NOTES:

1. *--- in guideline(s) row denotes no criteria, and in data row(s) indicates parameter not analyzed.*
2. *Bold values indicate parameters above the Table 2 guidelines.*
3. ** denotes O.Reg. 153/04 Table 1 Full Depth Generic Site Condition Standards in a Potable Gound Water Condition for All Types of Property Use, for coarse grained soil guidelines*
4. *** denotes O.Reg. 153/04 Table 2 Full Depth Generic Site Condition Standards in a Potable Gound Water Condition for All Types of Property Use, for coarse grained soil guidelines*

NV - no value

Table 10
Ground Water Quality Analytical Results: Organo-Chlorines

PROJECT NO: 18-175

Borehole	Date Sampled (d-m-y)	Aldrin µg/L	Chlordane (alpha) µg/L	Chlordane (Gamma) µg/L	Chlordane Total (alpha+gamma) µg/L	DDD, 2,4- µg/L	DDD, 4,4- µg/L	DDD Total Water µg/L	DDE, 2,4- µg/L	DDE, 4,4- µg/L	DDE Total water µg/L	DDT, 2,4- µg/L	DDT, 4,4- µg/L	DDT Total water µg/L	Dieldrin µg/L	Lindane (Hexachlorocyclohexane, Gamma) µg/L	Endosulfan I µg/ L	Endosulfan II µg/L	Endosulfan I/II µg/L	Endrin µg/L	Heptachlor µg/L	Heptachlor Epoxide µg/L	Hexachlorobenzene µg/L	Hexachlorobutadiene µg/L	Hexachloroethane µg/L	Methoxychlor µg/L
Table 1 (O.Reg. 153/04*)		**0.01**	**0.06**	**0.06**	**0.06**	**1.8**	**1.8**	**1.8**	**10**	**10**	**10**	**0.05**	**0.05**	**0.05**	**0.05**	**0.01**	**0.05**	**0.05**	**0.05**	**0.05**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.05**
Table 2 (O.Reg. 153/04)**		**0.35**	**7.0**	**7.0**	**7.0**	**10**	**10**	**10**	**10**	**10**	**10**	**2.8**	**2.8**	**2.8**	**0.35**	**1.2**	**1.5**	**1.5**	**1.5**	**0.48**	**1.5**	**0.048**	**1.0**	**0.44**	**2.1**	**6.5**
MW101	26-Nov-19	< 0.01	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.01	< 0.01	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.01	< 0.01	< 0.01	< 0.02	< 0.05
Duplicate	26-Nov-19	< 0.01	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.01	< 0.01	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.01	< 0.01	< 0.01	< 0.02	< 0.05
MW304	26-Nov-19	< 0.01	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.01	< 0.01	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.01	< 0.01	< 0.01	< 0.02	< 0.05
MW 401a	27-Nov-19	< 0.01	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.01	< 0.01	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.01	< 0.01	< 0.01	< 0.02	< 0.05
MW 401b	27-Nov-19	< 0.01	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.01	< 0.01	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.01	< 0.01	< 0.01	< 0.02	< 0.05
MW401c	27-Nov-19	< 0.01	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.01	< 0.01	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.01	< 0.01	< 0.01	< 0.02	< 0.05
MW 408	26-Nov-19	< 0.01	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.01	< 0.01	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.05	< 0.05	< 0.05	< 0.05	< 0.01	< 0.01	< 0.01	< 0.01	< 0.02	< 0.05

NOTES:

1. --- in guideline(s) row denotes no criteria, and in data row(s) indicates parameter not analyzed.
2. Bold and red values indicate parameters above the Table 2 guidelines.
3. * denotes O.Reg. 153/04 Table 1 Full Depth Generic Site Condition Standards in a Potable Gound Water Condition for All Types of Property Use, for coarse grained soil guidelines
4. ** denotes O.Reg. 153/04 Table 2 Full Depth Generic Site Condition Standards in a Potable Gound Water Condition for All Types of Property Use, for coarse grained soil guidelines
NV - no value

APPENDIX G

Laboratory Analytical Reports

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,
642 WELHAM ROAD
BARRIE, ON L4N9A1
(705) 721-8451

ATTENTION TO: Jennifer Thompson

PROJECT: 41 Essa

AGAT WORK ORDER: 18T339821

SOIL ANALYSIS REVIEWED BY: Amanjot Bhela, Inorganic Coordinator

TRACE ORGANICS REVIEWED BY: Oksana Gushyla, Trace Organics Lab Supervisor

DATE REPORTED: May 30, 2018

PAGES (INCLUDING COVER): 16

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

Member of: Association of Professional Engineers and Geoscientists of Alberta (APEGA)
Western Enviro-Agricultural Laboratory Association (WEALA)
Environmental Services Association of Alberta (ESAA)

AGAT Laboratories is accredited to ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA) and/or Standards Council of Canada (SCC) for specific tests listed on the scope of accreditation. AGAT Laboratories (Mississauga) is also accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) for specific drinking water tests. Accreditations are location and parameter specific. A complete listing of parameters for each location is available from www.cala.ca and/or www.scc.ca. The tests in this report may not necessarily be included in the scope of accreditation.

Results relate only to the items tested and to all the items tested
All reportable information as specified by ISO 17025:2005 is available from AGAT Laboratories upon request

AGAT Laboratories

5835 COOPERS AVENUE
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Certificate of Analysis

AGAT WORK ORDER: 18T339821

PROJECT: 41 Essa

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

SAMPLING SITE:

ATTENTION TO: Jennifer Thompson

SAMPLED BY:

O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2018-05-16 **DATE REPORTED: 2018-05-30**

		SAMPLE DESCRIPTION:		TP-6-3	TP-1-3
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2018-05-14	2018-05-14
Parameter	Unit	G / S	RDL	9253271	9253273
Arsenic	µg/g		1	1	1
Barium	µg/g		2	22	21
Boron	µg/g		5	<5	<5
Cadmium	µg/g		0.5	<0.5	<0.5
Chromium	µg/g		2	10	10
Lead	µg/g		1	3	5
Selenium	µg/g		0.4	<0.4	<0.4
Silver	µg/g		0.2	<0.2	<0.2
Uranium	µg/g		0.5	<0.5	<0.5
Cyanide	µg/g		0.040	<0.040	<0.040
Mercury	µg/g		0.10	<0.10	<0.10
Fluoride (2:1)	µg/g		1.0	<1.0	<1.0
Nitrate as N (2:1)	µg/g		1	<1	<1
Nitrite as N (2:1)	µg/g		1	<1	<1

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

9253271 EC,SAR and Anions were determined on the DI water extract obtained from the 2:1 leaching procedure (2 parts DI water:1 part soil). pH was determined on the 0.01M CaCl2 extract prepared at 2:1 ratio.

9253273 EC & SAR were determined on the DI water extract obtained from the 2:1 leaching procedure (2 parts DI water:1 part soil). pH was determined on the 0.01M CaCl2 extract prepared at 2:1 ratio.

Certified By: Amanjot Bhela

Results relate only to the items tested and to all the items tested

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
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Certificate of Analysis

AGAT WORK ORDER: 18T339821

PROJECT: 41 Essa

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

ATTENTION TO: Jennifer Thompson

SAMPLING SITE:

SAMPLED BY:

O. Reg. 558 Metals and Inorganics

DATE RECEIVED: 2018-05-16

DATE REPORTED: 2018-05-30

		SAMPLE DESCRIPTION:		TP-6-3	TP-1-3
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2018-05-14	2018-05-14
Parameter	Unit	G / S	RDL	9253271	9253273
Arsenic Leachate	mg/L		0.010	<0.010	<0.010
Barium Leachate	mg/L		0.100	0.203	0.190
Boron Leachate	mg/L		0.050	<0.050	<0.050
Cadmium Leachate	mg/L		0.010	<0.010	<0.010
Chromium Leachate	mg/L		0.010	0.012	0.013
Lead Leachate	mg/L		0.010	<0.010	0.022
Mercury Leachate	mg/L		0.01	<0.01	<0.01
Selenium Leachate	mg/L		0.010	<0.010	<0.010
Silver Leachate	mg/L		0.010	<0.010	<0.010
Uranium Leachate	mg/L		0.050	<0.050	<0.050
Fluoride Leachate	mg/L		0.05	0.11	0.06
Cyanide Leachate	mg/L		0.05	<0.05	<0.05
(Nitrate + Nitrite) as N Leachate	mg/L		0.70	<0.70	<0.70

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Certified By: Amanjot Bhela

Results relate only to the items tested and to all the items tested

AGAT Laboratories

5835 COOPERS AVENUE
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http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 18T339821

PROJECT: 41 Essa

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

ATTENTION TO: Jennifer Thompson

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - BNA (full) + PAHs (Soil)

DATE RECEIVED: 2018-05-16

DATE REPORTED: 2018-05-30

		SAMPLE DESCRIPTION:		TP-6-3		TP-1-3
		SAMPLE TYPE:		Soil		Soil
		DATE SAMPLED:		2018-05-14		2018-05-14
Parameter	Unit	G / S	RDL	9253271	RDL	9253273
Naphthalene	µg/g		0.50	<0.50	0.05	24
Acenaphthylene	µg/g		0.50	1.2	0.05	<0.05
Acenaphthene	µg/g		0.50	<0.50	0.05	<0.05
Fluorene	µg/g		0.50	9.1	0.05	0.30
Phenanthrene	µg/g		0.50	17	0.05	0.56
Anthracene	µg/g		0.50	2.9	0.05	<0.05
Fluoranthene	µg/g		0.50	<0.50	0.05	<0.05
Pyrene	µg/g		0.50	1.3	0.05	0.07
Benz(a)anthracene	µg/g		0.50	<0.50	0.05	<0.05
Chrysene	µg/g		0.50	<0.50	0.05	<0.05
Benzo(b)fluoranthene	µg/g		0.50	<0.50	0.05	<0.05
Benzo(k)fluoranthene	µg/g		0.50	<0.50	0.05	<0.05
Benzo(a)pyrene	µg/g		0.50	<0.50	0.05	<0.05
Indeno(1,2,3-cd)pyrene	µg/g		0.50	<0.50	0.05	<0.05
Dibenz(a,h)anthracene	µg/g		0.50	<0.50	0.05	<0.05
Benzo(g,h,i)perylene	µg/g		0.50	<0.50	0.05	<0.05
Phenol	µg/g		5.0	<5.0	0.5	<0.5
Bis(2-chloroethyl)ether	µg/g		1.0	<1.0	0.1	<0.1
2-Chlorophenol	µg/g		1.0	<1.0	0.1	<0.1
o-Cresol	µg/g		1.0	<1.0	0.1	<0.1
Bis(2-chloroisopropyl)ether	µg/g		1.0	<1.0	0.1	<0.1
m & p - Cresol	µg/g		1.0	<1.0	0.1	<0.1
2,4-Dimethylphenol	µg/g		2.0	<2.0	0.2	<0.2
2,4-Dichlorophenol	µg/g		1.0	<1.0	0.1	<0.1
1,2,4-Trichlorobenzene	µg/g		0.50	<0.50	0.05	<0.05
p-Chloroaniline	µg/g		5.0	<5.0	0.5	<0.5
2-and 1-methyl Naphthalene	µg/g		0.50	55	0.05	46
2,4,6-Trichlorophenol	µg/g		1.0	<1.0	0.1	<0.1
2,4,5-Trichlorophenol	µg/g		1.0	<1.0	0.1	<0.1
1,1-Biphenyl	µg/g		0.50	<0.50	0.05	0.36

Certified By:

Results relate only to the items tested and to all the items tested

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 18T339821

PROJECT: 41 Essa

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

ATTENTION TO: Jennifer Thompson

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - BNA (full) + PAHs (Soil)

DATE RECEIVED: 2018-05-16 **DATE REPORTED: 2018-05-30**

		SAMPLE DESCRIPTION:		TP-6-3		TP-1-3
		SAMPLE TYPE:		Soil		Soil
		DATE SAMPLED:		2018-05-14		2018-05-14
Parameter	**Unit**	**G / S**	**RDL**	**9253271**	**RDL**	**9253273**
Dimethyl Phthalate	µg/g		1.0	<1.0	0.1	<0.1
2,4 and 2,6-Dinitrotoluene	µg/g		5.0	<5.0	0.5	<0.5
Diethyl Phthalate	µg/g		1.0	<1.0	0.1	<0.1
Pentachlorophenol	µg/g		1.0	<1.0	0.1	<0.1
3,3'-Dichlorobenzidine	µg/g		5.0	<5.0	0.5	<0.5
Bis(2-Ethylhexyl)phthalate	µg/g		2.0	<2.0	0.2	<0.2
2,4-Dinitrophenol	µg/g		20.0	<20.0	2.0	<2.0
Moisture Content	%		0.1	15.3	0.1	14.4
Surrogate	**Unit**	**Acceptable Limits**				
2,4,6-Tribromophenol	%	50-140		77		77
Chrysene-d12	%	50-140		60		62

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

9253271 Dilution Factor=10
The sample extract was diluted due to the nature of the sample. The reporting detection limit was adjusted.
Results are based on the dry weight of the soil.
Note: The result for Benzo(b)Fluoranthene is the total of the Benzo(b)&(j)Fluoranthene isomers because the isomers co-elute on the GC column.

9253273 Results are based on the dry weight of the soil.
Note: The result for Benzo(b)Fluoranthene is the total of the Benzo(b)&(j)Fluoranthene isomers because the isomers co-elute on the GC column.

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 18T339821

PROJECT: 41 Essa

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

ATTENTION TO: Jennifer Thompson

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - PHCs F1 - F4 (with PAHs) (Soil)

DATE RECEIVED: 2018-05-16 **DATE REPORTED: 2018-05-30**

		SAMPLE DESCRIPTION:		TP-6-3	TP-1-3
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2018-05-14	2018-05-14
Parameter	Unit	G / S	RDL	9253271	9253273
F1 (C6 to C10)	µg/g		5	490	4000
F1 (C6 to C10) minus BTEX	µg/g		5	490	3600
F2 (C10 to C16)	µg/g		10	3100	1100
F2 (C10 to C16) minus Naphthalene	µg/g		10	3100	1100
F3 (C16 to C34)	µg/g		50	1200	<50
F3 (C16 to C34) minus PAHs	µg/g		50	1200	<50
F4 (C34 to C50)	µg/g		50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g		50	NA	NA
Moisture Content	%		0.1	15.3	14.4
Surrogate	**Unit**	**Acceptable Limits**			
Terphenyl	%	60-140		120	97

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

9253271-9253273 Results are based on sample dry weight.
The C6-C10 fraction is calculated using toluene response factor.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
The chromatogram has returned to baseline by the retention time of nC50.
Total C6 - C50 results are corrected for BTEX and PAH contributions.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.

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AGAT WORK ORDER: 18T339821

PROJECT: 41 Essa

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

SAMPLING SITE:

ATTENTION TO: Jennifer Thompson

SAMPLED BY:

O. Reg. 153(511) - VOCs (Soil)

DATE RECEIVED: 2018-05-16 **DATE REPORTED: 2018-05-30**

		SAMPLE DESCRIPTION:		TP-6-3	TP-1-3
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2018-05-14	2018-05-14
Parameter	Unit	G / S	RDL	9253271	9253273
Dichlorodifluoromethane	µg/g		0.05	<0.05	<0.05
Vinyl Chloride	ug/g		0.02	<0.02	<0.02
Bromomethane	ug/g		0.05	<0.05	<0.05
Trichlorofluoromethane	ug/g		0.05	<0.05	<0.05
Acetone	ug/g		0.50	<0.50	<0.50
1,1-Dichloroethylene	ug/g		0.05	<0.05	<0.05
Methylene Chloride	ug/g		0.05	<0.05	<0.05
Trans- 1,2-Dichloroethylene	ug/g		0.05	<0.05	<0.05
Methyl tert-butyl Ether	ug/g		0.05	<0.05	<0.05
1,1-Dichloroethane	ug/g		0.02	<0.02	<0.02
Methyl Ethyl Ketone	ug/g		0.50	<0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g		0.02	<0.02	<0.02
Chloroform	ug/g		0.04	<0.04	<0.04
1,2-Dichloroethane	ug/g		0.03	<0.03	<0.03
1,1,1-Trichloroethane	ug/g		0.05	<0.05	<0.05
Carbon Tetrachloride	ug/g		0.05	<0.05	<0.05
Benzene	ug/g		0.02	<0.02	<0.02
1,2-Dichloropropane	ug/g		0.03	<0.03	<0.03
Trichloroethylene	ug/g		0.03	<0.03	<0.03
Bromodichloromethane	ug/g		0.05	<0.05	<0.05
Methyl Isobutyl Ketone	ug/g		0.50	<0.50	<0.50
1,1,2-Trichloroethane	ug/g		0.04	<0.04	<0.04
Toluene	ug/g		0.02	<0.02	59
Dibromochloromethane	ug/g		0.05	<0.05	<0.05
Ethylene Dibromide	ug/g		0.04	<0.04	<0.04
Tetrachloroethylene	ug/g		0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g		0.04	<0.04	<0.04
Chlorobenzene	ug/g		0.05	<0.05	<0.05
Ethylbenzene	ug/g		0.05	0.06	51
m & p-Xylene	ug/g		0.05	0.36	230

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 18T339821

PROJECT: 41 Essa

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

ATTENTION TO: Jennifer Thompson

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - VOCs (Soil)

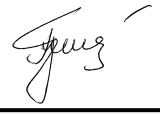
DATE RECEIVED: 2018-05-16 **DATE REPORTED: 2018-05-30**

		SAMPLE DESCRIPTION:		TP-6-3	TP-1-3
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2018-05-14	2018-05-14
Parameter	**Unit**	**G / S**	**RDL**	**9253271**	**9253273**
Bromoform	ug/g		0.05	<0.05	<0.05
Styrene	ug/g		0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g		0.05	<0.05	<0.05
o-Xylene	ug/g		0.05	0.27	95
1,3-Dichlorobenzene	ug/g		0.05	<0.05	<0.05
1,4-Dichlorobenzene	ug/g		0.05	<0.05	<0.05
1,2-Dichlorobenzene	ug/g		0.05	<0.05	<0.05
Xylene Mixture	ug/g		0.05	0.63	330
1,3-Dichloropropene	µg/g		0.04	<0.04	<0.04
n-Hexane	µg/g		0.05	1.0	42
Surrogate	**Unit**	**Acceptable Limits**			
Toluene-d8	% Recovery	50-140		110	107
4-Bromofluorobenzene	% Recovery	50-140		103	121

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

9253271-9253273 The sample was analysed using the high level technique. The sample was extracted using methanol, a small amount of the methanol extract was diluted in water and the purge & trap GC/MS analysis was performed. Results are based on the dry weight of the soil.

Certified By:



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Quality Assurance

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

AGAT WORK ORDER: 18T339821

PROJECT: 41 Essa

ATTENTION TO: Jennifer Thompson

SAMPLING SITE:

SAMPLED BY:

Soil Analysis

RPT Date: May 30, 2018			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals & Inorganics (Soil)															
Arsenic	9259813		3	3	NA	< 1	105%	70%	130%	102%	80%	120%	103%	70%	130%
Barium	9259813		58	55	5.3%	< 2	100%	70%	130%	100%	80%	120%	97%	70%	130%
Boron	9259813		7	7	NA	< 5	74%	70%	130%	117%	80%	120%	88%	70%	130%
Cadmium	9259813		<0.5	<0.5	NA	< 0.5	90%	70%	130%	104%	80%	120%	104%	70%	130%
Chromium	9259813		17	16	6.1%	< 2	89%	70%	130%	101%	80%	120%	96%	70%	130%
Lead	9259813		7	7	0.0%	< 1	107%	70%	130%	107%	80%	120%	101%	70%	130%
Selenium	9259813		<0.4	<0.4	NA	< 0.4	115%	70%	130%	99%	80%	120%	99%	70%	130%
Silver	9259813		<0.2	<0.2	NA	< 0.2	95%	70%	130%	100%	80%	120%	97%	70%	130%
Uranium	9259813		0.5	0.5	NA	< 0.5	103%	70%	130%	98%	80%	120%	96%	70%	130%
Cyanide	9255741		<0.040	<0.040	NA	< 0.040	106%	70%	130%	101%	80%	120%	92%	70%	130%
Mercury	9259813		<0.10	<0.10	NA	< 0.10	100%	70%	130%	98%	80%	120%	98%	70%	130%
Fluoride (2:1)	9262602		<1.0	<1.0	NA	< 1.0	98%	70%	130%	97%	70%	130%	113%	70%	130%
Nitrate as N (2:1)	9262602		<1	<1	NA	< 1	92%	70%	130%	100%	70%	130%	102%	70%	130%
Nitrite as N (2:1)	9262602		<1	<1	NA	< 1	NA			97%	70%	130%	95%	70%	130%
O. Reg. 558 Metals and Inorganics															
Arsenic Leachate	9255171		0.013	0.013	NA	< 0.010	103%	90%	110%	95%	80%	120%	110%	70%	130%
Barium Leachate	9255171		0.570	0.552	3.2%	< 0.100	101%	90%	110%	108%	80%	120%	119%	70%	130%
Boron Leachate	9255171		0.056	<0.050	NA	< 0.050	106%	90%	110%	101%	80%	120%	84%	70%	130%
Cadmium Leachate	9255171		<0.010	<0.010	NA	< 0.010	103%	90%	110%	107%	80%	120%	119%	70%	130%
Chromium Leachate	9255171		<0.010	<0.010	NA	< 0.010	105%	90%	110%	114%	80%	120%	127%	70%	130%
Lead Leachate	9255171		0.038	0.036	NA	< 0.010	105%	90%	110%	102%	80%	120%	102%	70%	130%
Mercury Leachate	9255171		<0.01	<0.01	NA	< 0.01	96%	90%	110%	98%	80%	120%	102%	70%	130%
Selenium Leachate	9255171		<0.010	<0.010	NA	< 0.010	102%	90%	110%	106%	80%	120%	118%	70%	130%
Silver Leachate	9255171		<0.010	<0.010	NA	< 0.010	99%	90%	110%	104%	80%	120%	99%	70%	130%
Uranium Leachate	9255171		<0.050	<0.050	NA	< 0.050	98%	90%	110%	98%	80%	120%	100%	70%	130%
Fluoride Leachate	9257091		0.22	0.22	NA	< 0.05	102%	90%	110%	106%	90%	110%	99%	70%	130%
Cyanide Leachate	9255171		<0.05	<0.05	NA	< 0.05	106%	90%	110%	101%	90%	110%	96%	70%	130%
(Nitrate + Nitrite) as N Leachate	9255171		<0.70	<0.70	NA	< 0.70	98%	80%	120%	93%	80%	120%	98%	70%	130%

Comments: NA signifies Not Applicable.
Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By: Amanjot Bhela

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Quality Assurance

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

AGAT WORK ORDER: 18T339821

PROJECT: 41 Essa

ATTENTION TO: Jennifer Thompson

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis

RPT Date: May 30, 2018

PARAMETER	Batch	Sample Id	DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
			Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - BNA (full) + PAHs (Soil)															
Naphthalene	9210286		< 0.05	< 0.05	NA	< 0.05	113%	50%	140%	92%	50%	140%	103%	50%	140%
Acenaphthylene	9210286		< 0.05	< 0.05	NA	< 0.05	92%	50%	140%	103%	50%	140%	105%	50%	140%
Acenaphthene	9210286		< 0.05	< 0.05	NA	< 0.05	101%	50%	140%	105%	50%	140%	106%	50%	140%
Fluorene	9210286		< 0.05	< 0.05	NA	< 0.05	101%	50%	140%	87%	50%	140%	107%	50%	140%
Phenanthrene	9210286		< 0.05	< 0.05	NA	< 0.05	118%	50%	140%	118%	50%	140%	94%	50%	140%
Anthracene	9210286		< 0.05	< 0.05	NA	< 0.05	118%	50%	140%	95%	50%	140%	109%	50%	140%
Fluoranthene	9210286		0.05	< 0.05	NA	< 0.05	112%	50%	140%	117%	50%	140%	71%	50%	140%
Pyrene	9210286		< 0.05	< 0.05	NA	< 0.05	102%	50%	140%	107%	50%	140%	85%	50%	140%
Benz(a)anthracene	9210286		< 0.05	< 0.05	NA	< 0.05	113%	50%	140%	116%	50%	140%	91%	50%	140%
Chrysene	9210286		< 0.05	< 0.05	NA	< 0.05	99%	50%	140%	83%	50%	140%	104%	50%	140%
Benzo(b)fluoranthene	9210286		< 0.05	< 0.05	NA	< 0.05	109%	50%	140%	79%	50%	140%	91%	50%	140%
Benzo(k)fluoranthene	9210286		< 0.05	< 0.05	NA	< 0.05	119%	50%	140%	65%	50%	140%	115%	50%	140%
Benzo(a)pyrene	9210286		< 0.05	< 0.05	NA	< 0.05	105%	50%	140%	102%	50%	140%	105%	50%	140%
Indeno(1,2,3-cd)pyrene	9210286		< 0.05	< 0.05	NA	< 0.05	117%	50%	140%	85%	50%	140%	84%	50%	140%
Dibenz(a,h)anthracene	9210286		< 0.05	< 0.05	NA	< 0.05	100%	50%	140%	81%	50%	140%	61%	50%	140%
Benzo(g,h,i)perylene	9210286		< 0.05	< 0.05	NA	< 0.05	111%	50%	140%	96%	50%	140%	84%	50%	140%
Phenol	9210286		< 0.5	< 0.5	NA	< 0.5	92%	30%	130%	85%	30%	130%	98%	30%	130%
Bis(2-chloroethyl)ether	9210286		< 0.1	< 0.1	NA	< 0.1	93%	50%	140%	82%	50%	140%	81%	50%	140%
2-Chlorophenol	9210286		< 0.1	< 0.1	NA	< 0.1	105%	50%	140%	64%	50%	140%	83%	50%	140%
o-Cresol	9210286		< 0.1	< 0.1	NA	< 0.1	94%	50%	140%	78%	50%	140%	75%	50%	140%
Bis(2-chloroisopropyl)ether	9210286		< 0.1	< 0.1	NA	< 0.1	97%	50%	140%	93%	50%	140%	81%	50%	140%
m & p - Cresol	9210286		< 0.1	< 0.1	NA	< 0.1	106%	50%	140%	72%	50%	140%	97%	50%	140%
2,4-Dimethylphenol	9210286		< 0.2	< 0.2	NA	< 0.2	97%	30%	130%	108%	30%	130%	93%	30%	130%
2,4-Dichlorophenol	9210286		< 0.1	< 0.1	NA	< 0.1	108%	50%	140%	67%	50%	140%	92%	50%	140%
1,2,4-Trichlorobenzene	9210286		< 0.05	< 0.05	NA	< 0.05	106%	50%	140%	74%	50%	140%	95%	50%	140%
p-Chloroaniline	9210286		< 0.5	< 0.5	NA	< 0.5	107%	30%	130%	68%	30%	130%	84%	30%	130%
2-and 1-methyl Naphthalene	9210286		< 0.05	< 0.05	NA	< 0.05	115%	50%	140%	96%	50%	140%	95%	50%	140%
2,4,6-Trichlorophenol	9210286		< 0.1	< 0.1	NA	< 0.1	109%	50%	140%	70%	50%	140%	77%	50%	140%
2,4,5-Trichlorophenol	9210286		< 0.1	< 0.1	NA	< 0.1	113%	50%	140%	77%	50%	140%	108%	50%	140%
1,1-Biphenyl	9210286		< 0.05	< 0.05	NA	< 0.05	NA	50%	140%	80%	50%	140%	103%	50%	140%
Dimethyl Phthalate	9210286		< 0.1	< 0.1	NA	< 0.1	110%	50%	140%	106%	50%	140%	104%	50%	140%
2,4 and 2,6-Dinitrotoluene	9210286		< 0.5	< 0.5	NA	< 0.5	103%	50%	140%	65%	50%	140%	90%	50%	140%
Diethyl Phthalate	9210286		< 0.1	< 0.1	NA	< 0.1	76%	50%	140%	73%	50%	140%	89%	50%	140%
Pentachlorophenol	9210286		< 0.1	< 0.1	NA	< 0.1	97%	50%	140%	107%	50%	140%	102%	50%	140%
3,3'-Dichlorobenzidine	9210286		< 0.5	< 0.5	NA	< 0.5	114%	30%	130%	92%	30%	130%	101%	30%	130%
Bis(2-Ethylhexyl)phthalate	9210286		< 0.2	< 0.2	NA	< 0.2	109%	50%	140%	111%	50%	140%	70%	50%	140%
2,4-Dinitrophenol	9210286		< 2.0	< 2.0	NA	< 2.0	79%	30%	130%	69%	30%	130%	64%	30%	130%

O. Reg. 153(511) - PHCs F1 - F4 (with PAHs) (Soil)

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http://www.agatlabs.com

Quality Assurance

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

AGAT WORK ORDER: 18T339821

PROJECT: 41 Essa

ATTENTION TO: Jennifer Thompson

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis (Continued)

RPT Date: May 30, 2018			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
F1 (C6 to C10)	9257431		< 5	< 5	NA	< 5	106%	60%	130%	108%	85%	115%	81%	70%	130%
F2 (C10 to C16)	9235846		< 10	< 10	NA	< 10	96%	60%	130%	92%	80%	120%	103%	70%	130%
F3 (C16 to C34)	9235846		< 50	< 50	NA	< 50	93%	60%	130%	102%	80%	120%	108%	70%	130%
F4 (C34 to C50)	9235846		< 50	< 50	NA	< 50	85%	60%	130%	109%	80%	120%	88%	70%	130%
O. Reg. 153(511) - VOCs (Soil)															
Dichlorodifluoromethane	9253368		< 0.05	< 0.05	NA	< 0.05	90%	50%	140%	90%	50%	140%	76%	50%	140%
Vinyl Chloride	9253368		< 0.02	< 0.02	NA	< 0.02	79%	50%	140%	87%	50%	140%	85%	50%	140%
Bromomethane	9253368		< 0.05	< 0.05	NA	< 0.05	88%	50%	140%	81%	50%	140%	84%	50%	140%
Trichlorofluoromethane	9253368		< 0.05	< 0.05	NA	< 0.05	109%	50%	140%	75%	50%	140%	88%	50%	140%
Acetone	9253368		< 0.50	< 0.50	NA	< 0.50	108%	50%	140%	90%	50%	140%	84%	50%	140%
1,1-Dichloroethylene	9253368		< 0.05	< 0.05	NA	< 0.05	111%	50%	140%	82%	60%	130%	92%	50%	140%
Methylene Chloride	9253368		< 0.05	< 0.05	NA	< 0.05	105%	50%	140%	102%	60%	130%	96%	50%	140%
Trans- 1,2-Dichloroethylene	9253368		< 0.05	< 0.05	NA	< 0.05	79%	50%	140%	83%	60%	130%	85%	50%	140%
Methyl tert-butyl Ether	9253368		< 0.05	< 0.05	NA	< 0.05	80%	50%	140%	107%	60%	130%	118%	50%	140%
1,1-Dichloroethane	9253368		< 0.02	< 0.02	NA	< 0.02	93%	50%	140%	93%	60%	130%	87%	50%	140%
Methyl Ethyl Ketone	9253368		< 0.50	< 0.50	NA	< 0.50	114%	50%	140%	93%	50%	140%	101%	50%	140%
Cis- 1,2-Dichloroethylene	9253368		< 0.02	< 0.02	NA	< 0.02	91%	50%	140%	89%	60%	130%	102%	50%	140%
Chloroform	9253368		< 0.04	< 0.04	NA	< 0.04	90%	50%	140%	103%	60%	130%	109%	50%	140%
1,2-Dichloroethane	9253368		< 0.03	< 0.03	NA	< 0.03	88%	50%	140%	90%	60%	130%	114%	50%	140%
1,1,1-Trichloroethane	9253368		< 0.05	< 0.05	NA	< 0.05	94%	50%	140%	86%	60%	130%	83%	50%	140%
Carbon Tetrachloride	9253368		< 0.05	< 0.05	NA	< 0.05	88%	50%	140%	99%	60%	130%	99%	50%	140%
Benzene	9253368		< 0.02	< 0.02	NA	< 0.02	86%	50%	140%	89%	60%	130%	103%	50%	140%
1,2-Dichloropropane	9253368		< 0.03	< 0.03	NA	< 0.03	93%	50%	140%	94%	60%	130%	93%	50%	140%
Trichloroethylene	9253368		< 0.03	< 0.03	NA	< 0.03	101%	50%	140%	84%	60%	130%	112%	50%	140%
Bromodichloromethane	9253368		< 0.05	< 0.05	NA	< 0.05	111%	50%	140%	94%	60%	130%	110%	50%	140%
Methyl Isobutyl Ketone	9253368		< 0.50	< 0.50	NA	< 0.50	78%	50%	140%	82%	50%	140%	82%	50%	140%
1,1,2-Trichloroethane	9253368		< 0.04	< 0.04	NA	< 0.04	96%	50%	140%	98%	60%	130%	109%	50%	140%
Toluene	9253368		< 0.02	< 0.02	NA	< 0.02	107%	50%	140%	106%	60%	130%	120%	50%	140%
Dibromochloromethane	9253368		< 0.05	< 0.05	NA	< 0.05	75%	50%	140%	75%	60%	130%	86%	50%	140%
Ethylene Dibromide	9253368		< 0.04	< 0.04	NA	< 0.04	111%	50%	140%	86%	60%	130%	99%	50%	140%
Tetrachloroethylene	9253368		< 0.05	< 0.05	NA	< 0.05	107%	50%	140%	94%	60%	130%	102%	50%	140%
1,1,1,2-Tetrachloroethane	9253368		< 0.04	< 0.04	NA	< 0.04	92%	50%	140%	80%	60%	130%	94%	50%	140%
Chlorobenzene	9253368		< 0.05	< 0.05	NA	< 0.05	92%	50%	140%	102%	60%	130%	113%	50%	140%
Ethylbenzene	9253368		< 0.05	< 0.05	NA	< 0.05	95%	50%	140%	100%	60%	130%	93%	50%	140%
m & p-Xylene	9253368		< 0.05	< 0.05	NA	< 0.05	102%	50%	140%	106%	60%	130%	117%	50%	140%
Bromoform	9253368		< 0.05	< 0.05	NA	< 0.05	71%	50%	140%	72%	60%	130%	89%	50%	140%
Styrene	9253368		< 0.05	< 0.05	NA	< 0.05	84%	50%	140%	92%	60%	130%	101%	50%	140%
1,1,2,2-Tetrachloroethane	9253368		< 0.05	< 0.05	NA	< 0.05	96%	50%	140%	71%	60%	130%	76%	50%	140%
o-Xylene	9253368		< 0.05	< 0.05	NA	< 0.05	97%	50%	140%	106%	60%	130%	115%	50%	140%

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Quality Assurance

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

AGAT WORK ORDER: 18T339821

PROJECT: 41 Essa

ATTENTION TO: Jennifer Thompson

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis (Continued)

RPT Date: May 30, 2018			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
1,3-Dichlorobenzene	9253368		< 0.05	< 0.05	NA	< 0.05	74%	50%	140%	98%	60%	130%	102%	50%	140%
1,4-Dichlorobenzene	9253368		< 0.05	< 0.05	NA	< 0.05	81%	50%	140%	96%	60%	130%	93%	50%	140%
1,2-Dichlorobenzene	9253368		< 0.05	< 0.05	NA	< 0.05	81%	50%	140%	97%	60%	130%	114%	50%	140%
1,3-Dichloropropene	9253368		< 0.04	< 0.04	NA	< 0.04	94%	50%	140%	79%	60%	130%	81%	50%	140%
n-Hexane	9253368		< 0.05	< 0.05	NA	< 0.05	115%	50%	140%	105%	60%	130%	97%	50%	140%

Comments: When the average of the sample and duplicate results is less than 5x the RDL, the Relative Percent Difference (RPD) will be indicated as Not Applicable (NA).

Certified By:

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Method Summary

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

AGAT WORK ORDER: 18T339821

PROJECT: 41 Essa

ATTENTION TO: Jennifer Thompson

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Arsenic	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Barium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Cadmium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Lead	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Selenium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Silver	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Uranium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Cyanide	INOR-93-6052	MOE CN-3015 & E 3009 A;SM 4500 CN	TECHNICON AUTO ANALYZER
Mercury	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Fluoride (2:1)	INOR-93-6004	McKeague 4.12 & SM 4110 B	ION CHROMATOGRAPH
Nitrate as N (2:1)	INOR-93-6004	McKeague 4.12 & SM 4110 B	ION CHROMATOGRAPH
Nitrite as N (2:1)	INOR-93-6004	McKeague 4.12 & SM 4110 B	ION CHROMATOGRAPH
Arsenic Leachate	MET-93-6103	EPA SW-846 1311 & 3010A & 6020A	ICP-MS
Barium Leachate	MET-93-6103	EPA SW-846 1311 & 3010A & 6020A	ICP-MS
Boron Leachate	MET-93-6103	EPA SW-846 1311 & 3010A & 6020A	ICP-MS
Cadmium Leachate	MET-93-6103	EPA SW-846 1311 & 3010A & 6020A	ICP-MS
Chromium Leachate	MET-93-6103	EPA SW-846 1311 & 3010A & 6020A	ICP-MS
Lead Leachate	MET-93-6103	EPA SW-846 1311 & 3010A & 6020A	ICP-MS
Mercury Leachate	MET-93-6103	EPA SW-846 1311 & 3010A & 6020A	ICP-MS
Selenium Leachate	MET-93-6103	EPA SW-846 1311 & 3010A & 6020A	ICP-MS
Silver Leachate	MET-93-6103	EPA SW-846 1311 & 3010A & 6020A	ICP-MS
Uranium Leachate	MET-93-6103	EPA SW-846 1311 & 3010A & 6020A	ICP-MS
Fluoride Leachate	INOR-93-6018	EPA SW-846-1311 & SM4500-F- C	ION SELECTIVE ELECTRODE
Cyanide Leachate	INOR-93-6052	EPA SW-846-1311 & MOE 3015 & SM 4500 CN- I	TECHNICON AUTO ANALYZER
(Nitrate + Nitrite) as N Leachate	INOR-93-6053	EPA SW 846-1311 & SM 4500 - NO3- I	LACHAT FIA

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Method Summary

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AGAT WORK ORDER: 18T339821

PROJECT: 41 Essa

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Naphthalene	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
Acenaphthylene	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
Acenaphthene	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
Fluorene	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
Phenanthrene	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
Anthracene	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
Fluoranthene	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
Pyrene	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
Benz(a)anthracene	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
Chrysene	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
Benzo(b)fluoranthene	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
Benzo(k)fluoranthene	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
Benzo(a)pyrene	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
Dibenz(a,h)anthracene	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
Benzo(g,h,i)perylene	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
Phenol	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
Bis(2-chloroethyl)ether	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
2-Chlorophenol	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
o-Cresol	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
Bis(2-chloroisopropyl)ether	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
m & p - Cresol	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
2,4-Dimethylphenol	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
2,4-Dichlorophenol	ORG-91-5114	EPA SW-846 3510C & 8270D	GC/MS
1,2,4-Trichlorobenzene	ORG-91-5114	EPA SW-846 3541 & 8270	GC/MS
p-Chloroaniline	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
2-and 1-methyl Naphthalene	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
2,4,6-Trichlorophenol	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
2,4,5-Trichlorophenol	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
1,1-Biphenyl	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
Dimethyl Phthalate	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
2,4 and 2,6-Dinitrotoluene	ORG-91-5114	EPA SW-846 3541 & 8270	GC/MS
Diethyl Phthalate	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
Pentachlorophenol	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
3,3'-Dichlorobenzidine	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
Bis(2-Ethylhexyl)phthalate	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
2,4-Dinitrophenol	ORG-91-5114	EPA SW-846 3541 & 8270	GC/MS
Moisture Content		MOE E3139	BALANCE
2,4,6-Tribromophenol	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
Chrysene-d12	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
F1 (C6 to C10)	VOL-91-5009	CCME Tier 1 Method	GC / FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	CCME Tier 1 Method	GC / FID
F2 (C10 to C16)	VOL-91-5009	CCME Tier 1 Method	GC / FID
F2 (C10 to C16) minus Naphthalene	VOL-91-5009	CCME Tier 1 Method	GC / FID
F3 (C16 to C34)	VOL-91-5009	CCME Tier 1 Method	GC / FID
F3 (C16 to C34) minus PAHs	VOL-91-5009	CCME Tier 1 Method	GC / FID
F4 (C34 to C50)	VOL-91-5009	CCME Tier 1 Method	GC / FID
Gravimetric Heavy Hydrocarbons	VOL-91-5009	CCME Tier 1 Method	BALANCE
Moisture Content	VOL-91-5009	CCME Tier 1 Method	BALANCE

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Method Summary

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AGAT WORK ORDER: 18T339821

PROJECT: 41 Essa

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SAMPLING SITE:

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Terphenyl	VOL-91-5009		GC/FID
Dichlorodifluoromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Vinyl Chloride	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Bromomethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Acetone	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methylene Chloride	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Trans- 1,2-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methyl tert-butyl Ether	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Cis- 1,2-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Chloroform	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Benzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Trichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Bromodichloromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Toluene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Dibromochloromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Chlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Ethylbenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
m & p-Xylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Bromoform	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Styrene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
o-Xylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Xylene Mixture	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,3-Dichloropropene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
n-Hexane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Toluene-d8	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS

Results relate only to the items tested and to all the items tested

AGAT Laboratories

5835 Coopers Avenue
Mississauga, Ontario L4Z 1Y2
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webearth.agatlabs.com

Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans)

Laboratory Use Only

Work Order #: 18T339821

Cooler Quantity: 1 cmr

Arrival Temperatures: 3.9 4.2 4 / 3.6 3.3 3.5

Custody Seal Intact: ☐Yes ☐No ☐N/A

Notes:

Report Information:

Company: Azimuth Environmental Consulting
Contact: Jan Adhesen
Address: 642 Welham Road
Barrie, ON
Phone: Fax:
Reports to be sent to:
1. Email: jadhesen@azimuthenvironmental.com
2. Email: davidb@azimuthenvironmental.com

Regulatory Requirements:

☒ No Regulatory Requirement
(Please check all applicable boxes)

☐ Regulation 153/04
Table (Indicate One) ☐ Ind/Com ☐ Res/Park ☐ Agriculture
Soil Texture (Check One) ☐ Coarse ☐ Fine

☐ Sewer Use
☐ Sanitary ☐ Storm
Region (Indicate One) ☐ MISA

☐ Regulation 558
☐ CCME
☐ Prov. Water Quality Objectives (PWQO)
☐ Other
(Indicate One)

Is this submission for a **Record of Site Condition?** ☐ Yes ☒ No

Report Guideline on *Certificate of Analysis* ☐ Yes ☒ No

Turnaround Time (TAT) Required:

Regular TAT ☒ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

☐ 3 Business Days ☐ 2 Business Days ☐ Next Business Day

OR Date Required (Rush Surcharges May Apply):

Please provide prior notification for rush TAT
**TAT is exclusive of weekends and statutory holidays*

For 'Same Day' analysis, please contact your AGAT CPM

Project Information:

Project: 41 Essa
Site Location: 18-175
Sampled By:
AGAT Quote #: PO:
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

Bill To Same: Yes ☒ No ☐

Company:
Contact:
Address:
Email:

Sample Matrix Legend

B	Biota
GW	Ground Water
O	Oil
P	Paint
S	Soil
SD	Sediment
SW	Surface Water

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI (Y/N)	O. Reg 153: Metals and Inorganics	O. Reg 153: All Metals ☐ 153 Metals (excl. Hydrides)	O. Reg 153: Hydride Metals ☐ 153 Metals (Incl. Hydrides)	O. Reg 153: ORPs: ☐ B-HWS ☐ Cl ☐ CN ☐ Cr^{6+} ☐ EC ☐ FOC ☐ Hg ☐ pH ☐ SAR	Full Metals Scan	Regulation/Custom Metals	Nutrients: ☐ TP ☐ NH_3 ☐ TKN ☐ NO_3 ☐ NO_2 ☐ NO_3+NO_2	Volatiles: ☐ VOC ☐ BTEX ☐ THM	PHCs F1 - F4	ABNs	PAHs	PCBs ☐ Total ☐ Aroclors	Organochlorine Pesticides	TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	Sewer Use	
TP-6-3	14 May 18	13:00	4	S		✓															X (Put on HOLD)
TP-1-3	14 May 18	08:40	5	S		✓															X

Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time
Jan Adhesen	14 May 18	14:00		2018/5/16	4:15
Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time
	2018/5/16	11:05			
Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time

Page 1 of 1

Nº: T070134

Document ID: DIV 78 1511 015

Pink Copy - Client | Yellow Copy - AGAT | White Copy- AGAT

Date Issued: March 16, 2018

AGAT Laboratories

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http://www.agatlabs.com

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,
642 WELHAM ROAD
BARRIE, ON L4N9A1
(705) 721-8451

ATTENTION TO: Ian Acheson

PROJECT: 18-175

AGAT WORK ORDER: 18T401825

SOIL ANALYSIS REVIEWED BY: Amanjot Bhela, Inorganic Supervisor

TRACE ORGANICS REVIEWED BY: Pinkal Patel, Report Reviewer

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Nov 05, 2018

PAGES (INCLUDING COVER): 27

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

Member of: Association of Professional Engineers and Geoscientists of Alberta (APEGA)
Western Enviro-Agricultural Laboratory Association (WEALA)
Environmental Services Association of Alberta (ESAA)

AGAT Laboratories is accredited to ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA) and/or Standards Council of Canada (SCC) for specific tests listed on the scope of accreditation. AGAT Laboratories (Mississauga) is also accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) for specific drinking water tests. Accreditations are location and parameter specific. A complete listing of parameters for each location is available from www.cala.ca and/or www.scc.ca. The tests in this report may not necessarily be included in the scope of accreditation.

Results relate only to the items tested and to all the items tested
All reportable information as specified by ISO 17025:2005 is available from AGAT Laboratories upon request

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Certificate of Analysis

AGAT WORK ORDER: 18T401825

PROJECT: 18-175

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

SAMPLING SITE:

ATTENTION TO: Ian Acheson

SAMPLED BY:Ian Acheson

O. Reg. 153(511) - All Metals (Soil)

DATE RECEIVED: 2018-10-25

DATE REPORTED: 2018-11-05

		SAMPLE DESCRIPTION:		BH309-27	BH309-6	BH305-8	BH308-4	BH308-4-1
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2018-10-23	2018-10-23	2018-10-24	2018-10-24	2018-10-24
Parameter	Unit	G / S	RDL	9654958	9654964	9654984	9654988	9654992
Antimony	µg/g	7.5	0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	1	<1	2	<1	<1
Barium	µg/g	390	2	126	11	129	12	13
Beryllium	µg/g	4	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Boron	µg/g	120	5	5	<5	6	<5	<5
Boron (Hot Water Soluble)	µg/g	1.5	0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Cadmium	µg/g	1.2	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	µg/g	160	2	12	6	12	3	3
Cobalt	µg/g	22	0.5	4.3	1.3	4.1	1.1	0.9
Copper	µg/g	140	1	8	2	8	2	2
Lead	µg/g	120	1	3	2	3	<1	<1
Molybdenum	µg/g	6.9	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel	µg/g	100	1	6	2	6	2	1
Selenium	µg/g	2.4	0.4	0.9	1.2	0.5	1.3	1.0
Silver	µg/g	20	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/g	1	0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Uranium	µg/g	23	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Vanadium	µg/g	86	1	23	15	21	9	8
Zinc	µg/g	340	5	21	6	21	5	<5
Chromium VI	µg/g	8	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Mercury	µg/g	0.27	0.10	<0.10	<0.10	<0.10	<0.10	<0.10

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



Results relate only to the items tested and to all the items tested

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Certificate of Analysis

AGAT WORK ORDER: 18T401825

PROJECT: 18-175

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

SAMPLING SITE:

ATTENTION TO: Ian Acheson

SAMPLED BY:Ian Acheson

O. Reg. 153(511) - ORPs (Soil)

DATE RECEIVED: 2018-10-25

DATE REPORTED: 2018-11-05

		SAMPLE DESCRIPTION:		BH309-3	BH309-10
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2018-10-23	2018-10-23
Parameter	Unit	G / S	RDL	9654928	9654955
pH, 2:1 CaCl2 Extraction	pH Units		NA	7.61	7.84
Fraction Organic Carbon-1	NA		0.003	<0.003	<0.003
Fraction Organic Carbon-2	NA		0.003	<0.003	<0.003
Fraction Organic Carbon-3	NA		0.003	<0.003	<0.003
Fraction Organic Carbon-Avg	NA		0.003	<0.003	<0.003

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

9654928-9654955 pH was determined on the 0.01M CaCl2 extract obtained from 2:1 leaching procedure (2 parts extraction fluid:1 part wet soil).
FOC - Samples were analysed and are reported in triplicate.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

Amanjot Bhela

ASSOCIATION OF THE CHEMICAL PROFESSION OF ONTARIO
CHARTERED
AMANJOT BHELA
CHEMIST

Results relate only to the items tested and to all the items tested

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AGAT WORK ORDER: 18T401825

PROJECT: 18-175

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

SAMPLING SITE:

ATTENTION TO: Ian Acheson

SAMPLED BY:Ian Acheson

O. Reg. 153(511) - BNA (full) + PAHs (Water)

DATE RECEIVED: 2018-10-25

DATE REPORTED: 2018-11-05

		SAMPLE DESCRIPTION:		MW205
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2018-10-24
Parameter	Unit	G / S	RDL	9654981
Naphthalene	µg/L	11	0.20	<0.20
Acenaphthylene	µg/L	1	0.20	<0.20
Acenaphthene	µg/L	4.1	0.20	<0.20
Fluorene	µg/L	120	0.20	<0.20
Phenanthrene	µg/L	1	0.10	<0.10
Anthracene	µg/L	2.4	0.10	<0.10
Fluoranthene	µg/L	0.41	0.20	<0.20
Pyrene	µg/L	4.1	0.20	<0.20
Benz(a)anthracene	µg/L	1	0.20	<0.20
Chrysene	µg/L	0.1	0.10	<0.10
Benzo(b)fluoranthene	µg/L	0.1	0.10	<0.10
Benzo(k)fluoranthene	µg/L	0.1	0.10	<0.10
Benzo(a)pyrene	µg/L	0.01	0.01	<0.01
Indeno(1,2,3-cd)pyrene	µg/L	0.2	0.20	<0.20
Dibenz(a,h)anthracene	µg/L	0.2	0.20	<0.20
Benzo(g,h,i)perylene	µg/L	0.2	0.20	<0.20
Phenol	µg/L	890	1.0	<1.0
Bis(2-chloroethyl)ether	µg/L	5	0.5	<0.5
2-Chlorophenol	µg/L	8.9	0.5	<0.5
o-Cresol	µg/L		0.5	<0.5
Bis(2-chloroisopropyl)ether	µg/L	120	0.5	<0.5
m&p-Cresol	µg/L		0.6	<0.6
2,4-Dimethylphenol	µg/L	59	0.5	<0.5
2,4-Dichlorophenol	µg/L	20	0.3	<0.3
1,2,4-Trichlorobenzene	ug/L	70	0.5	<0.5
p-Chloroaniline	µg/L		1.0	<1.0
2-and 1-methyl Naphthalene	µg/L	3.2	0.5	<0.5
2,4,6-Trichlorophenol	µg/L	2	0.2	<0.2
2,4,5-Trichlorophenol	µg/L	8.9	0.2	<0.2
1,1'-Biphenyl	µg/L	0.5	0.5	<0.5

Certified By: Pinkal Patel

Results relate only to the items tested and to all the items tested

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Certificate of Analysis

AGAT WORK ORDER: 18T401825

PROJECT: 18-175

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

SAMPLING SITE:

ATTENTION TO: Ian Acheson

SAMPLED BY:Ian Acheson

O. Reg. 153(511) - BNA (full) + PAHs (Water)

DATE RECEIVED: 2018-10-25 **DATE REPORTED: 2018-11-05**

		SAMPLE DESCRIPTION:		MW205
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2018-10-24
Parameter	**Unit**	**G / S**	**RDL**	**9654981**
Dimethyl phthalate	µg/L	38	0.5	<0.5
2,4 and 2,6-Dinitrotoluene	µg/L	5	0.5	<0.5
Diethyl phthalate	µg/L	38	0.5	<0.5
Pentachlorophenol	µg/L	30	0.5	<0.5
3,3'-dichlorobenzidine	µg/L	0.5	0.5	<0.5
Bis(2-Ethylhexyl)phthalate	µg/L	10	0.5	<0.5
2,4-Dinitrophenol	µg/L	10	10	<10
Surrogate	**Unit**	**Acceptable Limits**		
2,4,6-Tribromophenol	%	50-140		90
Chrysene-d12	%	50-140		64

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition - Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

9654981 To meet the MOE Reporting limits the sample extract was analysed using two separate GC/MS methods. The full scan BNA method is capable of detecting most of the compounds at the RDLs except for several PAHs. The PAHs were analysed using a SIM mode GC/MS method.
Note: The result for Benzo(b)Fluoranthene is the total of the Benzo(b)&(j)Fluoranthene isomers because the isomers co-elute on the GC column.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: Jinkal Patel

Results relate only to the items tested and to all the items tested

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Certificate of Analysis

AGAT WORK ORDER: 18T401825

PROJECT: 18-175

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

SAMPLING SITE:

ATTENTION TO: Ian Acheson

SAMPLED BY:Ian Acheson

O. Reg. 153(511) - PAHs (Soil)

DATE RECEIVED: 2018-10-25

DATE REPORTED: 2018-11-05

		SAMPLE DESCRIPTION:		BH309-6	BH309-6-1	BH305-8
		SAMPLE TYPE:		Soil	Soil	Soil
		DATE SAMPLED:		2018-10-23	2018-10-23	2018-10-24
Parameter	**Unit**	**G / S**	**RDL**	**9654964**	**9654976**	**9654984**
Naphthalene	µg/g	0.6	0.05	**1.9**	**2.2**	<0.05
Acenaphthylene	µg/g	0.15	0.05	<0.05	<0.05	<0.05
Acenaphthene	µg/g	7.9	0.05	<0.05	<0.05	<0.05
Fluorene	µg/g	62	0.05	<0.05	<0.05	<0.05
Phenanthrene	µg/g	6.2	0.05	0.05	0.07	<0.05
Anthracene	µg/g	0.67	0.05	<0.05	<0.05	<0.05
Fluoranthene	µg/g	0.69	0.05	<0.05	<0.05	<0.05
Pyrene	µg/g	78	0.05	<0.05	<0.05	<0.05
Benz(a)anthracene	µg/g	0.5	0.05	<0.05	<0.05	<0.05
Chrysene	µg/g	7	0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg/g	0.78	0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	µg/g	0.78	0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	µg/g	0.3	0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.38	0.05	<0.05	<0.05	<0.05
Dibenz(a,h)anthracene	µg/g	0.1	0.05	<0.05	<0.05	<0.05
Benzo(g,h,i)perylene	µg/g	6.6	0.05	<0.05	<0.05	<0.05
2-and 1-methyl Naphthalene	µg/g	0.99	0.05	**3.6**	**4.6**	<0.05
Moisture Content	%		0.1	18.3	14.8	18.0
Surrogate	**Unit**	**Acceptable Limits**				
Chrysene-d12	%	50-140		99	99	101

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

9654964-9654984 Results are based on the dry weight of the soil.
Note: The result for Benzo(b)Fluoranthene is the total of the Benzo(b)&j)Fluoranthene isomers because the isomers co-elute on the GC column.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



Results relate only to the items tested and to all the items tested

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Certificate of Analysis

AGAT WORK ORDER: 18T401825

PROJECT: 18-175

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

SAMPLING SITE:

ATTENTION TO: Ian Acheson

SAMPLED BY:Ian Acheson

O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Soil)

DATE RECEIVED: 2018-10-25 **DATE REPORTED: 2018-11-05**

		SAMPLE DESCRIPTION:		BH309-27	BH308-4	BH305-5	BH305-5-1
		SAMPLE TYPE:		Soil	Soil	Soil	Soil
		DATE SAMPLED:		2018-10-23	2018-10-24	2018-10-24	2018-10-24
Parameter	Unit	G / S	RDL	9654958	9654988	9654993	9654995
F1 (C6 to C10)	µg/g	55	5	<5	<5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	55	5	<5	<5	<5	<5
F2 (C10 to C16)	µg/g	98	10	<10	<10	<10	<10
F3 (C16 to C34)	µg/g	300	50	<50	<50	<50	<50
F4 (C34 to C50)	µg/g	2800	50	<50	<50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g	2800	50	NA	NA	NA	NA
Moisture Content	%		0.1	19.3	16.6	16.5	17.5
Surrogate	**Unit**	**Acceptable Limits**					
Terphenyl	%	60-140		65	94	84	101

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

9654958-9654995 Results are based on sample dry weight.
The C6-C10 fraction is calculated using toluene response factor.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
The chromatogram has returned to baseline by the retention time of nC50.
Total C6 - C50 results are corrected for BTEX contributions.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.
Fractions 1-4 are quantified without the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: Pinkal Patel

Results relate only to the items tested and to all the items tested

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 18T401825

PROJECT: 18-175

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

SAMPLING SITE:

ATTENTION TO: Ian Acheson

SAMPLED BY:Ian Acheson

O. Reg. 153(511) - PHCs F1 - F4 (with PAHs) (Soil)

DATE RECEIVED: 2018-10-25 **DATE REPORTED: 2018-11-05**

		SAMPLE DESCRIPTION:		BH309-6	BH305-8
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2018-10-23	2018-10-24
Parameter	**Unit**	**G / S**	**RDL**	**9654964**	**9654984**
F1 (C6 to C10)	µg/g	55	5	**330**	<5
F1 (C6 to C10) minus BTEX	µg/g	55	5	**330**	<5
F2 (C10 to C16)	µg/g	98	10	**120**	<10
F2 (C10 to C16) minus Naphthalene	µg/g		10	120	<10
F3 (C16 to C34)	µg/g	300	50	<50	<50
F3 (C16 to C34) minus PAHs	µg/g		50	<50	<50
F4 (C34 to C50)	µg/g	2800	50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g	2800	50	NA	NA
Moisture Content	%		0.1	18.3	18.0
Surrogate	**Unit**	**Acceptable Limits**			
Terphenyl	%	60-140		63	91

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

9654964-9654984 Results are based on sample dry weight.
The C6-C10 fraction is calculated using toluene response factor.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
The chromatogram has returned to baseline by the retention time of nC50.
Total C6 - C50 results are corrected for BTEX and PAH contributions.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: Jinkal Patel

Results relate only to the items tested and to all the items tested

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 18T401825

PROJECT: 18-175

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

SAMPLING SITE:

ATTENTION TO: Ian Acheson

SAMPLED BY:Ian Acheson

O. Reg. 153(511) - PHCs F1 - F4 (with PAHs) (Water)

DATE RECEIVED: 2018-10-25 **DATE REPORTED: 2018-11-05**

		SAMPLE DESCRIPTION:		MW205
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2018-10-24
Parameter	**Unit**	**G / S**	**RDL**	**9654981**
F1 (C6-C10)	µg/L	750	25	<25
F1 (C6 to C10) minus BTEX	µg/L	750	25	<25
F2 (C10 to C16)	µg/L	150	100	<100
F2 (C10 to C16) minus Naphthalene	µg/L		100	<100
F3 (C16 to C34)	µg/L	500	100	<100
F3 (C16 to C34) minus PAHs	µg/L		100	<100
F4 (C34 to C50)	µg/L	500	100	<100
Gravimetric Heavy Hydrocarbons	µg/L	500	500	NA
Surrogate	**Unit**	**Acceptable Limits**		
Terphenyl	%	60-140		98

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition - Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

9654981 The C6-C10 fraction is calculated using Toluene response factor.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and nC34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16 - C50 and are only determined if the chromatogram of the C34 - C50 Hydrocarbons indicated that hydrocarbons >C50 are present.
The chromatogram has returned to baseline by the retention time of nC50.
Total C6-C50 results are corrected for BTEX and PAH contributions.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: Pinkal Patel

Results relate only to the items tested and to all the items tested

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AGAT WORK ORDER: 18T401825

PROJECT: 18-175

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

SAMPLING SITE:

ATTENTION TO: Ian Acheson

SAMPLED BY:Ian Acheson

O. Reg. 153(511) - VOCs (Soil)

DATE RECEIVED: 2018-10-25 **DATE REPORTED: 2018-11-05**

		SAMPLE DESCRIPTION:		BH309-27	BH309-6	BH305-8	BH308-4	BH305-5	BH305-5-1
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2018-10-23	2018-10-23	2018-10-24	2018-10-24	2018-10-24	2018-10-24
Parameter	Unit	G / S	RDL	9654958	9654964	9654984	9654988	9654993	9654995
Dichlorodifluoromethane	µg/g	16	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	ug/g	0.02	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	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	ug/g	0.1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trans- 1,2-Dichloroethylene	ug/g	0.084	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl tert-butyl Ether	ug/g	0.75	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethane	ug/g	0.47	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Methyl Ethyl Ketone	ug/g	16	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g	1.9	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Chloroform	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
1,2-Dichloroethane	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
1,1,1-Trichloroethane	ug/g	0.38	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzene	ug/g	0.21	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
1,2-Dichloropropane	ug/g	0.05	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Trichloroethylene	ug/g	0.061	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Bromodichloromethane	ug/g	1.5	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl Isobutyl Ketone	ug/g	1.7	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Toluene	ug/g	2.3	0.05	<0.05	0.88	<0.05	<0.05	<0.05	<0.05
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	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Tetrachloroethylene	ug/g	0.28	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g	0.058	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Chlorobenzene	ug/g	2.4	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	ug/g	1.1	0.05	<0.05	**3.0**	<0.05	<0.05	<0.05	<0.05
m & p-Xylene	ug/g		0.05	<0.05	57	<0.05	<0.05	<0.05	<0.05

Certified By:



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Certificate of Analysis

AGAT WORK ORDER: 18T401825

PROJECT: 18-175

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

SAMPLING SITE:

ATTENTION TO: Ian Acheson

SAMPLED BY:Ian Acheson

O. Reg. 153(511) - VOCs (Soil)

DATE RECEIVED: 2018-10-25 **DATE REPORTED: 2018-11-05**

		SAMPLE DESCRIPTION:		BH309-27	BH309-6	BH305-8	BH308-4	BH305-5	BH305-5-1
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2018-10-23	2018-10-23	2018-10-24	2018-10-24	2018-10-24	2018-10-24
Parameter	**Unit**	**G / S**	**RDL**	**9654958**	**9654964**	**9654984**	**9654988**	**9654993**	**9654995**
Bromoform	ug/g	0.27	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Styrene	ug/g	0.7	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
o-Xylene	ug/g		0.05	<0.05	13	<0.05	<0.05	<0.05	<0.05
1,3-Dichlorobenzene	ug/g	4.8	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	ug/g	0.083	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	3.1	0.05	<0.05	**70**	<0.05	<0.05	<0.05	<0.05
1,3-Dichloropropene	µg/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
n-Hexane	µg/g	2.8	0.05	<0.05	0.86	<0.05	<0.05	<0.05	<0.05
Surrogate	**Unit**	**Acceptable Limits**							
Toluene-d8	% Recovery	50-140		109	118	119	114	110	111
4-Bromofluorobenzene	% Recovery	50-140		92	103	101	97	92	92

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

9654958-9654995 The sample was analysed using the high level technique. The sample was extracted using methanol, a small amount of the methanol extract was diluted in water and the purge & trap GC/MS analysis was performed. Results are based on the dry weight of the soil.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



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AGAT WORK ORDER: 18T401825

PROJECT: 18-175

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

SAMPLING SITE:

ATTENTION TO: Ian Acheson

SAMPLED BY:Ian Acheson

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2018-10-25

DATE REPORTED: 2018-11-05

		SAMPLE DESCRIPTION:		MW205
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2018-10-24
Parameter	Unit	G / S	RDL	9654981
Dichlorodifluoromethane	µg/L	590	0.20	<0.20
Vinyl Chloride	µg/L	0.5	0.17	<0.17
Bromomethane	µg/L	0.89	0.20	<0.20
Trichlorofluoromethane	µg/L	150	0.40	<0.40
Acetone	µg/L	2700	1.0	<1.0
1,1-Dichloroethylene	µg/L	1.6	0.30	<0.30
Methylene Chloride	µg/L	50	0.30	<0.30
trans- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20
Methyl tert-butyl ether	µg/L	15	0.20	<0.20
1,1-Dichloroethane	µg/L	5	0.30	<0.30
Methyl Ethyl Ketone	µg/L	1800	1.0	<1.0
cis- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20
Chloroform	µg/L	2.4	0.20	<0.20
1,2-Dichloroethane	µg/L	1.6	0.20	<0.20
1,1,1-Trichloroethane	µg/L	200	0.30	<0.30
Carbon Tetrachloride	µg/L	0.79	0.20	<0.20
Benzene	µg/L	5.0	0.20	0.21
1,2-Dichloropropane	µg/L	5	0.20	<0.20
Trichloroethylene	µg/L	1.6	0.20	<0.20
Bromodichloromethane	µg/L	16	0.20	<0.20
Methyl Isobutyl Ketone	µg/L	640	1.0	<1.0
1,1,2-Trichloroethane	µg/L	4.7	0.20	<0.20
Toluene	µg/L	24	0.20	0.80
Dibromochloromethane	µg/L	25	0.10	<0.10
Ethylene Dibromide	µg/L	0.2	0.10	<0.10
Tetrachloroethylene	µg/L	1.6	0.20	<0.20
1,1,1,2-Tetrachloroethane	µg/L	1.1	0.10	<0.10
Chlorobenzene	µg/L	30	0.10	<0.10
Ethylbenzene	µg/L	2.4	0.10	0.17
m & p-Xylene	µg/L		0.20	0.32

Certified By: Pinkal Patel

Results relate only to the items tested and to all the items tested

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Certificate of Analysis

AGAT WORK ORDER: 18T401825

PROJECT: 18-175

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

SAMPLING SITE:

ATTENTION TO: Ian Acheson

SAMPLED BY:Ian Acheson

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2018-10-25

DATE REPORTED: 2018-11-05

		SAMPLE DESCRIPTION:		MW205
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2018-10-24
Parameter	**Unit**	**G / S**	**RDL**	**9654981**
Bromoform	µg/L	25	0.10	<0.10
Styrene	µg/L	5.4	0.10	<0.10
1,1,2,2-Tetrachloroethane	µg/L	1	0.10	<0.10
o-Xylene	µg/L		0.10	<0.10
1,3-Dichlorobenzene	µg/L	59	0.10	<0.10
1,4-Dichlorobenzene	µg/L	1	0.10	<0.10
1,2-Dichlorobenzene	µg/L	3	0.10	<0.10
1,3-Dichloropropene	µg/L	0.5	0.30	<0.30
Xylene Mixture	µg/L	300	0.20	0.32
n-Hexane	µg/L	51	0.20	0.92
Surrogate	**Unit**	**Acceptable Limits**		
Toluene-d8	% Recovery	50-140		106
4-Bromofluorobenzene	% Recovery	50-140		88

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition - Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



Results relate only to the items tested and to all the items tested

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AGAT WORK ORDER: 18T401825

PROJECT: 18-175

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

SAMPLING SITE:

ATTENTION TO: Ian Acheson

SAMPLED BY:Ian Acheson

O. Reg. 153(511) - Metals (Including Hydrides) (Water)

DATE RECEIVED: 2018-10-25 **DATE REPORTED: 2018-11-05**

		SAMPLE DESCRIPTION:		MW205
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2018-10-24
Parameter	Unit	G / S	RDL	9654981
Antimony	µg/L	6	1.0	<1.0
Arsenic	µg/L	25	1.0	1.6
Barium	µg/L	1000	2.0	305
Beryllium	µg/L	4.0	0.5	<0.5
Boron	µg/L	5000	10.0	100
Cadmium	µg/L	2.7	0.2	<0.2
Chromium	µg/L	50	2.0	4.3
Cobalt	µg/L	3.8	0.5	<0.5
Copper	µg/L	87	1.0	4.1
Lead	µg/L	10	0.5	0.6
Molybdenum	µg/L	70	0.5	2.1
Nickel	µg/L	100	1.0	<1.0
Selenium	µg/L	10	1.0	2.7
Silver	µg/L	1.5	0.2	<0.2
Thallium	µg/L	2	0.3	<0.3
Uranium	µg/L	20	0.5	2.5
Vanadium	µg/L	6.2	0.4	1.2
Zinc	µg/L	1100	5.0	<5.0

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition - Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: Iris Verástegui

Results relate only to the items tested and to all the items tested

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Guideline Violation

AGAT WORK ORDER: 18T401825

PROJECT: 18-175

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CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

ATTENTION TO: Ian Acheson

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
9654964	BH309-6	ON T2 S RPI CT	O. Reg. 153(511) - PAHs (Soil)	2-and 1-methyl Naphthalene	µg/g	0.99	3.6
9654964	BH309-6	ON T2 S RPI CT	O. Reg. 153(511) - PAHs (Soil)	Naphthalene	µg/g	0.6	1.9
9654964	BH309-6	ON T2 S RPI CT	O. Reg. 153(511) - PHCs F1 - F4 (with PAHs) (Soil)	F1 (C6 to C10)	µg/g	55	330
9654964	BH309-6	ON T2 S RPI CT	O. Reg. 153(511) - PHCs F1 - F4 (with PAHs) (Soil)	F1 (C6 to C10) minus BTEX	µg/g	55	330
9654964	BH309-6	ON T2 S RPI CT	O. Reg. 153(511) - PHCs F1 - F4 (with PAHs) (Soil)	F2 (C10 to C16)	µg/g	98	120
9654964	BH309-6	ON T2 S RPI CT	O. Reg. 153(511) - VOCs (Soil)	Ethylbenzene	ug/g	1.1	3.0
9654964	BH309-6	ON T2 S RPI CT	O. Reg. 153(511) - VOCs (Soil)	Xylene Mixture	ug/g	3.1	70
9654976	BH309-6-1	ON T2 S RPI CT	O. Reg. 153(511) - PAHs (Soil)	2-and 1-methyl Naphthalene	µg/g	0.99	4.6
9654976	BH309-6-1	ON T2 S RPI CT	O. Reg. 153(511) - PAHs (Soil)	Naphthalene	µg/g	0.6	2.2

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Quality Assurance

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

AGAT WORK ORDER: 18T401825

PROJECT: 18-175

ATTENTION TO: Ian Acheson

SAMPLING SITE:

SAMPLED BY:Ian Acheson

Soil Analysis

RPT Date: Nov 05, 2018			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - ORPs (Soil)															
pH, 2:1 CaCl2 Extraction	9654888		7.47	7.51	0.5%	NA	99%	90%	110%	NA			NA		
O. Reg. 153(511) - All Metals (Soil)															
Antimony	9654888		<0.8	<0.8	NA	< 0.8	97%	70%	130%	98%	80%	120%	83%	70%	130%
Arsenic	9654888		3	3	NA	< 1	108%	70%	130%	102%	80%	120%	109%	70%	130%
Barium	9654888		65	65	0.0%	< 2	99%	70%	130%	101%	80%	120%	101%	70%	130%
Beryllium	9654888		<0.5	<0.5	NA	< 0.5	85%	70%	130%	104%	80%	120%	107%	70%	130%
Boron	9654888		6	7	NA	< 5	80%	70%	130%	104%	80%	120%	100%	70%	130%
Boron (Hot Water Soluble)	9654958	9654958	<0.10	<0.10	NA	< 0.10	99%	60%	140%	90%	70%	130%	92%	60%	140%
Cadmium	9654888		<0.5	<0.5	NA	< 0.5	100%	70%	130%	99%	80%	120%	103%	70%	130%
Chromium	9654888		14	14	0.0%	< 2	82%	70%	130%	104%	80%	120%	106%	70%	130%
Cobalt	9654888		5.3	5.3	0.0%	< 0.5	99%	70%	130%	115%	80%	120%	104%	70%	130%
Copper	9654888		12	12	0.0%	< 1	95%	70%	130%	114%	80%	120%	98%	70%	130%
Lead	9654888		8	8	0.0%	< 1	103%	70%	130%	111%	80%	120%	97%	70%	130%
Molybdenum	9654888		<0.5	<0.5	NA	< 0.5	111%	70%	130%	120%	80%	120%	109%	70%	130%
Nickel	9654888		9	9	0.0%	< 1	93%	70%	130%	107%	80%	120%	94%	70%	130%
Selenium	9654888		1.8	1.0	NA	< 0.4	102%	70%	130%	110%	80%	120%	104%	70%	130%
Silver	9654888		<0.2	<0.2	NA	< 0.2	95%	70%	130%	97%	80%	120%	94%	70%	130%
Thallium	9654888		<0.4	<0.4	NA	< 0.4	90%	70%	130%	101%	80%	120%	96%	70%	130%
Uranium	9654888		0.5	0.5	NA	< 0.5	102%	70%	130%	106%	80%	120%	96%	70%	130%
Vanadium	9654888		20	20	0.0%	< 1	87%	70%	130%	100%	80%	120%	103%	70%	130%
Zinc	9654888		34	34	0.0%	< 5	100%	70%	130%	113%	80%	120%	104%	70%	130%
Chromium VI	9652660		<0.2	<0.2	NA	< 0.2	72%	70%	130%	98%	80%	120%	99%	70%	130%
Mercury	9654888		<0.10	<0.10	NA	< 0.10	100%	70%	130%	108%	80%	120%	104%	70%	130%

Comments: NA signifies Not Applicable.
Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL

Certified By:



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Quality Assurance

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

AGAT WORK ORDER: 18T401825

PROJECT: 18-175

ATTENTION TO: Ian Acheson

SAMPLING SITE:

SAMPLED BY:Ian Acheson

Trace Organics Analysis

RPT Date: Nov 05, 2018			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - VOCs (Soil)															
Dichlorodifluoromethane	9654607		< 0.05	< 0.05	NA	< 0.05	80%	50%	140%	113%	50%	140%	92%	50%	140%
Vinyl Chloride	9654607		< 0.02	< 0.02	NA	< 0.02	89%	50%	140%	118%	50%	140%	116%	50%	140%
Bromomethane	9654607		< 0.05	< 0.05	NA	< 0.05	93%	50%	140%	112%	50%	140%	114%	50%	140%
Trichlorofluoromethane	9654607		< 0.05	< 0.05	NA	< 0.05	110%	50%	140%	113%	50%	140%	120%	50%	140%
Acetone	9654607		< 0.50	< 0.50	NA	< 0.50	110%	50%	140%	110%	50%	140%	101%	50%	140%
1,1-Dichloroethylene	9654607		< 0.05	< 0.05	NA	< 0.05	83%	50%	140%	96%	60%	130%	103%	50%	140%
Methylene Chloride	9654607		< 0.05	< 0.05	NA	< 0.05	73%	50%	140%	106%	60%	130%	110%	50%	140%
Trans- 1,2-Dichloroethylene	9654607		< 0.05	< 0.05	NA	< 0.05	97%	50%	140%	94%	60%	130%	103%	50%	140%
Methyl tert-butyl Ether	9654607		< 0.05	< 0.05	NA	< 0.05	84%	50%	140%	72%	60%	130%	79%	50%	140%
1,1-Dichloroethane	9654607		< 0.02	< 0.02	NA	< 0.02	106%	50%	140%	92%	60%	130%	113%	50%	140%
Methyl Ethyl Ketone	9654607		< 0.50	< 0.50	NA	< 0.50	101%	50%	140%	101%	50%	140%	95%	50%	140%
Cis- 1,2-Dichloroethylene	9654607		< 0.02	< 0.02	NA	< 0.02	82%	50%	140%	115%	60%	130%	106%	50%	140%
Chloroform	9654607		< 0.04	< 0.04	NA	< 0.04	80%	50%	140%	111%	60%	130%	102%	50%	140%
1,2-Dichloroethane	9654607		< 0.03	< 0.03	NA	< 0.03	88%	50%	140%	90%	60%	130%	94%	50%	140%
1,1,1-Trichloroethane	9654607		< 0.05	< 0.05	NA	< 0.05	76%	50%	140%	83%	60%	130%	87%	50%	140%
Carbon Tetrachloride	9654607		< 0.05	< 0.05	NA	< 0.05	73%	50%	140%	105%	60%	130%	104%	50%	140%
Benzene	9654607		< 0.02	< 0.02	NA	< 0.02	77%	50%	140%	99%	60%	130%	106%	50%	140%
1,2-Dichloropropane	9654607		< 0.03	< 0.03	NA	< 0.03	93%	50%	140%	75%	60%	130%	81%	50%	140%
Trichloroethylene	9654607		< 0.03	< 0.03	NA	< 0.03	78%	50%	140%	90%	60%	130%	99%	50%	140%
Bromodichloromethane	9654607		< 0.05	< 0.05	NA	< 0.05	115%	50%	140%	74%	60%	130%	76%	50%	140%
Methyl Isobutyl Ketone	9654607		< 0.50	< 0.50	NA	< 0.50	112%	50%	140%	101%	50%	140%	83%	50%	140%
1,1,2-Trichloroethane	9654607		< 0.04	< 0.04	NA	< 0.04	105%	50%	140%	96%	60%	130%	115%	50%	140%
Toluene	9654607		< 0.05	< 0.05	NA	< 0.05	94%	50%	140%	97%	60%	130%	105%	50%	140%
Dibromochloromethane	9654607		< 0.05	< 0.05	NA	< 0.05	84%	50%	140%	71%	60%	130%	85%	50%	140%
Ethylene Dibromide	9654607		< 0.04	< 0.04	NA	< 0.04	105%	50%	140%	78%	60%	130%	96%	50%	140%
Tetrachloroethylene	9654607		< 0.05	< 0.05	NA	< 0.05	81%	50%	140%	103%	60%	130%	115%	50%	140%
1,1,1,2-Tetrachloroethane	9654607		< 0.04	< 0.04	NA	< 0.04	82%	50%	140%	72%	60%	130%	83%	50%	140%
Chlorobenzene	9654607		< 0.05	< 0.05	NA	< 0.05	85%	50%	140%	105%	60%	130%	100%	50%	140%
Ethylbenzene	9654607		< 0.05	< 0.05	NA	< 0.05	81%	50%	140%	108%	60%	130%	117%	50%	140%
m & p-Xylene	9654607		< 0.05	< 0.05	NA	< 0.05	83%	50%	140%	119%	60%	130%	112%	50%	140%
Bromoform	9654607		< 0.05	< 0.05	NA	< 0.05	86%	50%	140%	72%	60%	130%	82%	50%	140%
Styrene	9654607		< 0.05	< 0.05	NA	< 0.05	82%	50%	140%	77%	60%	130%	96%	50%	140%
1,1,2,2-Tetrachloroethane	9654607		< 0.05	< 0.05	NA	< 0.05	113%	50%	140%	88%	60%	130%	105%	50%	140%
o-Xylene	9654607		< 0.05	< 0.05	NA	< 0.05	88%	50%	140%	114%	60%	130%	109%	50%	140%
1,3-Dichlorobenzene	9654607		< 0.05	< 0.05	NA	< 0.05	84%	50%	140%	81%	60%	130%	100%	50%	140%
1,4-Dichlorobenzene	9654607		< 0.05	< 0.05	NA	< 0.05	96%	50%	140%	90%	60%	130%	109%	50%	140%
1,2-Dichlorobenzene	9654607		< 0.05	< 0.05	NA	< 0.05	95%	50%	140%	80%	60%	130%	102%	50%	140%
1,3-Dichloropropene	9654607		< 0.04	< 0.04	NA	< 0.04	82%	50%	140%	77%	60%	130%	79%	50%	140%
n-Hexane	9654607		< 0.05	< 0.05	NA	< 0.05	117%	50%	140%	89%	60%	130%	112%	50%	140%

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Quality Assurance

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

AGAT WORK ORDER: 18T401825

PROJECT: 18-175

ATTENTION TO: Ian Acheson

SAMPLING SITE:

SAMPLED BY:Ian Acheson

Trace Organics Analysis (Continued)

RPT Date: Nov 05, 2018			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Soil)															
F1 (C6 to C10)	9654589		< 5	< 5	NA	< 5	82%	60%	130%	89%	85%	115%	88%	70%	130%
F2 (C10 to C16)	9648232		< 10	< 10	NA	< 10	104%	60%	130%	94%	80%	120%	88%	70%	130%
F3 (C16 to C34)	9648232		< 50	< 50	NA	< 50	104%	60%	130%	94%	80%	120%	82%	70%	130%
F4 (C34 to C50)	9648232		< 50	< 50	NA	< 50	88%	60%	130%	99%	80%	120%	86%	70%	130%
O. Reg. 153(511) - PAHs (Soil)															
Naphthalene	9637794		< 0.05	< 0.05	NA	< 0.05	98%	50%	140%	93%	50%	140%	97%	50%	140%
Acenaphthylene	9637794		< 0.05	< 0.05	NA	< 0.05	100%	50%	140%	94%	50%	140%	94%	50%	140%
Acenaphthene	9637794		< 0.05	< 0.05	NA	< 0.05	99%	50%	140%	90%	50%	140%	91%	50%	140%
Fluorene	9637794		< 0.05	< 0.05	NA	< 0.05	99%	50%	140%	90%	50%	140%	94%	50%	140%
Phenanthrene	9637794		< 0.05	< 0.05	NA	< 0.05	100%	50%	140%	90%	50%	140%	86%	50%	140%
Anthracene	9637794		< 0.05	< 0.05	NA	< 0.05	99%	50%	140%	91%	50%	140%	89%	50%	140%
Fluoranthene	9637794		< 0.05	< 0.05	NA	< 0.05	107%	50%	140%	90%	50%	140%	95%	50%	140%
Pyrene	9637794		< 0.05	< 0.05	NA	< 0.05	106%	50%	140%	91%	50%	140%	95%	50%	140%
Benz(a)anthracene	9637794		< 0.05	< 0.05	NA	< 0.05	99%	50%	140%	95%	50%	140%	91%	50%	140%
Chrysene	9637794		< 0.05	< 0.05	NA	< 0.05	104%	50%	140%	90%	50%	140%	95%	50%	140%
Benzo(b)fluoranthene	9637794		< 0.05	< 0.05	NA	< 0.05	101%	50%	140%	97%	50%	140%	96%	50%	140%
Benzo(k)fluoranthene	9637794		< 0.05	< 0.05	NA	< 0.05	101%	50%	140%	91%	50%	140%	96%	50%	140%
Benzo(a)pyrene	9637794		< 0.05	< 0.05	NA	< 0.05	105%	50%	140%	94%	50%	140%	96%	50%	140%
Indeno(1,2,3-cd)pyrene	9637794		< 0.05	< 0.05	NA	< 0.05	101%	50%	140%	87%	50%	140%	95%	50%	140%
Dibenz(a,h)anthracene	9637794		< 0.05	< 0.05	NA	< 0.05	100%	50%	140%	96%	50%	140%	93%	50%	140%
Benzo(g,h,i)perylene	9637794		< 0.05	< 0.05	NA	< 0.05	104%	50%	140%	96%	50%	140%	99%	50%	140%
2-and 1-methyl Naphthalene	9637794		< 0.05	< 0.05	NA	< 0.05	99%	50%	140%	95%	50%	140%	98%	50%	140%
O. Reg. 153(511) - VOCs (Water)															
Dichlorodifluoromethane	9655961		< 0.20	< 0.20	NA	< 0.20	78%	50%	140%	81%	50%	140%	76%	50%	140%
Vinyl Chloride	9655961		< 0.17	< 0.17	NA	< 0.17	78%	50%	140%	98%	50%	140%	79%	50%	140%
Bromomethane	9655961		< 0.20	< 0.20	NA	< 0.20	71%	50%	140%	102%	50%	140%	74%	50%	140%
Trichlorofluoromethane	9655961		< 0.40	< 0.40	NA	< 0.40	79%	50%	140%	117%	50%	140%	94%	50%	140%
Acetone	9655961		< 1.0	< 1.0	NA	< 1.0	89%	50%	140%	117%	50%	140%	114%	50%	140%
1,1-Dichloroethylene	9655961		< 0.30	< 0.30	NA	< 0.30	107%	50%	140%	111%	60%	130%	117%	50%	140%
Methylene Chloride	9655961		< 0.30	< 0.30	NA	< 0.30	107%	50%	140%	105%	60%	130%	113%	50%	140%
trans- 1,2-Dichloroethylene	9655961		< 0.20	< 0.20	NA	< 0.20	90%	50%	140%	107%	60%	130%	104%	50%	140%
Methyl tert-butyl ether	9655961		< 0.20	< 0.20	NA	< 0.20	109%	50%	140%	87%	60%	130%	81%	50%	140%
1,1-Dichloroethane	9655961		< 0.30	< 0.30	NA	< 0.30	78%	50%	140%	117%	60%	130%	112%	50%	140%
Methyl Ethyl Ketone	9655961		< 1.0	< 1.0	NA	< 1.0	108%	50%	140%	110%	50%	140%	99%	50%	140%
cis- 1,2-Dichloroethylene	9655961		< 0.20	< 0.20	NA	< 0.20	71%	50%	140%	98%	60%	130%	100%	50%	140%
Chloroform	9655961		< 0.20	< 0.20	NA	< 0.20	104%	50%	140%	115%	60%	130%	107%	50%	140%
1,2-Dichloroethane	9655961		< 0.20	< 0.20	NA	< 0.20	85%	50%	140%	93%	60%	130%	101%	50%	140%

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Quality Assurance

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

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PROJECT: 18-175

ATTENTION TO: Ian Acheson

SAMPLING SITE:

SAMPLED BY:Ian Acheson

Trace Organics Analysis (Continued)

RPT Date: Nov 05, 2018			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
1,1,1-Trichloroethane	9655961		< 0.30	< 0.30	NA	< 0.30	77%	50%	140%	103%	60%	130%	94%	50%	140%
Carbon Tetrachloride	9655961		< 0.20	< 0.20	NA	< 0.20	74%	50%	140%	93%	60%	130%	86%	50%	140%
Benzene	9655961		< 0.20	< 0.20	NA	< 0.20	79%	50%	140%	98%	60%	130%	94%	50%	140%
1,2-Dichloropropane	9655961		< 0.20	< 0.20	NA	< 0.20	81%	50%	140%	86%	60%	130%	84%	50%	140%
Trichloroethylene	9655961		< 0.20	< 0.20	NA	< 0.20	77%	50%	140%	87%	60%	130%	87%	50%	140%
Bromodichloromethane	9655961		< 0.20	< 0.20	NA	< 0.20	73%	50%	140%	88%	60%	130%	71%	50%	140%
Methyl Isobutyl Ketone	9655961		< 1.0	< 1.0	NA	< 1.0	117%	50%	140%	117%	50%	140%	117%	50%	140%
1,1,2-Trichloroethane	9655961		< 0.20	< 0.20	NA	< 0.20	117%	50%	140%	115%	60%	130%	83%	50%	140%
Toluene	9655961		< 0.20	< 0.20	NA	< 0.20	105%	50%	140%	117%	60%	130%	114%	50%	140%
Dibromochloromethane	9655961		< 0.10	< 0.10	NA	< 0.10	76%	50%	140%	75%	60%	130%	81%	50%	140%
Ethylene Dibromide	9655961		< 0.10	< 0.10	NA	< 0.10	92%	50%	140%	90%	60%	130%	96%	50%	140%
Tetrachloroethylene	9655961		< 0.20	< 0.20	NA	< 0.20	89%	50%	140%	117%	60%	130%	95%	50%	140%
1,1,1,2-Tetrachloroethane	9655961		< 0.10	< 0.10	NA	< 0.10	104%	50%	140%	87%	60%	130%	86%	50%	140%
Chlorobenzene	9655961		< 0.10	< 0.10	NA	< 0.10	106%	50%	140%	110%	60%	130%	102%	50%	140%
Ethylbenzene	9655961		< 0.10	< 0.10	NA	< 0.10	105%	50%	140%	117%	60%	130%	109%	50%	140%
m & p-Xylene	9655961		< 0.20	< 0.20	NA	< 0.20	80%	50%	140%	109%	60%	130%	119%	50%	140%
Bromoform	9655961		< 0.10	< 0.10	NA	< 0.10	74%	50%	140%	75%	60%	130%	88%	50%	140%
Styrene	9655961		< 0.10	< 0.10	NA	< 0.10	93%	50%	140%	95%	60%	130%	93%	50%	140%
1,1,2,2-Tetrachloroethane	9655961		< 0.10	< 0.10	NA	< 0.10	103%	50%	140%	94%	60%	130%	109%	50%	140%
o-Xylene	9655961		< 0.10	< 0.10	NA	< 0.10	119%	50%	140%	115%	60%	130%	112%	50%	140%
1,3-Dichlorobenzene	9655961		< 0.10	< 0.10	NA	< 0.10	104%	50%	140%	91%	60%	130%	83%	50%	140%
1,4-Dichlorobenzene	9655961		< 0.10	< 0.10	NA	< 0.10	111%	50%	140%	93%	60%	130%	90%	50%	140%
1,2-Dichlorobenzene	9655961		< 0.10	< 0.10	NA	< 0.10	111%	50%	140%	85%	60%	130%	85%	50%	140%
1,3-Dichloropropene	9655961		< 0.30	< 0.30	NA	< 0.30	79%	50%	140%	89%	60%	130%	83%	50%	140%
n-Hexane	9655961		< 0.20	< 0.20	NA	< 0.20	93%	50%	140%	104%	60%	130%	107%	50%	140%
O. Reg. 153(511) - PHCs F1 - F4 (with PAHs) (Water)															
F1 (C6-C10)	9654576		< 25	< 25	NA	< 25	93%	60%	140%	92%	60%	140%	86%	60%	140%
F2 (C10 to C16)		TW	< 100	< 100	NA	< 100	92%	60%	140%	78%	60%	140%	77%	60%	140%
F3 (C16 to C34)		TW	< 100	< 100	NA	< 100	94%	60%	140%	105%	60%	140%	95%	60%	140%
F4 (C34 to C50)		TW	< 100	< 100	NA	< 100	86%	60%	140%	101%	60%	140%	90%	60%	140%
O. Reg. 153(511) - BNA (full) + PAHs (Water)															
Naphthalene		TW	< 0.20	< 0.20	NA	< 0.20	102%	50%	140%	102%	50%	140%	94%	50%	140%
Acenaphthylene		TW	< 0.20	< 0.20	NA	< 0.20	89%	50%	140%	88%	50%	140%	99%	50%	140%
Acenaphthene		TW	< 0.20	< 0.20	NA	< 0.20	102%	50%	140%	99%	50%	140%	93%	50%	140%
Fluorene		TW	< 0.20	< 0.20	NA	< 0.20	97%	50%	140%	87%	50%	140%	101%	50%	140%
Phenanthrene		TW	< 0.10	< 0.10	NA	< 0.10	101%	50%	140%	94%	50%	140%	82%	50%	140%
Anthracene		TW	< 0.10	< 0.10	NA	< 0.10	94%	50%	140%	92%	50%	140%	84%	50%	140%
Fluoranthene		TW	< 0.20	< 0.20	NA	< 0.20	81%	50%	140%	79%	50%	140%	75%	50%	140%
Pyrene		TW	< 0.20	< 0.20	NA	< 0.20	79%	50%	140%	77%	50%	140%	77%	50%	140%

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Quality Assurance

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

AGAT WORK ORDER: 18T401825

PROJECT: 18-175

ATTENTION TO: Ian Acheson

SAMPLING SITE:

SAMPLED BY:Ian Acheson

Trace Organics Analysis (Continued)

RPT Date: Nov 05, 2018			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Benz(a)anthracene		TW	< 0.20	< 0.20	NA	< 0.20	75%	50%	140%	70%	50%	140%	70%	50%	140%
Chrysene		TW	< 0.10	< 0.10	NA	< 0.10	72%	50%	140%	69%	50%	140%	74%	50%	140%
Benzo(b)fluoranthene		TW	< 0.10	< 0.10	NA	< 0.10	83%	50%	140%	88%	50%	140%	100%	50%	140%
Benzo(k)fluoranthene		TW	< 0.10	< 0.10	NA	< 0.10	101%	50%	140%	102%	50%	140%	93%	50%	140%
Benzo(a)pyrene		TW	< 0.01	< 0.01	NA	< 0.01	110%	50%	140%	106%	50%	140%	99%	50%	140%
Indeno(1,2,3-cd)pyrene		TW	< 0.20	< 0.20	NA	< 0.20	100%	50%	140%	95%	50%	140%	98%	50%	140%
Dibenz(a,h)anthracene		TW	< 0.20	< 0.20	NA	< 0.20	92%	50%	140%	97%	50%	140%	103%	50%	140%
Benzo(g,h,i)perylene		TW	< 0.20	< 0.20	NA	< 0.20	93%	50%	140%	89%	50%	140%	81%	50%	140%
Phenol		TW	< 1.0	< 1.0	NA	< 1.0	81%	30%	130%	99%	30%	130%	98%	30%	130%
Bis(2-chloroethyl)ether		TW	< 0.5	< 0.5	NA	< 0.5	91%	50%	140%	87%	50%	140%	81%	50%	140%
2-Chlorophenol		TW	< 0.5	< 0.5	NA	< 0.5	94%	50%	140%	93%	50%	140%	84%	50%	140%
o-Cresol		TW	< 0.5	< 0.5	NA	< 0.5	92%	50%	140%	74%	50%	140%	87%	50%	140%
Bis(2-chloroisopropyl)ether		TW	< 0.5	< 0.5	NA	< 0.5	104%	50%	140%	87%	50%	140%	81%	50%	140%
m&p-Cresol		TW	< 0.6	< 0.6	NA	< 0.6	102%	50%	140%	97%	50%	140%	97%	50%	140%
2,4-Dimethylphenol		TW	< 0.5	< 0.5	NA	< 0.5	105%	30%	130%	98%	30%	130%	102%	30%	130%
2,4-Dichlorophenol		TW	< 0.3	< 0.3	NA	< 0.3	106%	50%	140%	101%	50%	140%	94%	50%	140%
1,2,4-Trichlorobenzene		TW	< 0.5	< 0.5	NA	< 0.5	97%	50%	140%	97%	50%	140%	90%	50%	140%
p-Chloroaniline		TW	< 1.0	< 1.0	NA	< 1.0	83%	30%	130%	88%	30%	130%	75%	30%	130%
2-and 1-methyl Naphthalene		TW	< 0.5	< 0.5	NA	< 0.5	99%	50%	140%	116%	50%	140%	89%	50%	140%
2,4,6-Trichlorophenol		TW	< 0.2	< 0.2	NA	< 0.2	101%	50%	140%	92%	50%	140%	95%	50%	140%
2,4,5-Trichlorophenol		TW	< 0.2	< 0.2	NA	< 0.2	92%	50%	140%	100%	50%	140%	91%	50%	140%
1,1'-Biphenyl		TW	< 0.5	< 0.5	NA	< 0.5	91%	50%	140%	94%	50%	140%	97%	50%	140%
Dimethyl phthalate		TW	< 0.5	< 0.5	NA	< 0.5	94%	50%	140%	102%	50%	140%	96%	50%	140%
Diethyl phthalate		TW	< 0.5	< 0.5	NA	< 0.5	105%	50%	140%	98%	50%	140%	95%	50%	140%
Pentachlorophenol		TW	< 0.5	< 0.5	NA	< 0.5	71%	50%	140%	89%	50%	140%	99%	50%	140%
3,3'-dichlorobenzidine		TW	< 0.5	< 0.5	NA	< 0.5	64%	30%	130%	94%	30%	130%	68%	30%	130%
Bis(2-Ethylhexyl)phthalate		TW	< 0.5	< 0.5	NA	< 0.5	94%	50%	140%	102%	50%	140%	97%	50%	140%
2,4-Dinitrophenol		TW	< 10	< 10	NA	< 10	65%	30%	130%	77%	30%	130%	74%	30%	130%

Comments: Tap water analysis has been performed as QC sample testing for duplicate and matrix spike due to insufficient sample volume.
When the average of the sample and duplicate results is less than 5x the RDL, the Relative Percent Difference (RPD) will be indicated as Not Applicable (NA).

Certified By:



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Quality Assurance

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

AGAT WORK ORDER: 18T401825

PROJECT: 18-175

ATTENTION TO: Ian Acheson

SAMPLING SITE:

SAMPLED BY:Ian Acheson

Water Analysis

RPT Date: Nov 05, 2018			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals (Including Hydrides) (Water)															
Antimony	9654981	9654981	<1.0	<1.0	NA	< 1.0	102%	70%	130%	98%	80%	120%	95%	70%	130%
Arsenic	9654981	9654981	1.6	1.6	NA	< 1.0	109%	70%	130%	96%	80%	120%	93%	70%	130%
Barium	9654981	9654981	305	323	5.7%	< 2.0	100%	70%	130%	102%	80%	120%	100%	70%	130%
Beryllium	9654981	9654981	<0.5	<0.5	NA	< 0.5	97%	70%	130%	97%	80%	120%	96%	70%	130%
Boron	9654981	9654981	100	87.0	13.9%	< 10.0	106%	70%	130%	107%	80%	120%	105%	70%	130%
Cadmium	9654981	9654981	<0.2	<0.2	NA	< 0.2	102%	70%	130%	102%	80%	120%	100%	70%	130%
Chromium	9654981	9654981	4.3	4.2	NA	< 2.0	99%	70%	130%	99%	80%	120%	93%	70%	130%
Cobalt	9654981	9654981	<0.5	<0.5	NA	< 0.5	106%	70%	130%	98%	80%	120%	94%	70%	130%
Copper	9654981	9654981	4.1	4.2	NA	< 1.0	105%	70%	130%	97%	80%	120%	93%	70%	130%
Lead	9654981	9654981	0.6	0.6	NA	< 0.5	104%	70%	130%	104%	80%	120%	103%	70%	130%
Molybdenum	9654981	9654981	2.1	2.1	NA	< 0.5	101%	70%	130%	97%	80%	120%	95%	70%	130%
Nickel	9654981	9654981	23.7	20.4	15.0%	< 1.0	105%	70%	130%	95%	80%	120%	93%	70%	130%
Selenium	9654981	9654981	7.0	7.9	12.1%	< 1.0	108%	70%	130%	102%	80%	120%	92%	70%	130%
Silver	9654981	9654981	<0.2	<0.2	NA	< 0.2	105%	70%	130%	108%	80%	120%	107%	70%	130%
Thallium	9654981	9654981	<0.3	<0.3	NA	< 0.3	103%	70%	130%	102%	80%	120%	102%	70%	130%
Uranium	9654981	9654981	2.5	2.5	0.0%	< 0.5	99%	70%	130%	97%	80%	120%	95%	70%	130%
Vanadium	9654981	9654981	3.6	4.0	10.5%	< 0.4	101%	70%	130%	96%	80%	120%	95%	70%	130%
Zinc	9654981	9654981	<5.0	<5.0	NA	< 5.0	102%	70%	130%	96%	80%	120%	92%	70%	130%

Comments: NA signifies Not Applicable.
Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By: Iris Verástegui

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Method Summary

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

AGAT WORK ORDER: 18T401825

PROJECT: 18-175

ATTENTION TO: Ian Acheson

SAMPLING SITE:

SAMPLED BY:Ian Acheson

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Arsenic	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Barium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Beryllium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron (Hot Water Soluble)	MET-93-6104	EPA SW 846 6010C; MSA, Part 3, Ch.21	ICP/OES
Cadmium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Cobalt	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Copper	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Lead	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Molybdenum	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Nickel	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Selenium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Silver	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Thallium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Uranium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Vanadium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Zinc	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium VI	INOR-93-6029	SM 3500 B; MSA Part 3, Ch. 25	SPECTROPHOTOMETER
Mercury	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
pH, 2:1 CaCl2 Extraction	INOR-93-6031	MSA part 3 & SM 4500-H+ B	pH METER
Fraction Organic Carbon-1	INOR-93-6062	Skjemstad & Baldock, 2008 & Walkley & Black 1934	SPECTROPHOTOMETER
Fraction Organic Carbon-2	INOR-93-6062	Skjemstad & Baldock, 2008 & Walkley & Black 1934	SPECTROPHOTOMETER
Fraction Organic Carbon-3	INOR-93-6062	Skjemstad & Baldock, 2008 & Walkley & Black 1934	SPECTROPHOTOMETER
Fraction Organic Carbon-Avg	INOR-93-6062	Skjemstad & Baldock, 2008 & Walkley & Black 1934	SPECTROPHOTOMETER

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SAMPLING SITE:

SAMPLED BY:Ian Acheson

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Naphthalene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Acenaphthylene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Acenaphthene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Fluorene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Phenanthrene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Anthracene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Fluoranthene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Pyrene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Benz(a)anthracene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Chrysene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Benzo(b)fluoranthene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Benzo(k)fluoranthene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Benzo(a)pyrene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Dibenz(a,h)anthracene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Benzo(g,h,i)perylene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Phenol	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Bis(2-chloroethyl)ether	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
2-Chlorophenol	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
o-Cresol	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Bis(2-chloroisopropyl)ether	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
m&p-Cresol	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
2,4-Dimethylphenol	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
2,4-Dichlorophenol	ORG-91-5114	EPA SW-846 3510C & 8270D	GC/MS
1,2,4-Trichlorobenzene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
p-Chloroaniline	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
2-and 1-methyl Naphthalene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
2,4,6-Trichlorophenol	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
2,4,5-Trichlorophenol	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
1,1'-Biphenyl	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Dimethyl phthalate	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
2,4 and 2,6-Dinitrotoluene	ORG-91-5114	EPA SW-846 3510 & 8270	GC/MS
Diethyl phthalate	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Pentachlorophenol	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
3,3'-dichlorobenzidine	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Bis(2-Ethylhexyl)phthalate	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
2,4-Dinitrophenol	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
2,4,6-Tribromophenol	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Chrysene-d12	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Naphthalene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Acenaphthylene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Acenaphthene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Fluorene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Phenanthrene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Anthracene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Fluoranthene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Pyrene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Benz(a)anthracene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Chrysene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Benzo(b)fluoranthene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Benzo(k)fluoranthene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Benzo(a)pyrene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Dibenz(a,h)anthracene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Benzo(g,h,i)perylene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
2-and 1-methyl Naphthalene	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
Moisture Content	ORG-91-5106	EPA SW-846 3541 & 8270	BALANCE
Chrysene-d12	ORG-91-5106	EPA SW846 3541 & 8270	GC/MS
F1 (C6 to C10)	VOL-91-5009	CCME Tier 1 Method, SW846 5035	P &T GC / FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	CCME Tier 1 Method, SW846 5035	P & T GC / FID
F2 (C10 to C16)	VOL-91-5009	CCME Tier 1 Method	GC / FID
F3 (C16 to C34)	VOL-91-5009	CCME Tier 1 Method	GC / FID
F4 (C34 to C50)	VOL-91-5009	CCME Tier 1 Method	GC / FID
Gravimetric Heavy Hydrocarbons	VOL-91-5009	CCME Tier 1 Method	Balance
Moisture Content	VOL-91-5009	CCME Tier 1 Method, SW846 5035,8015	BALANCE
Terphenyl	VOL-91-5009	CCME Tier 1 Method	GC/FID
F1 (C6 to C10)	VOL-91-5009	CCME Tier 1 Method	GC / FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	CCME Tier 1 Method	GC / FID
F2 (C10 to C16) minus Naphthalene	VOL-91-5009	CCME Tier 1 Method	GC / FID
F3 (C16 to C34)	VOL-91-5009	CCME Tier 1 Method	GC / FID
F3 (C16 to C34) minus PAHs	VOL-91-5009	CCME Tier 1 Method	GC / FID
Gravimetric Heavy Hydrocarbons	VOL-91-5009	CCME Tier 1 Method	BALANCE
Moisture Content	VOL-91-5009	CCME Tier 1 Method	BALANCE
Terphenyl	VOL-91-5009		GC/FID
F1 (C6-C10)	VOL-91- 5010	MOE PHC-E3421	(P&T)GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5010	MOE PHC E3421	(P&T)GC/FID
F2 (C10 to C16)	VOL-91-5010	MOE PHC E3421	GC/FID
F2 (C10 to C16) minus Naphthalene	VOL-91-5010	MOE PHC E3421	GC/FID
F3 (C16 to C34)	VOL-91-5010	MOE PHC E3421	GC/FID
F3 (C16 to C34) minus PAHs	VOL-91-5010	MOE PHC E3421	GC/FID
F4 (C34 to C50)	VOL -91- 5010	MOE PHC- E3421	GC/FID
Gravimetric Heavy Hydrocarbons	VOL-91-5010	MOE PHC E3421	BALANCE
Terphenyl	VOL-91-5010		GC/FID
Dichlorodifluoromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Vinyl Chloride	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Bromomethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Acetone	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methylene Chloride	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Trans- 1,2-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methyl tert-butyl Ether	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Cis- 1,2-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Chloroform	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS

Results relate only to the items tested and to all the items tested

AGAT Laboratories

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MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
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FAX (905)712-5122
http://www.agatlabs.com

Method Summary

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

AGAT WORK ORDER: 18T401825

PROJECT: 18-175

ATTENTION TO: Ian Acheson

SAMPLING SITE:

SAMPLED BY:Ian Acheson

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Carbon Tetrachloride	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Benzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Trichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Bromodichloromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Toluene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Dibromochloromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Chlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Ethylbenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
m & p-Xylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Bromoform	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Styrene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
o-Xylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Xylene Mixture	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,3-Dichloropropene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
n-Hexane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Toluene-d8	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Dichlorodifluoromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Vinyl Chloride	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Bromomethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Acetone	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methylene Chloride	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
trans- 1,2-Dichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methyl tert-butyl ether	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
cis- 1,2-Dichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Chloroform	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Benzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Trichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Bromodichloromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Toluene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS

Results relate only to the items tested and to all the items tested

AGAT Laboratories

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TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Method Summary

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

AGAT WORK ORDER: 18T401825

PROJECT: 18-175

ATTENTION TO: Ian Acheson

SAMPLING SITE:

SAMPLED BY:Ian Acheson

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Dibromochloromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Chlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Ethylbenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
m & p-Xylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Bromoform	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Styrene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
o-Xylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,3-Dichloropropene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Xylene Mixture	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
n-Hexane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Toluene-d8	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Water Analysis			
Antimony	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Arsenic	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Barium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Beryllium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Boron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Cadmium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Chromium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Cobalt	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Copper	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Lead	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Molybdenum	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Nickel	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Selenium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Silver	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Thallium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Uranium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Vanadium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Zinc	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

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AGAT Laboratories

5835 Coopers Avenue
Mississauga, Ontario L4Z 1Y2
Ph: 905.712.5100 Fax: 905.712.5122
webearth.agatlabs.com

Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans)

Report Information:

Company: Azimuth Environmental Consulting
Contact: Ian Atkeson
Address: 642 Welham Rd
Barrie ON
Phone: (705) 721-8451 Fax: (705) 721-8926
Reports to be sent to:
1. Email: iatkeson@azimuthenvironmental.com
2. Email: david@azimuthenvironmental.com

Project Information:

Project: 18-175
Site Location: 41 & 43 Essa Rd, Barrie, ON
Sampled By: I. Atkeson
AGAT Quote #: PO:
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

Bill To Same: Yes ☒ No ☐
Company:
Contact:
Address:
Email:

Regulatory Requirements:

☐ No Regulatory Requirement
(Please check all applicable boxes)

☒ Regulation 153/04
Table 2 (Indicate One)
☐ Ind/Com
☒ Res/Park
☐ Agriculture
Soil Texture (Check One)
☒ Coarse
☐ Fine

☐ Sewer Use
☐ Sanitary
☐ Storm
Region (Indicate One)
☐ MISA

☐ Regulation 558
☐ CCME
☐ Prov. Water Quality Objectives (PWQO)
☐ Other
(Indicate One)

Is this submission for a **Record of Site Condition?** ☒ Yes ☐ No

Report Guideline on *Certificate of Analysis* ☒ Yes ☐ No

Laboratory Use Only

Work Order #: 18T401825
Cooler Quantity: four
Arrival Temperatures: 5.7 | 4.8 | 5.1 | 3.5 | 3.2 | 3
Custody Seal Intact: ☐ Yes ☐ No ☐ N/A
Notes:

Turnaround Time (TAT) Required:

Regular TAT ☒ 5 to 7 Business Days
Rush TAT (Rush Surcharges Apply)
☐ 3 Business Days ☐ 2 Business Days ☐ Next Business Day
OR Date Required (Rush Surcharges May Apply):
Please provide prior notification for rush TAT
**TAT is exclusive of weekends and statutory holidays*
For 'Same Day' analysis, please contact your AGAT CPM

Sample Matrix Legend

B	Biota
GW	Ground Water
O	Oil
P	Paint
S	Soil
SD	Sediment
SW	Surface Water

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI (Y/N)	O. Reg 153: Metals and Inorganics (☒ All Metals ☐ 153 Metals (excl. Hydrides) ☐ Hydride Metals ☐ 153 Metals (Incl. Hydrides))	O. Reg 153: ORPs (☐ B-HWS ☐ Cl ☐ CN ☐ Cr6+ ☐ EC ☒ FOC ☐ Hg ☐ pH ☐ SAR)	O. Reg 153: Full Metals Scan	O. Reg 153: Regulation/Custom Metals	O. Reg 153: Nutrients (☐ TP ☐ NH_3 ☐ TKN ☐ NO_3 ☐ NO_2 ☐ NO_3+NO_2)	O. Reg 153: Volatiles (☒ VOC ☐ BTEX ☐ THM)	O. Reg 153: PHCs F1 - F4	O. Reg 153: ABNs	O. Reg 153: PAHs	O. Reg 153: PCBs (☐ Total ☐ Aroclors)	O. Reg 153: Organochlorine Pesticides	O. Reg 153: TCLP (☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs)	O. Reg 153: Sewer Use
BH309-3	23Oct18	10:00	2	S				X										
BH309-10	23Oct18	11:30	2	S				X										
BH309-27	23Oct18	16:00	5	S			X					X	X				X	
BH309-6	23Oct18	10:50	6	S			X					X	X	X			X	
BH309-6-1	23Oct18	10:50	1	S										X				
MW205	24Oct18	10:20	8	GW		Y	X					X	X	X	X		X	
BH305-8	24Oct18	11:50	6	S			X					X	X	X				
BH308-4	24Oct18	16:00	6	S			X					X	X					
BH308-4-1	24Oct18	16:00	1	S			X					NV						
BH305-5	24Oct18	10:00	4	S								X	X					
BH305-5-1	24Oct18	10:00	4	S								X	X					

Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time
Ian Atkeson	24Oct18	17:00		2018/10/25	10:15
	2018/10/25	21:58			

Page 1 of 1
No: T 080027

Document ID: DIV 78-1511.015

Pink Copy - Client | Yellow Copy - AGAT | White Copy- AGAT

V 6.6 2018

AGAT Laboratories

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http://www.agatlabs.com

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,
642 WELHAM ROAD
BARRIE, ON L4N9A1
(705) 721-8451

ATTENTION TO: Ian Acheson

PROJECT: 18.175

AGAT WORK ORDER: 18T402897

SOIL ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

TRACE ORGANICS REVIEWED BY: Pinkal Patel, Report Reviewer

WATER ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

DATE REPORTED: Nov 07, 2018

PAGES (INCLUDING COVER): 28

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

Member of: Association of Professional Engineers and Geoscientists of Alberta (APEGA)
Western Enviro-Agricultural Laboratory Association (WEALA)
Environmental Services Association of Alberta (ESAA)

AGAT Laboratories is accredited to ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA) and/or Standards Council of Canada (SCC) for specific tests listed on the scope of accreditation. AGAT Laboratories (Mississauga) is also accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) for specific drinking water tests. Accreditations are location and parameter specific. A complete listing of parameters for each location is available from www.cala.ca and/or www.scc.ca. The tests in this report may not necessarily be included in the scope of accreditation.

Results relate only to the items tested and to all the items tested
All reportable information as specified by ISO 17025:2005 is available from AGAT Laboratories upon request

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 18T402897

PROJECT: 18.175

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

ATTENTION TO: Ian Acheson

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - Metals (Including Hydrides) (Soil)

DATE RECEIVED: 2018-10-29

DATE REPORTED: 2018-11-07

		SAMPLE DESCRIPTION:		BH304-4
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2018-10-26
Parameter	Unit	G / S	RDL	9660600
Antimony	µg/g	7.5	0.8	<0.8
Arsenic	µg/g	18	1	<1
Barium	µg/g	390	2	14
Beryllium	µg/g	4	0.5	<0.5
Boron	µg/g	120	5	<5
Cadmium	µg/g	1.2	0.5	<0.5
Chromium	µg/g	160	2	4
Cobalt	µg/g	22	0.5	1.6
Copper	µg/g	140	1	3
Lead	µg/g	120	1	1
Molybdenum	µg/g	6.9	0.5	<0.5
Nickel	µg/g	100	1	2
Selenium	µg/g	2.4	0.4	<0.4
Silver	µg/g	20	0.2	<0.2
Thallium	µg/g	1	0.4	<0.4
Uranium	µg/g	23	0.5	<0.5
Vanadium	µg/g	86	1	10
Zinc	µg/g	340	5	7

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: Divine Basily

Results relate only to the items tested and to all the items tested

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 18T402897

PROJECT: 18.175

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

ATTENTION TO: Ian Acheson

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - BNA (full) + PAHs (Soil)

DATE RECEIVED: 2018-10-29

DATE REPORTED: 2018-11-07

		SAMPLE DESCRIPTION:		BH304-4
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2018-10-26
Parameter	Unit	G / S	RDL	9660600
Naphthalene	µg/g	0.6	0.05	<0.05
Acenaphthylene	µg/g	0.15	0.05	<0.05
Acenaphthene	µg/g	7.9	0.05	<0.05
Fluorene	µg/g	62	0.05	<0.05
Phenanthrene	µg/g	6.2	0.05	<0.05
Anthracene	µg/g	0.67	0.05	<0.05
Fluoranthene	µg/g	0.69	0.05	<0.05
Pyrene	µg/g	78	0.05	<0.05
Benz(a)anthracene	µg/g	0.5	0.05	<0.05
Chrysene	µg/g	7	0.05	<0.05
Benzo(b)fluoranthene	µg/g	0.78	0.05	<0.05
Benzo(k)fluoranthene	µg/g	0.78	0.05	<0.05
Benzo(a)pyrene	µg/g	0.3	0.05	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.38	0.05	<0.05
Dibenz(a,h)anthracene	µg/g	0.1	0.05	<0.05
Benzo(g,h,i)perylene	µg/g	6.6	0.05	<0.05
Phenol	µg/g	9.4	0.5	<0.5
Bis(2-chloroethyl)ether	µg/g	0.5	0.1	<0.1
2-Chlorophenol	µg/g	1.6	0.1	<0.1
o-Cresol	µg/g		0.1	<0.1
Bis(2-chloroisopropyl)ether	µg/g	0.67	0.1	<0.1
m & p - Cresol	µg/g		0.1	<0.1
2,4-Dimethylphenol	µg/g	38	0.2	<0.2
2,4-Dichlorophenol	µg/g	0.19	0.1	<0.1
1,2,4-Trichlorobenzene	µg/g	0.36	0.05	<0.05
p-Chloroaniline	µg/g	0.5	0.5	<0.5
2-and 1-methyl Naphthalene	µg/g	0.99	0.05	<0.05
2,4,6-Trichlorophenol	µg/g	2.1	0.1	<0.1
2,4,5-Trichlorophenol	µg/g	4.4	0.1	<0.1
1,1-Biphenyl	µg/g	0.31	0.05	<0.05

Certified By: Pinkal Patel

Results relate only to the items tested and to all the items tested

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 18T402897

PROJECT: 18.175

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

ATTENTION TO: Ian Acheson

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - BNA (full) + PAHs (Soil)

DATE RECEIVED: 2018-10-29 **DATE REPORTED: 2018-11-07**

		SAMPLE DESCRIPTION:		BH304-4
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2018-10-26
Parameter	**Unit**	**G / S**	**RDL**	**9660600**
Dimethyl Phthalate	µg/g	0.5	0.1	<0.1
2,4 and 2,6-Dinitrotoluene	µg/g	0.5	0.5	<0.5
Diethyl Phthalate	µg/g	0.5	0.1	<0.1
Pentachlorophenol	µg/g	0.1	0.1	<0.1
3,3'-Dichlorobenzidine	µg/g	1	0.5	<0.5
Bis(2-Ethylhexyl)phthalate	µg/g	5	0.2	<0.2
2,4-Dinitrophenol	µg/g	2	2.0	<2.0
Moisture Content	%		0.1	17.9
Surrogate	**Unit**	**Acceptable Limits**		
2,4,6-Tribromophenol	%	50-140		94
Chrysene-d12	%	50-140		68

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

9660600 Results are based on the dry weight of the soil.
Note: The result for Benzo(b)Fluoranthene is the total of the Benzo(b)&(j)Fluoranthene isomers because the isomers co-elute on the GC column.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



Results relate only to the items tested and to all the items tested

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Certificate of Analysis

AGAT WORK ORDER: 18T402897

PROJECT: 18.175

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

SAMPLING SITE:

ATTENTION TO: Ian Acheson

SAMPLED BY:

O. Reg. 153(511) - BNA (full) + PAHs (Water)

DATE RECEIVED: 2018-10-29

DATE REPORTED: 2018-11-07

		SAMPLE DESCRIPTION:		MW304	MW304-1
		SAMPLE TYPE:		Water	Water
		DATE SAMPLED:		2018-10-26	2018-10-26
Parameter	Unit	G / S	RDL	9660602	9660638
Naphthalene	µg/L	11	0.20	<0.20	<0.20
Acenaphthylene	µg/L	1	0.20	<0.20	<0.20
Acenaphthene	µg/L	4.1	0.20	<0.20	<0.20
Fluorene	µg/L	120	0.20	<0.20	<0.20
Phenanthrene	µg/L	1	0.10	<0.10	<0.10
Anthracene	µg/L	2.4	0.10	<0.10	<0.10
Fluoranthene	µg/L	0.41	0.20	<0.20	<0.20
Pyrene	µg/L	4.1	0.20	<0.20	<0.20
Benz(a)anthracene	µg/L	1	0.20	<0.20	<0.20
Chrysene	µg/L	0.1	0.10	<0.10	<0.10
Benzo(b)fluoranthene	µg/L	0.1	0.10	<0.10	<0.10
Benzo(k)fluoranthene	µg/L	0.1	0.10	<0.10	<0.10
Benzo(a)pyrene	µg/L	0.01	0.01	<0.01	<0.01
Indeno(1,2,3-cd)pyrene	µg/L	0.2	0.20	<0.20	<0.20
Dibenz(a,h)anthracene	µg/L	0.2	0.20	<0.20	<0.20
Benzo(g,h,i)perylene	µg/L	0.2	0.20	<0.20	<0.20
Phenol	µg/L	890	1.0	<1.0	<1.0
Bis(2-chloroethyl)ether	µg/L	5	0.5	<0.5	<0.5
2-Chlorophenol	µg/L	8.9	0.5	<0.5	<0.5
o-Cresol	µg/L		0.5	<0.5	<0.5
Bis(2-chloroisopropyl)ether	µg/L	120	0.5	<0.5	<0.5
m&p-Cresol	µg/L		0.6	<0.6	<0.6
2,4-Dimethylphenol	µg/L	59	0.5	<0.5	<0.5
2,4-Dichlorophenol	µg/L	20	0.3	<0.3	<0.3
1,2,4-Trichlorobenzene	ug/L	70	0.5	<0.5	<0.5
p-Chloroaniline	µg/L		1.0	<1.0	<1.0
2-and 1-methyl Naphthalene	µg/L	3.2	0.5	<0.5	<0.5
2,4,6-Trichlorophenol	µg/L	2	0.2	<0.2	<0.2
2,4,5-Trichlorophenol	µg/L	8.9	0.2	<0.2	<0.2
1,1'-Biphenyl	µg/L	0.5	0.5	<0.5	<0.5

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AGAT WORK ORDER: 18T402897

PROJECT: 18.175

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

ATTENTION TO: Ian Acheson

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - BNA (full) + PAHs (Water)

DATE RECEIVED: 2018-10-29

DATE REPORTED: 2018-11-07

		SAMPLE DESCRIPTION:		MW304	MW304-1
		SAMPLE TYPE:		Water	Water
		DATE SAMPLED:		2018-10-26	2018-10-26
Parameter	Unit	G / S	RDL	9660602	9660638
Dimethyl phthalate	µg/L	38	0.5	<0.5	<0.5
2,4 and 2,6-Dinitrotoluene	µg/L	5	0.5	<0.5	<0.5
Diethyl phthalate	µg/L	38	0.5	<0.5	<0.5
Pentachlorophenol	µg/L	30	0.5	<0.5	<0.5
3,3'-dichlorobenzidine	µg/L	0.5	0.5	<0.5	<0.5
Bis(2-Ethylhexyl)phthalate	µg/L	10	0.5	<0.5	<0.5
2,4-Dinitrophenol	µg/L	10	10	<10	<10
Surrogate	**Unit**	**Acceptable Limits**			
2,4,6-Tribromophenol	%	50-140		84	77
Chrysene-d12	%	50-140		64	63

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition - Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

9660602-9660638 To meet the MOE Reporting limits the sample extract was analysed using two separate GC/MS methods. The full scan BNA method is capable of detecting most of the compounds at the RDLs except for several PAHs. The PAHs were analysed using a SIM mode GC/MS method.
Note: The result for Benzo(b)Fluoranthene is the total of the Benzo(b)&(j)Fluoranthene isomers because the isomers co-elute on the GC column.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: Jinkal Patel

Results relate only to the items tested and to all the items tested

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AGAT WORK ORDER: 18T402897

PROJECT: 18.175

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

ATTENTION TO: Ian Acheson

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - PHCs F1 - F4 (with PAHs) (Soil)

DATE RECEIVED: 2018-10-29 **DATE REPORTED: 2018-11-07**

		SAMPLE DESCRIPTION:		BH304-4
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2018-10-26
Parameter	**Unit**	**G / S**	**RDL**	**9660600**
F1 (C6 to C10)	µg/g	55	5	<5
F1 (C6 to C10) minus BTEX	µg/g	55	5	<5
F2 (C10 to C16)	µg/g	98	10	<10
F2 (C10 to C16) minus Naphthalene	µg/g		10	<10
F3 (C16 to C34)	µg/g	300	50	<50
F3 (C16 to C34) minus PAHs	µg/g		50	<50
F4 (C34 to C50)	µg/g	2800	50	<50
Gravimetric Heavy Hydrocarbons	µg/g	2800	50	NA
Moisture Content	%		0.1	17.9
Surrogate	**Unit**	**Acceptable Limits**		
Terphenyl	%	60-140		106

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

9660600 Results are based on sample dry weight.
The C6-C10 fraction is calculated using toluene response factor.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
The chromatogram has returned to baseline by the retention time of nC50.
Total C6 - C50 results are corrected for BTEX and PAH contributions.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: Jinkal Patel

Results relate only to the items tested and to all the items tested

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AGAT WORK ORDER: 18T402897

PROJECT: 18.175

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

ATTENTION TO: Ian Acheson

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - PHCs F1 - F4 (with PAHs) (Water)

DATE RECEIVED: 2018-10-29 **DATE REPORTED: 2018-11-07**

		SAMPLE DESCRIPTION:		MW304
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2018-10-26
Parameter	**Unit**	**G / S**	**RDL**	**9660602**
F1 (C6-C10)	µg/L	750	25	<25
F1 (C6 to C10) minus BTEX	µg/L	750	25	<25
F2 (C10 to C16)	µg/L	150	100	<100
F2 (C10 to C16) minus Naphthalene	µg/L		100	<100
F3 (C16 to C34)	µg/L	500	100	<100
F3 (C16 to C34) minus PAHs	µg/L		100	<100
F4 (C34 to C50)	µg/L	500	100	<100
Gravimetric Heavy Hydrocarbons	µg/L	500	500	NA
Surrogate	**Unit**	**Acceptable Limits**		
Terphenyl	%	60-140		87

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition - Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

9660602 The C6-C10 fraction is calculated using Toluene response factor.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and nC34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16 - C50 and are only determined if the chromatogram of the C34 - C50 Hydrocarbons indicated that hydrocarbons >C50 are present.
The chromatogram has returned to baseline by the retention time of nC50.
Total C6-C50 results are corrected for BTEX and PAH contributions.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: Jinkal Patel

Results relate only to the items tested and to all the items tested

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AGAT WORK ORDER: 18T402897

PROJECT: 18.175

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

ATTENTION TO: Ian Acheson

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - VOCs (Soil)

DATE RECEIVED: 2018-10-29

DATE REPORTED: 2018-11-07

		SAMPLE DESCRIPTION:		BH304-4
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2018-10-26
Parameter	Unit	G / S	RDL	9660600
Dichlorodifluoromethane	µg/g	16	0.05	<0.05
Vinyl Chloride	ug/g	0.02	0.02	<0.02
Bromomethane	ug/g	0.05	0.05	<0.05
Trichlorofluoromethane	ug/g	4	0.05	<0.05
Acetone	ug/g	16	0.50	<0.50
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.05
Methylene Chloride	ug/g	0.1	0.05	<0.05
Trans- 1,2-Dichloroethylene	ug/g	0.084	0.05	<0.05
Methyl tert-butyl Ether	ug/g	0.75	0.05	<0.05
1,1-Dichloroethane	ug/g	0.47	0.02	<0.02
Methyl Ethyl Ketone	ug/g	16	0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g	1.9	0.02	<0.02
Chloroform	ug/g	0.05	0.04	<0.04
1,2-Dichloroethane	ug/g	0.05	0.03	<0.03
1,1,1-Trichloroethane	ug/g	0.38	0.05	<0.05
Carbon Tetrachloride	ug/g	0.05	0.05	<0.05
Benzene	ug/g	0.21	0.02	<0.02
1,2-Dichloropropane	ug/g	0.05	0.03	<0.03
Trichloroethylene	ug/g	0.061	0.03	<0.03
Bromodichloromethane	ug/g	1.5	0.05	<0.05
Methyl Isobutyl Ketone	ug/g	1.7	0.50	<0.50
1,1,2-Trichloroethane	ug/g	0.05	0.04	<0.04
Toluene	ug/g	2.3	0.05	<0.05
Dibromochloromethane	ug/g	2.3	0.05	<0.05
Ethylene Dibromide	ug/g	0.05	0.04	<0.04
Tetrachloroethylene	ug/g	0.28	0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g	0.058	0.04	<0.04
Chlorobenzene	ug/g	2.4	0.05	<0.05
Ethylbenzene	ug/g	1.1	0.05	<0.05
m & p-Xylene	ug/g		0.05	<0.05

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 18T402897

PROJECT: 18.175

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

ATTENTION TO: Ian Acheson

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - VOCs (Soil)

DATE RECEIVED: 2018-10-29 **DATE REPORTED: 2018-11-07**

		SAMPLE DESCRIPTION:		BH304-4
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2018-10-26
Parameter	**Unit**	**G / S**	**RDL**	**9660600**
Bromoform	ug/g	0.27	0.05	<0.05
Styrene	ug/g	0.7	0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	<0.05
o-Xylene	ug/g		0.05	<0.05
1,3-Dichlorobenzene	ug/g	4.8	0.05	<0.05
1,4-Dichlorobenzene	ug/g	0.083	0.05	<0.05
1,2-Dichlorobenzene	ug/g	1.2	0.05	<0.05
Xylene Mixture	ug/g	3.1	0.05	<0.05
1,3-Dichloropropene	µg/g	0.05	0.04	<0.04
n-Hexane	µg/g	2.8	0.05	<0.05
Surrogate	**Unit**	**Acceptable Limits**		
Toluene-d8	% Recovery	50-140		98
4-Bromofluorobenzene	% Recovery	50-140		88

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

9660600 The sample was analysed using the high level technique. The sample was extracted using methanol, a small amount of the methanol extract was diluted in water and the purge & trap GC/MS analysis was performed. Results are based on the dry weight of the soil.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



Results relate only to the items tested and to all the items tested

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AGAT WORK ORDER: 18T402897

PROJECT: 18.175

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

ATTENTION TO: Ian Acheson

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2018-10-29

DATE REPORTED: 2018-11-07

		SAMPLE DESCRIPTION:		MW304
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2018-10-26
Parameter	Unit	G / S	RDL	9660602
Dichlorodifluoromethane	µg/L	590	0.20	<0.20
Vinyl Chloride	µg/L	0.5	0.17	<0.17
Bromomethane	µg/L	0.89	0.20	<0.20
Trichlorofluoromethane	µg/L	150	0.40	<0.40
Acetone	µg/L	2700	1.0	<1.0
1,1-Dichloroethylene	µg/L	1.6	0.30	<0.30
Methylene Chloride	µg/L	50	0.30	<0.30
trans- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20
Methyl tert-butyl ether	µg/L	15	0.20	<0.20
1,1-Dichloroethane	µg/L	5	0.30	<0.30
Methyl Ethyl Ketone	µg/L	1800	1.0	<1.0
cis- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20
Chloroform	µg/L	2.4	0.20	<0.20
1,2-Dichloroethane	µg/L	1.6	0.20	<0.20
1,1,1-Trichloroethane	µg/L	200	0.30	<0.30
Carbon Tetrachloride	µg/L	0.79	0.20	<0.20
Benzene	µg/L	5.0	0.20	<0.20
1,2-Dichloropropane	µg/L	5	0.20	<0.20
Trichloroethylene	µg/L	1.6	0.20	<0.20
Bromodichloromethane	µg/L	16	0.20	<0.20
Methyl Isobutyl Ketone	µg/L	640	1.0	3.7
1,1,2-Trichloroethane	µg/L	4.7	0.20	<0.20
Toluene	µg/L	24	0.20	1.1
Dibromochloromethane	µg/L	25	0.10	<0.10
Ethylene Dibromide	µg/L	0.2	0.10	<0.10
Tetrachloroethylene	µg/L	1.6	0.20	<0.20
1,1,1,2-Tetrachloroethane	µg/L	1.1	0.10	<0.10
Chlorobenzene	µg/L	30	0.10	<0.10
Ethylbenzene	µg/L	2.4	0.10	0.23
m & p-Xylene	µg/L		0.20	0.66

Certified By:

Results relate only to the items tested and to all the items tested

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AGAT WORK ORDER: 18T402897

PROJECT: 18.175

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

ATTENTION TO: Ian Acheson

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2018-10-29

DATE REPORTED: 2018-11-07

		SAMPLE DESCRIPTION:		MW304
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2018-10-26
Parameter	**Unit**	**G / S**	**RDL**	**9660602**
Bromoform	µg/L	25	0.10	<0.10
Styrene	µg/L	5.4	0.10	<0.10
1,1,2,2-Tetrachloroethane	µg/L	1	0.10	<0.10
o-Xylene	µg/L		0.10	0.21
1,3-Dichlorobenzene	µg/L	59	0.10	<0.10
1,4-Dichlorobenzene	µg/L	1	0.10	<0.10
1,2-Dichlorobenzene	µg/L	3	0.10	<0.10
1,3-Dichloropropene	µg/L	0.5	0.30	<0.30
Xylene Mixture	µg/L	300	0.20	0.87
n-Hexane	µg/L	51	0.20	0.77
Surrogate	**Unit**	**Acceptable Limits**		
Toluene-d8	% Recovery	50-140		109
4-Bromofluorobenzene	% Recovery	50-140		87

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition - Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



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AGAT WORK ORDER: 18T402897

PROJECT: 18.175

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

ATTENTION TO: Ian Acheson

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - Metals (Including Hydrides) (Water)

DATE RECEIVED: 2018-10-29

DATE REPORTED: 2018-11-07

		SAMPLE DESCRIPTION:		MW304
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2018-10-26
Parameter	Unit	G / S	RDL	9660602
Antimony	µg/L	6	1.0	<1.0
Arsenic	µg/L	25	1.0	2.0
Barium	µg/L	1000	2.0	649
Beryllium	µg/L	4.0	0.5	<0.5
Boron	µg/L	5000	10.0	803
Cadmium	µg/L	2.7	0.2	<0.2
Chromium	µg/L	50	2.0	<2.0
Cobalt	µg/L	3.8	0.5	0.7
Copper	µg/L	87	1.0	2.2
Lead	µg/L	10	0.5	<0.5
Molybdenum	µg/L	70	0.5	3.0
Nickel	µg/L	100	1.0	1.6
Selenium	µg/L	10	1.0	7.4
Silver	µg/L	1.5	0.2	<0.2
Thallium	µg/L	2	0.3	<0.3
Uranium	µg/L	20	0.5	2.1
Vanadium	µg/L	6.2	0.4	2.4
Zinc	µg/L	1100	5.0	5.2

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition - Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: Vivine Basily

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Quality Assurance

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

AGAT WORK ORDER: 18T402897

PROJECT: 18.175

ATTENTION TO: Ian Acheson

SAMPLING SITE:

SAMPLED BY:

Soil Analysis

RPT Date: Nov 07, 2018			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals (Including Hydrides) (Soil)															
Antimony	9660600	9660600	<0.8	<0.8	NA	< 0.8	101%	70%	130%	100%	80%	120%	85%	70%	130%
Arsenic	9660600	9660600	<1	<1	NA	< 1	108%	70%	130%	107%	80%	120%	111%	70%	130%
Barium	9660600	9660600	14	15	5.2%	< 2	101%	70%	130%	96%	80%	120%	109%	70%	130%
Beryllium	9660600	9660600	<0.5	<0.5	NA	< 0.5	90%	70%	130%	110%	80%	120%	103%	70%	130%
Boron	9660600	9660600	<5	<5	NA	< 5	75%	70%	130%	113%	80%	120%	103%	70%	130%
Cadmium	9660600	9660600	<0.5	<0.5	NA	< 0.5	102%	70%	130%	98%	80%	120%	111%	70%	130%
Chromium	9660600	9660600	4	4	NA	< 2	94%	70%	130%	103%	80%	120%	106%	70%	130%
Cobalt	9660600	9660600	1.6	1.4	NA	< 0.5	94%	70%	130%	102%	80%	120%	103%	70%	130%
Copper	9660600	9660600	3	3	NA	< 1	103%	70%	130%	102%	80%	120%	95%	70%	130%
Lead	9660600	9660600	1	1	NA	< 1	99%	70%	130%	109%	80%	120%	108%	70%	130%
Molybdenum	9660600	9660600	<0.5	<0.5	NA	< 0.5	98%	70%	130%	99%	80%	120%	109%	70%	130%
Nickel	9660600	9660600	2	2	NA	< 1	96%	70%	130%	98%	80%	120%	104%	70%	130%
Selenium	9660600	9660600	<0.4	0.4	NA	< 0.4	102%	70%	130%	99%	80%	120%	105%	70%	130%
Silver	9660600	9660600	<0.2	<0.2	NA	< 0.2	103%	70%	130%	96%	80%	120%	94%	70%	130%
Thallium	9660600	9660600	<0.4	<0.4	NA	< 0.4	101%	70%	130%	94%	80%	120%	96%	70%	130%
Uranium	9660600	9660600	<0.5	<0.5	NA	< 0.5	113%	70%	130%	105%	80%	120%	105%	70%	130%
Vanadium	9660600	9660600	10	10	5.5%	< 1	93%	70%	130%	98%	80%	120%	104%	70%	130%
Zinc	9660600	9660600	7	6	NA	< 5	96%	70%	130%	99%	80%	120%	122%	70%	130%

Comments: NA signifies Not Applicable.
Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By: Nivine Basily

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Quality Assurance

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

AGAT WORK ORDER: 18T402897

PROJECT: 18.175

ATTENTION TO: Ian Acheson

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis

RPT Date: Nov 07, 2018			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - VOCs (Soil)															
Dichlorodifluoromethane	9663136		< 0.05	< 0.05	NA	< 0.05	102%	50%	140%	104%	50%	140%	89%	50%	140%
Vinyl Chloride	9663136		< 0.02	< 0.02	NA	< 0.02	98%	50%	140%	91%	50%	140%	89%	50%	140%
Bromomethane	9663136		< 0.05	< 0.05	NA	< 0.05	79%	50%	140%	113%	50%	140%	90%	50%	140%
Trichlorofluoromethane	9663136		< 0.05	< 0.05	NA	< 0.05	80%	50%	140%	106%	50%	140%	94%	50%	140%
Acetone	9663136		< 0.50	< 0.50	NA	< 0.50	109%	50%	140%	79%	50%	140%	77%	50%	140%
1,1-Dichloroethylene	9663136		< 0.05	< 0.05	NA	< 0.05	88%	50%	140%	108%	60%	130%	93%	50%	140%
Methylene Chloride	9663136		< 0.05	< 0.05	NA	< 0.05	111%	50%	140%	110%	60%	130%	112%	50%	140%
Trans- 1,2-Dichloroethylene	9663136		< 0.05	< 0.05	NA	< 0.05	82%	50%	140%	96%	60%	130%	82%	50%	140%
Methyl tert-butyl Ether	9663136		< 0.05	< 0.05	NA	< 0.05	100%	50%	140%	99%	60%	130%	86%	50%	140%
1,1-Dichloroethane	9663136		< 0.02	< 0.02	NA	< 0.02	79%	50%	140%	94%	60%	130%	76%	50%	140%
Methyl Ethyl Ketone	9663136		< 0.50	< 0.50	NA	< 0.50	93%	50%	140%	92%	50%	140%	100%	50%	140%
Cis- 1,2-Dichloroethylene	9663136		< 0.02	< 0.02	NA	< 0.02	89%	50%	140%	97%	60%	130%	86%	50%	140%
Chloroform	9663136		< 0.04	< 0.04	NA	< 0.04	90%	50%	140%	100%	60%	130%	88%	50%	140%
1,2-Dichloroethane	9663136		< 0.03	< 0.03	NA	< 0.03	103%	50%	140%	98%	60%	130%	92%	50%	140%
1,1,1-Trichloroethane	9663136		< 0.05	< 0.05	NA	< 0.05	78%	50%	140%	80%	60%	130%	78%	50%	140%
Carbon Tetrachloride	9663136		< 0.05	< 0.05	NA	< 0.05	76%	50%	140%	85%	60%	130%	80%	50%	140%
Benzene	9663136		< 0.02	< 0.02	NA	< 0.02	97%	50%	140%	97%	60%	130%	85%	50%	140%
1,2-Dichloropropane	9663136		< 0.03	< 0.03	NA	< 0.03	73%	50%	140%	89%	60%	130%	74%	50%	140%
Trichloroethylene	9663136		< 0.03	< 0.03	NA	< 0.03	80%	50%	140%	96%	60%	130%	84%	50%	140%
Bromodichloromethane	9663136		< 0.05	< 0.05	NA	< 0.05	73%	50%	140%	81%	60%	130%	74%	50%	140%
Methyl Isobutyl Ketone	9663136		< 0.50	< 0.50	NA	< 0.50	97%	50%	140%	85%	50%	140%	84%	50%	140%
1,1,2-Trichloroethane	9663136		< 0.04	< 0.04	NA	< 0.04	101%	50%	140%	110%	60%	130%	99%	50%	140%
Toluene	9663136		< 0.05	< 0.05	NA	< 0.05	97%	50%	140%	118%	60%	130%	102%	50%	140%
Dibromochloromethane	9663136		< 0.05	< 0.05	NA	< 0.05	78%	50%	140%	86%	60%	130%	75%	50%	140%
Ethylene Dibromide	9663136		< 0.04	< 0.04	NA	< 0.04	100%	50%	140%	93%	60%	130%	89%	50%	140%
Tetrachloroethylene	9663136		< 0.05	< 0.05	NA	< 0.05	105%	50%	140%	114%	60%	130%	98%	50%	140%
1,1,1,2-Tetrachloroethane	9663136		< 0.04	< 0.04	NA	< 0.04	97%	50%	140%	89%	60%	130%	78%	50%	140%
Chlorobenzene	9663136		< 0.05	< 0.05	NA	< 0.05	111%	50%	140%	113%	60%	130%	100%	50%	140%
Ethylbenzene	9663136		< 0.05	< 0.05	NA	< 0.05	100%	50%	140%	113%	60%	130%	96%	50%	140%
m & p-Xylene	9663136		< 0.05	< 0.05	NA	< 0.05	108%	50%	140%	119%	60%	130%	103%	50%	140%
Bromoform	9663136		< 0.05	< 0.05	NA	< 0.05	84%	50%	140%	77%	60%	130%	73%	50%	140%
Styrene	9663136		< 0.05	< 0.05	NA	< 0.05	85%	50%	140%	103%	60%	130%	90%	50%	140%
1,1,2,2-Tetrachloroethane	9663136		< 0.05	< 0.05	NA	< 0.05	95%	50%	140%	100%	60%	130%	96%	50%	140%
o-Xylene	9663136		< 0.05	< 0.05	NA	< 0.05	104%	50%	140%	117%	60%	130%	104%	50%	140%
1,3-Dichlorobenzene	9663136		< 0.05	< 0.05	NA	< 0.05	102%	50%	140%	104%	60%	130%	92%	50%	140%
1,4-Dichlorobenzene	9663136		< 0.05	< 0.05	NA	< 0.05	111%	50%	140%	111%	60%	130%	99%	50%	140%
1,2-Dichlorobenzene	9663136		< 0.05	< 0.05	NA	< 0.05	107%	50%	140%	103%	60%	130%	94%	50%	140%
1,3-Dichloropropene	9663136		< 0.04	< 0.04	NA	< 0.04	80%	50%	140%	88%	60%	130%	80%	50%	140%
n-Hexane	9663136		< 0.05	< 0.05	NA	< 0.05	80%	50%	140%	101%	60%	130%	98%	50%	140%

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Quality Assurance

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AGAT WORK ORDER: 18T402897

PROJECT: 18.175

ATTENTION TO: Ian Acheson

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis (Continued)

RPT Date: Nov 07, 2018

PARAMETER	Batch	Sample Id	DUPLICATE Dup #1	DUPLICATE Dup #2	DUPLICATE RPD	Method Blank	REFERENCE MATERIAL Measured Value	REFERENCE MATERIAL Acceptable Limits Lower	REFERENCE MATERIAL Acceptable Limits Upper	METHOD BLANK SPIKE Recovery	METHOD BLANK SPIKE Acceptable Limits Lower	METHOD BLANK SPIKE Acceptable Limits Upper	MATRIX SPIKE Recovery	MATRIX SPIKE Acceptable Limits Lower	MATRIX SPIKE Acceptable Limits Upper
O. Reg. 153(511) - PHCs F1 - F4 (with PAHs) (Soil)															
F1 (C6 to C10)	9655278		< 5	< 5	NA	< 5	78%	60%	130%	93%	85%	115%	78%	70%	130%
F2 (C10 to C16)	9652803		< 10	< 10	NA	< 10	103%	60%	130%	99%	80%	120%	75%	70%	130%
F3 (C16 to C34)	9652803		< 50	< 50	NA	< 50	104%	60%	130%	103%	80%	120%	81%	70%	130%
F4 (C34 to C50)	9652803		< 50	< 50	NA	< 50	97%	60%	130%	103%	80%	120%	85%	70%	130%
O. Reg. 153(511) - BNA (full) + PAHs (Soil)															
Naphthalene	9660600	9660600	< 0.05	< 0.05	NA	< 0.05	85%	50%	140%	92%	50%	140%	78%	50%	140%
Acenaphthylene	9660600	9660600	< 0.05	< 0.05	NA	< 0.05	87%	50%	140%	87%	50%	140%	75%	50%	140%
Acenaphthene	9660600	9660600	< 0.05	< 0.05	NA	< 0.05	99%	50%	140%	88%	50%	140%	78%	50%	140%
Fluorene	9660600	9660600	< 0.05	< 0.05	NA	< 0.05	91%	50%	140%	103%	50%	140%	97%	50%	140%
Phenanthrene	9660600	9660600	< 0.05	< 0.05	NA	< 0.05	102%	50%	140%	86%	50%	140%	95%	50%	140%
Anthracene	9660600	9660600	< 0.05	< 0.05	NA	< 0.05	104%	50%	140%	102%	50%	140%	95%	50%	140%
Fluoranthene	9660600	9660600	< 0.05	< 0.05	NA	< 0.05	102%	50%	140%	80%	50%	140%	93%	50%	140%
Pyrene	9660600	9660600	< 0.05	< 0.05	NA	< 0.05	99%	50%	140%	91%	50%	140%	98%	50%	140%
Benz(a)anthracene	9660600	9660600	< 0.05	< 0.05	NA	< 0.05	86%	50%	140%	87%	50%	140%	75%	50%	140%
Chrysene	9660600	9660600	< 0.05	< 0.05	NA	< 0.05	88%	50%	140%	90%	50%	140%	100%	50%	140%
Benzo(b)fluoranthene	9660600	9660600	< 0.05	< 0.05	NA	< 0.05	81%	50%	140%	101%	50%	140%	83%	50%	140%
Benzo(k)fluoranthene	9660600	9660600	< 0.05	< 0.05	NA	< 0.05	98%	50%	140%	94%	50%	140%	74%	50%	140%
Benzo(a)pyrene	9660600	9660600	< 0.05	< 0.05	NA	< 0.05	103%	50%	140%	99%	50%	140%	95%	50%	140%
Indeno(1,2,3-cd)pyrene	9660600	9660600	< 0.05	< 0.05	NA	< 0.05	86%	50%	140%	80%	50%	140%	73%	50%	140%
Dibenz(a,h)anthracene	9660600	9660600	< 0.05	< 0.05	NA	< 0.05	105%	50%	140%	91%	50%	140%	96%	50%	140%
Benzo(g,h,i)perylene	9660600	9660600	< 0.05	< 0.05	NA	< 0.05	103%	50%	140%	87%	50%	140%	80%	50%	140%
Phenol	9660600	9660600	< 0.5	< 0.5	NA	< 0.5	82%	30%	130%	89%	30%	130%	98%	30%	130%
Bis(2-chloroethyl)ether	9660600	9660600	< 0.1	< 0.1	NA	< 0.1	103%	50%	140%	85%	50%	140%	87%	50%	140%
2-Chlorophenol	9660600	9660600	< 0.1	< 0.1	NA	< 0.1	95%	50%	140%	71%	50%	140%	74%	50%	140%
o-Cresol	9660600	9660600	< 0.1	< 0.1	NA	< 0.1	91%	50%	140%	114%	50%	140%	120%	50%	140%
Bis(2-chloroisopropyl)ether	9660600	9660600	< 0.1	< 0.1	NA	< 0.1	96%	50%	140%	93%	50%	140%	77%	50%	140%
m & p - Cresol	9660600	9660600	< 0.1	< 0.1	NA	< 0.1	97%	50%	140%	97%	50%	140%	88%	50%	140%
2,4-Dimethylphenol	9660600	9660600	< 0.2	< 0.2	NA	< 0.2	97%	30%	130%	92%	30%	130%	96%	30%	130%
2,4-Dichlorophenol	9660600	9660600	< 0.1	< 0.1	NA	< 0.1	100%	50%	140%	92%	50%	140%	76%	50%	140%
1,2,4-Trichlorobenzene	9660600	9660600	< 0.05	< 0.05	NA	< 0.05	100%	50%	140%	88%	50%	140%	72%	50%	140%
p-Chloroaniline	9660600	9660600	< 0.5	< 0.5	NA	< 0.5	98%	30%	130%	83%	30%	130%	76%	30%	130%
2-and 1-methyl Naphthalene	9660600	9660600	< 0.05	< 0.05	NA	< 0.05	91%	50%	140%	94%	50%	140%	93%	50%	140%
2,4,6-Trichlorophenol	9660600	9660600	< 0.1	< 0.1	NA	< 0.1	101%	50%	140%	85%	50%	140%	87%	50%	140%
2,4,5-Trichlorophenol	9660600	9660600	< 0.1	< 0.1	NA	< 0.1	102%	50%	140%	98%	50%	140%	96%	50%	140%
1,1-Biphenyl	9660600	9660600	< 0.05	< 0.05	NA	< 0.05	84%	50%	140%	80%	50%	140%	74%	50%	140%
Dimethyl Phthalate	9660600	9660600	< 0.1	< 0.1	NA	< 0.1	92%	50%	140%	102%	50%	140%	84%	50%	140%
2,4 and 2,6-Dinitrotoluene	9660600	9660600	< 0.5	< 0.5	NA	< 0.5	87%	50%	140%	90%	50%	140%	73%	50%	140%
Diethyl Phthalate	9660600	9660600	< 0.1	< 0.1	NA	< 0.1	95%	50%	140%	93%	50%	140%	95%	50%	140%

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AGAT WORK ORDER: 18T402897

PROJECT: 18.175

ATTENTION TO: Ian Acheson

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis (Continued)

RPT Date: Nov 07, 2018

PARAMETER	Batch	Sample Id	DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
			Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Pentachlorophenol	9660600	9660600	< 0.1	< 0.1	NA	< 0.1	100%	50%	140%	103%	50%	140%	94%	50%	140%
3,3'-Dichlorobenzidine	9660600	9660600	< 0.5	< 0.5	NA	< 0.5	78%	30%	130%	78%	30%	130%	78%	30%	130%
Bis(2-Ethylhexyl)phthalate	9660600	9660600	< 0.2	< 0.2	NA	< 0.2	101%	50%	140%	95%	50%	140%	78%	50%	140%
2,4-Dinitrophenol	9660600	9660600	< 2.0	< 2.0	NA	< 2.0	93%	30%	130%	97%	30%	130%	74%	30%	130%
O. Reg. 153(511) - VOCs (Water)															
Dichlorodifluoromethane	9661118		< 0.20	< 0.20	NA	< 0.20	91%	50%	140%	116%	50%	140%	112%	50%	140%
Vinyl Chloride	9661118		< 0.17	< 0.17	NA	< 0.17	80%	50%	140%	118%	50%	140%	117%	50%	140%
Bromomethane	9661118		< 0.20	< 0.20	NA	< 0.20	77%	50%	140%	114%	50%	140%	114%	50%	140%
Trichlorofluoromethane	9661118		< 0.40	< 0.40	NA	< 0.40	91%	50%	140%	108%	50%	140%	111%	50%	140%
Acetone	9661118		< 1.0	< 1.0	NA	< 1.0	110%	50%	140%	110%	50%	140%	106%	50%	140%
1,1-Dichloroethylene	9661118		< 0.30	< 0.30	NA	< 0.30	72%	50%	140%	113%	60%	130%	116%	50%	140%
Methylene Chloride	9661118		< 0.30	< 0.30	NA	< 0.30	110%	50%	140%	112%	60%	130%	112%	50%	140%
trans- 1,2-Dichloroethylene	9661118		< 0.20	< 0.20	NA	< 0.20	89%	50%	140%	116%	60%	130%	119%	50%	140%
Methyl tert-butyl ether	9661118		< 0.20	< 0.20	NA	< 0.20	90%	50%	140%	75%	60%	130%	72%	50%	140%
1,1-Dichloroethane	9661118		< 0.30	< 0.30	NA	< 0.30	81%	50%	140%	114%	60%	130%	107%	50%	140%
Methyl Ethyl Ketone	9661118		< 1.0	< 1.0	NA	< 1.0	77%	50%	140%	85%	50%	140%	92%	50%	140%
cis- 1,2-Dichloroethylene	9661118		< 0.20	< 0.20	NA	< 0.20	73%	50%	140%	108%	60%	130%	109%	50%	140%
Chloroform	9661118		< 0.20	< 0.20	NA	< 0.20	90%	50%	140%	118%	60%	130%	103%	50%	140%
1,2-Dichloroethane	9661118		< 0.20	< 0.20	NA	< 0.20	80%	50%	140%	105%	60%	130%	105%	50%	140%
1,1,1-Trichloroethane	9661118		< 0.30	< 0.30	NA	< 0.30	82%	50%	140%	107%	60%	130%	110%	50%	140%
Carbon Tetrachloride	9661118		< 0.20	< 0.20	NA	< 0.20	96%	50%	140%	107%	60%	130%	107%	50%	140%
Benzene	9661118		< 0.20	< 0.20	NA	< 0.20	85%	50%	140%	104%	60%	130%	107%	50%	140%
1,2-Dichloropropane	9661118		< 0.20	< 0.20	NA	< 0.20	82%	50%	140%	91%	60%	130%	91%	50%	140%
Trichloroethylene	9661118		< 0.20	< 0.20	NA	< 0.20	71%	50%	140%	92%	60%	130%	88%	50%	140%
Bromodichloromethane	9661118		< 0.20	< 0.20	NA	< 0.20	74%	50%	140%	80%	60%	130%	82%	50%	140%
Methyl Isobutyl Ketone	9661118		< 1.0	< 1.0	NA	< 1.0	109%	50%	140%	108%	50%	140%	110%	50%	140%
1,1,2-Trichloroethane	9661118		< 0.20	< 0.20	NA	< 0.20	103%	50%	140%	109%	60%	130%	115%	50%	140%
Toluene	9661118		< 0.20	< 0.20	NA	< 0.20	99%	50%	140%	112%	60%	130%	112%	50%	140%
Dibromochloromethane	9661118		< 0.10	< 0.10	NA	< 0.10	77%	50%	140%	116%	60%	130%	114%	50%	140%
Ethylene Dibromide	9661118		< 0.10	< 0.10	NA	< 0.10	82%	50%	140%	103%	60%	130%	103%	50%	140%
Tetrachloroethylene	9661118		< 0.20	< 0.20	NA	< 0.20	85%	50%	140%	111%	60%	130%	116%	50%	140%
1,1,1,2-Tetrachloroethane	9661118		< 0.10	< 0.10	NA	< 0.10	75%	50%	140%	100%	60%	130%	97%	50%	140%
Chlorobenzene	9661118		< 0.10	< 0.10	NA	< 0.10	72%	50%	140%	114%	60%	130%	113%	50%	140%
Ethylbenzene	9661118		< 0.10	< 0.10	NA	< 0.10	72%	50%	140%	105%	60%	130%	103%	50%	140%
m & p-Xylene	9661118		< 0.20	< 0.20	NA	< 0.20	82%	50%	140%	112%	60%	130%	118%	50%	140%
Bromoform	9661118		< 0.10	< 0.10	NA	< 0.10	84%	50%	140%	85%	60%	130%	76%	50%	140%
Styrene	9661118		< 0.10	< 0.10	NA	< 0.10	97%	50%	140%	109%	60%	130%	105%	50%	140%
1,1,2,2-Tetrachloroethane	9661118		< 0.10	< 0.10	NA	< 0.10	102%	50%	140%	107%	60%	130%	119%	50%	140%
o-Xylene	9661118		< 0.10	< 0.10	NA	< 0.10	80%	50%	140%	112%	60%	130%	109%	50%	140%

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Quality Assurance

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

AGAT WORK ORDER: 18T402897

PROJECT: 18.175

ATTENTION TO: Ian Acheson

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis (Continued)

RPT Date: Nov 07, 2018			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
1,3-Dichlorobenzene	9661118		< 0.10	< 0.10	NA	< 0.10	84%	50%	140%	110%	60%	130%	104%	50%	140%
1,4-Dichlorobenzene	9661118		< 0.10	< 0.10	NA	< 0.10	71%	50%	140%	114%	60%	130%	110%	50%	140%
1,2-Dichlorobenzene	9661118		< 0.10	< 0.10	NA	< 0.10	70%	50%	140%	107%	60%	130%	103%	50%	140%
1,3-Dichloropropene	9661118		< 0.30	< 0.30	NA	< 0.30	80%	50%	140%	88%	60%	130%	85%	50%	140%
n-Hexane	9661118		< 0.20	< 0.20	NA	< 0.20	92%	50%	140%	105%	60%	130%	116%	50%	140%
O. Reg. 153(511) - PHCs F1 - F4 (with PAHs) (Water)															
F1 (C6-C10)	9662584		< 25	< 25	NA	< 25	89%	60%	140%	86%	60%	140%	87%	60%	140%
F2 (C10 to C16)		TW	< 100	< 100	NA	< 100	107%	60%	140%	70%	60%	140%	69%	60%	140%
F3 (C16 to C34)		TW	< 100	< 100	NA	< 100	106%	60%	140%	107%	60%	140%	103%	60%	140%
F4 (C34 to C50)		TW	< 100	< 100	NA	< 100	93%	60%	140%	97%	60%	140%	98%	60%	140%
O. Reg. 153(511) - BNA (full) + PAHs (Water)															
Naphthalene		TW	< 0.20	< 0.20	NA	< 0.20	102%	50%	140%	102%	50%	140%	94%	50%	140%
Acenaphthylene		TW	< 0.20	< 0.20	NA	< 0.20	89%	50%	140%	88%	50%	140%	99%	50%	140%
Acenaphthene		TW	< 0.20	< 0.20	NA	< 0.20	102%	50%	140%	99%	50%	140%	93%	50%	140%
Fluorene		TW	< 0.20	< 0.20	NA	< 0.20	97%	50%	140%	87%	50%	140%	101%	50%	140%
Phenanthrene		TW	< 0.10	< 0.10	NA	< 0.10	101%	50%	140%	94%	50%	140%	82%	50%	140%
Anthracene		TW	< 0.10	< 0.10	NA	< 0.10	94%	50%	140%	92%	50%	140%	84%	50%	140%
Fluoranthene		TW	< 0.20	< 0.20	NA	< 0.20	81%	50%	140%	79%	50%	140%	75%	50%	140%
Pyrene		TW	< 0.20	< 0.20	NA	< 0.20	79%	50%	140%	77%	50%	140%	77%	50%	140%
Benz(a)anthracene		TW	< 0.20	< 0.20	NA	< 0.20	75%	50%	140%	70%	50%	140%	70%	50%	140%
Chrysene		TW	< 0.10	< 0.10	NA	< 0.10	72%	50%	140%	69%	50%	140%	74%	50%	140%
Benzo(b)fluoranthene		TW	< 0.10	< 0.10	NA	< 0.10	83%	50%	140%	88%	50%	140%	100%	50%	140%
Benzo(k)fluoranthene		TW	< 0.10	< 0.10	NA	< 0.10	101%	50%	140%	102%	50%	140%	93%	50%	140%
Benzo(a)pyrene		TW	< 0.01	< 0.01	NA	< 0.01	110%	50%	140%	106%	50%	140%	99%	50%	140%
Indeno(1,2,3-cd)pyrene		TW	< 0.20	< 0.20	NA	< 0.20	100%	50%	140%	95%	50%	140%	98%	50%	140%
Dibenz(a,h)anthracene		TW	< 0.20	< 0.20	NA	< 0.20	92%	50%	140%	97%	50%	140%	103%	50%	140%
Benzo(g,h,i)perylene		TW	< 0.20	< 0.20	NA	< 0.20	93%	50%	140%	89%	50%	140%	81%	50%	140%
Phenol		TW	< 1.0	< 1.0	NA	< 1.0	81%	30%	130%	99%	30%	130%	98%	30%	130%
Bis(2-chloroethyl)ether		TW	< 0.5	< 0.5	NA	< 0.5	91%	50%	140%	87%	50%	140%	81%	50%	140%
2-Chlorophenol		TW	< 0.5	< 0.5	NA	< 0.5	94%	50%	140%	93%	50%	140%	84%	50%	140%
o-Cresol		TW	< 0.5	< 0.5	NA	< 0.5	92%	50%	140%	74%	50%	140%	87%	50%	140%
Bis(2-chloroisopropyl)ether		TW	< 0.5	< 0.5	NA	< 0.5	104%	50%	140%	87%	50%	140%	81%	50%	140%
m&p-Cresol		TW	< 0.6	< 0.6	NA	< 0.6	102%	50%	140%	97%	50%	140%	97%	50%	140%
2,4-Dimethylphenol		TW	< 0.5	< 0.5	NA	< 0.5	105%	30%	130%	98%	30%	130%	102%	30%	130%
2,4-Dichlorophenol		TW	< 0.3	< 0.3	NA	< 0.3	106%	50%	140%	101%	50%	140%	94%	50%	140%
1,2,4-Trichlorobenzene		TW	< 0.5	< 0.5	NA	< 0.5	97%	50%	140%	97%	50%	140%	90%	50%	140%
p-Chloroaniline		TW	< 1.0	< 1.0	NA	< 1.0	83%	30%	130%	88%	30%	130%	75%	30%	130%
2-and 1-methyl Naphthalene		TW	< 0.5	< 0.5	NA	< 0.5	99%	50%	140%	116%	50%	140%	89%	50%	140%
2,4,6-Trichlorophenol		TW	< 0.2	< 0.2	NA	< 0.2	101%	50%	140%	92%	50%	140%	95%	50%	140%

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Quality Assurance

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

AGAT WORK ORDER: 18T402897

PROJECT: 18.175

ATTENTION TO: Ian Acheson

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis (Continued)

RPT Date: Nov 07, 2018			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
2,4,5-Trichlorophenol		TW	< 0.2	< 0.2	NA	< 0.2	92%	50%	140%	100%	50%	140%	91%	50%	140%
1,1'-Biphenyl		TW	< 0.5	< 0.5	NA	< 0.5	91%	50%	140%	94%	50%	140%	97%	50%	140%
Dimethyl phthalate		TW	< 0.5	< 0.5	NA	< 0.5	94%	50%	140%	102%	50%	140%	96%	50%	140%
Diethyl phthalate		TW	< 0.5	< 0.5	NA	< 0.5	105%	50%	140%	98%	50%	140%	95%	50%	140%
Pentachlorophenol		TW	< 0.5	< 0.5	NA	< 0.5	71%	50%	140%	89%	50%	140%	99%	50%	140%
3,3'-dichlorobenzidine		TW	< 0.5	< 0.5	NA	< 0.5	64%	30%	130%	94%	30%	130%	68%	30%	130%
Bis(2-Ethylhexyl)phthalate		TW	< 0.5	< 0.5	NA	< 0.5	94%	50%	140%	102%	50%	140%	97%	50%	140%
2,4-Dinitrophenol		TW	< 10	< 10	NA	< 10	65%	30%	130%	77%	30%	130%	74%	30%	130%

Comments: Tap water analysis has been performed as QC sample testing for duplicate and matrix spike due to insufficient sample volume.
When the average of the sample and duplicate results is less than 5x the RDL, the Relative Percent Difference (RPD) will be indicated as Not Applicable (NA).

Certified By:

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AGAT WORK ORDER: 18T402897

PROJECT: 18.175

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SAMPLING SITE:

SAMPLED BY:

Water Analysis

RPT Date: Nov 07, 2018			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals (Including Hydrides) (Water)															
Antimony	9659218		<1.0	<1.0	NA	< 1.0	103%	70%	130%	98%	80%	120%	101%	70%	130%
Arsenic	9659218		1.3	1.1	NA	< 1.0	96%	70%	130%	100%	80%	120%	97%	70%	130%
Barium	9659218		365	336	8.2%	< 2.0	107%	70%	130%	104%	80%	120%	107%	70%	130%
Beryllium	9659218		<0.5	<0.5	NA	< 0.5	99%	70%	130%	99%	80%	120%	102%	70%	130%
Boron	9659218		1650	1680	1.7%	< 10.0	104%	70%	130%	104%	80%	120%	115%	70%	130%
Cadmium	9659218		<0.2	<0.2	NA	< 0.2	101%	70%	130%	97%	80%	120%	103%	70%	130%
Chromium	9659218		3.4	3.5	NA	< 2.0	94%	70%	130%	98%	80%	120%	94%	70%	130%
Cobalt	9659218		5.3	5.6	6.7%	< 0.5	97%	70%	130%	101%	80%	120%	96%	70%	130%
Copper	9659218		2.6	2.7	NA	< 1.0	99%	70%	130%	104%	80%	120%	102%	70%	130%
Lead	9659218		<0.5	<0.5	NA	< 0.5	102%	70%	130%	101%	80%	120%	97%	70%	130%
Molybdenum	9659218		<0.5	<0.5	NA	< 0.5	101%	70%	130%	95%	80%	120%	97%	70%	130%
Nickel	9659218		3.8	4.3	NA	< 1.0	98%	70%	130%	104%	80%	120%	99%	70%	130%
Selenium	9659218		3.5	2.8	NA	< 1.0	106%	70%	130%	107%	80%	120%	103%	70%	130%
Silver	9659218		<0.2	<0.2	NA	< 0.2	101%	70%	130%	106%	80%	120%	103%	70%	130%
Thallium	9659218		<0.3	<0.3	NA	< 0.3	105%	70%	130%	102%	80%	120%	101%	70%	130%
Uranium	9659218		4.4	4.6	3.0%	< 0.5	97%	70%	130%	96%	80%	120%	93%	70%	130%
Vanadium	9659218		1.8	1.8	NA	< 0.4	97%	70%	130%	98%	80%	120%	97%	70%	130%
Zinc	9659218		9.9	10.5	NA	< 5.0	105%	70%	130%	104%	80%	120%	108%	70%	130%

Comments: NA signifies Not Applicable.
Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By: Nivine Basily

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Method Summary

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AGAT WORK ORDER: 18T402897

PROJECT: 18.175

ATTENTION TO: Ian Acheson

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SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Arsenic	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Barium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Beryllium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Boron	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Cadmium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Chromium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Cobalt	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Copper	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Lead	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Molybdenum	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Nickel	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Selenium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Silver	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Thallium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Uranium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Vanadium	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS
Zinc	MET-93-6103	EPA SW-846 3050B & 6020A	ICP-MS

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Naphthalene	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
Acenaphthylene	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
Acenaphthene	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
Fluorene	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
Phenanthrene	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
Anthracene	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
Fluoranthene	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
Pyrene	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
Benz(a)anthracene	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
Chrysene	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
Benzo(b)fluoranthene	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
Benzo(k)fluoranthene	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
Benzo(a)pyrene	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
Dibenz(a,h)anthracene	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
Benzo(g,h,i)perylene	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
Phenol	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
Bis(2-chloroethyl)ether	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
2-Chlorophenol	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
o-Cresol	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
Bis(2-chloroisopropyl)ether	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
m & p - Cresol	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
2,4-Dimethylphenol	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
2,4-Dichlorophenol	ORG-91-5114	EPA SW-846 3510C & 8270D	GC/MS
1,2,4-Trichlorobenzene	ORG-91-5114	EPA SW-846 3541 & 8270	GC/MS
p-Chloroaniline	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
2-and 1-methyl Naphthalene	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
2,4,6-Trichlorophenol	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
2,4,5-Trichlorophenol	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
1,1-Biphenyl	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
Dimethyl Phthalate	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
2,4 and 2,6-Dinitrotoluene	ORG-91-5114	EPA SW-846 3541 & 8270	GC/MS
Diethyl Phthalate	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
Pentachlorophenol	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
3,3'-Dichlorobenzidine	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
Bis(2-Ethylhexyl)phthalate	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
2,4-Dinitrophenol	ORG-91-5114	EPA SW-846 3541 & 8270	GC/MS
Moisture Content		MOE E3139	BALANCE
2,4,6-Tribromophenol	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
Chrysene-d12	ORG-91-5114	EPA SW-846 3541 & 8270C	GC/MS
Naphthalene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Acenaphthylene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Acenaphthene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Fluorene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Phenanthrene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Anthracene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Fluoranthene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Pyrene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Benz(a)anthracene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS

Results relate only to the items tested and to all the items tested

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http://www.agatlabs.com

Method Summary

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

AGAT WORK ORDER: 18T402897

PROJECT: 18.175

ATTENTION TO: Ian Acheson

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Chrysene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Benzo(b)fluoranthene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Benzo(k)fluoranthene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Benzo(a)pyrene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Dibenz(a,h)anthracene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Benzo(g,h,i)perylene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Phenol	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Bis(2-chloroethyl)ether	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
2-Chlorophenol	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
o-Cresol	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Bis(2-chloroisopropyl)ether	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
m&p-Cresol	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
2,4-Dimethylphenol	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
1,2,4-Trichlorobenzene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
p-Chloroaniline	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
2-and 1-methyl Naphthalene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
2,4,6-Trichlorophenol	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
2,4,5-Trichlorophenol	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
1,1'-Biphenyl	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Dimethyl phthalate	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
2,4 and 2,6-Dinitrotoluene	ORG-91-5114	EPA SW-846 3510 & 8270	GC/MS
Diethyl phthalate	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Pentachlorophenol	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
3,3'-dichlorobenzidine	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Bis(2-Ethylhexyl)phthalate	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
2,4-Dinitrophenol	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
2,4,6-Tribromophenol	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Chrysene-d12	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
F1 (C6 to C10)	VOL-91-5009	CCME Tier 1 Method	GC / FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	CCME Tier 1 Method	GC / FID
F2 (C10 to C16)	VOL-91-5009	CCME Tier 1 Method	GC / FID
F2 (C10 to C16) minus Naphthalene	VOL-91-5009	CCME Tier 1 Method	GC / FID
F3 (C16 to C34)	VOL-91-5009	CCME Tier 1 Method	GC / FID
F3 (C16 to C34) minus PAHs	VOL-91-5009	CCME Tier 1 Method	GC / FID
F4 (C34 to C50)	VOL-91-5009	CCME Tier 1 Method	GC / FID
Gravimetric Heavy Hydrocarbons	VOL-91-5009	CCME Tier 1 Method	BALANCE
Moisture Content	VOL-91-5009	CCME Tier 1 Method	BALANCE
Terphenyl	VOL-91-5009		GC/FID
F1 (C6-C10)	VOL-91- 5010	MOE PHC-E3421	(P&T)GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5010	MOE PHC E3421	(P&T)GC/FID
F2 (C10 to C16)	VOL-91-5010	MOE PHC E3421	GC/FID
F2 (C10 to C16) minus Naphthalene	VOL-91-5010	MOE PHC E3421	GC/FID
F3 (C16 to C34)	VOL-91-5010	MOE PHC E3421	GC/FID
F3 (C16 to C34) minus PAHs	VOL-91-5010	MOE PHC E3421	GC/FID
F4 (C34 to C50)	VOL -91- 5010	MOE PHC- E3421	GC/FID
Gravimetric Heavy Hydrocarbons	VOL-91-5010	MOE PHC E3421	BALANCE
Terphenyl	VOL-91-5010		GC/FID
Dichlorodifluoromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Vinyl Chloride	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS

Results relate only to the items tested and to all the items tested

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http://www.agatlabs.com

Method Summary

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

AGAT WORK ORDER: 18T402897

PROJECT: 18.175

ATTENTION TO: Ian Acheson

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Bromomethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Acetone	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methylene Chloride	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Trans- 1,2-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methyl tert-butyl Ether	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Cis- 1,2-Dichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Chloroform	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Benzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Trichloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Bromodichloromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Toluene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Dibromochloromethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Chlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Ethylbenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
m & p-Xylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Bromoform	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Styrene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
o-Xylene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Xylene Mixture	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
1,3-Dichloropropene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
n-Hexane	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Toluene-d8	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5002	EPA SW-846 5035 & 8260	(P&T)GC/MS
Dichlorodifluoromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Vinyl Chloride	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Bromomethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Acetone	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methylene Chloride	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
trans- 1,2-Dichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methyl tert-butyl ether	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS

Results relate only to the items tested and to all the items tested

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FAX (905)712-5122
http://www.agatlabs.com

Method Summary

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

AGAT WORK ORDER: 18T402897

PROJECT: 18.175

ATTENTION TO: Ian Acheson

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Methyl Ethyl Ketone	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
cis- 1,2-Dichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Chloroform	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Benzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Trichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Bromodichloromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Toluene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Dibromochloromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Chlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Ethylbenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
m & p-Xylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Bromoform	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Styrene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
o-Xylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,3-Dichloropropene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Xylene Mixture	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
n-Hexane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Toluene-d8	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS

Results relate only to the items tested and to all the items tested

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Method Summary

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

AGAT WORK ORDER: 18T402897

PROJECT: 18.175

ATTENTION TO: Ian Acheson

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Antimony	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Arsenic	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Barium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Beryllium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Boron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Cadmium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Chromium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Cobalt	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Copper	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Lead	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Molybdenum	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Nickel	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Selenium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Silver	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Thallium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Uranium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Vanadium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Zinc	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

Results relate only to the items tested and to all the items tested

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5835 Coopers Avenue
Mississauga, Ontario L4Z 1Y2
Ph: 905.712.5100 Fax: 905.712.5122
webearth.agatlabs.com

Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans)

Laboratory Use Only
Work Order #: 18T402897
Cooler Quantity: 5 low
Arrival Temperatures:
Custody Seal Intact: ☐Yes ☐No ☐N/A
Notes:

Report Information:
Company: Azimuth Environmental Consulting Ltd
Contact: Ian Adhesen
Address: 642 Welham Rd
Barrie, ON
Phone: (705) 721-8451 Fax: (705) 721-8926
Reports to be sent to:
1. Email: iadhesen@azimuthenvironmental.com
2. Email: david@azimuthenvironmental.com

Regulatory Requirements: ☐ No Regulatory Requirement
(Please check all applicable boxes)

☒ Regulation 153/04
Table 2 (Indicate One)
☐ Ind/Com
☒ Res/Park
☐ Agriculture
Soil Texture (Check One)
☒ Coarse
☐ Fine

☐ Sewer Use
☐ Sanitary
☐ Storm
Region _____ (Indicate One)
☐ MISA

☐ Regulation 558
☐ CCME
☐ Prov. Water Quality Objectives (PWQO)
☐ Other
_____ (Indicate One)

Turnaround Time (TAT) Required:
Regular TAT ☒ 5 to 7 Business Days
Rush TAT (Rush Surcharges Apply)
☐ 3 Business Days ☐ 2 Business Days ☐ Next Business Day
OR Date Required (Rush Surcharges May Apply):
_____
Please provide prior notification for rush TAT
**TAT is exclusive of weekends and statutory holidays*
For 'Same Day' analysis, please contact your AGAT CPM

Project Information:
Project: 18-175
Site Location: 41 & 43 Essa Rd, Barrie, ON
Sampled By: I. Adhesen
AGAT Quote #: _____ PO: _____
Please note: If quotation number is not provided, client will be billed full price for analysis.

Is this submission for a **Record of Site Condition?** ☒ Yes ☐ No

Report Guideline on *Certificate of Analysis* ☒ Yes ☐ No

Invoice Information: Bill To Same: Yes ☒ No ☐
Company:
Contact:
Address:
Email:

Sample Matrix Legend
B Biota
GW Ground Water
O Oil
P Paint
S Soil
SD Sediment
SW Surface Water

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI (Y/N)	O. Reg 153: Metals and Inorganics (☒ All Metals ☐ 153 Metals (excl. Hydrides) ☐ Hydride Metals ☐ 153 Metals (Incl. Hydrides))	O. Reg 153: ORPs: ☐ B-HWS ☐ Cl⁻ ☐ CN ☐ Cr^{6+} ☐ EC ☐ FOC ☐ Hg ☐ pH ☐ SAR	O. Reg 153: Full Metals Scan	O. Reg 153: Regulation/Custom Metals	O. Reg 153: Nutrients: ☐ TP ☐ NH_3 ☐ TKN ☐ NO_3 ☐ NO_2 ☐ NO_3+NO_2	O. Reg 153: Volatiles: ☒ VOC ☐ BTEX ☐ THM	O. Reg 153: PHCs F1 - F4	O. Reg 153: ABNs	O. Reg 153: PAHs	O. Reg 153: PCBs: ☐ Total ☐ Aroclors	O. Reg 153: Organochlorine Pesticides	O. Reg 153: TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	O. Reg 153: Sewer Use
BH304-4	26Oct18	10:20	6	S		—	X					X	X	X				
MW304	26Oct18	11:40	4	GW		Y	X					X	X	X				
MW304-1	26Oct18	11:40	2	GW		N								X				

Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time
Ian Adhesen	26Oct18	12:00pm		2018/10/29	10:30
Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time
	2018/10/29	1:45			
Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time

Page 1 of 1
N°: T 080040

Document ID: DIV-78-1511.015

Pink Copy - Client | Yellow Copy - AGAT | White Copy- AGAT

AGAT Laboratories

Sample Temperature Log

Client: Azimuth

COC# or Work Order #: 080039-080040-075496-075495-075493

# of Coolers: 5

# of Submissions: 5

Arrival Temperatures - Branch/Driver

Cooler #1:	3.9	3.7	4.1
Cooler #2:	4	3.7	3.5
Cooler #3:	3.9	3.6	3.4
Cooler #4:	3.7	3.5	3.3
Cooler #5:	3.9	3.6	3.4
Cooler #6:			
Cooler #7:			
Cooler #8			
Cooler #9:			
Cooler #10:			

IR Gun ID:

Taken By: Ray

Date (yyyy/mm/dd): 2018/10/29 Time: 10:30 AM / PM

Arrival Temperatures - Laboratory

Cooler #1:	3.2	2.8	2.7
Cooler #2:	3.2	2.8	2.5
Cooler #3:	3.1	2.9	2.7
Cooler #4:	2.9	2.5	2.4
Cooler #5:	3	2.8	2.5
Cooler #6:			
Cooler #7:			
Cooler #8			
Cooler #9:			
Cooler #10:			

IR Gun ID:

Taken By: Ray

Date (yyyy/mm/dd): 2018/10/29 Time: 1:45 AM / PM

Instructions for use of this form: 1) complete all fields of info including total # of coolers and # of submissions rec'd, 2) photocopy and place in each submission prior to giving a WO#, 3) Proceed as normal, write the WO# and scan (please make sure to scan along with the COC)

AGAT Laboratories

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CANADA L4Z 1Y2
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FAX (905)712-5122
http://www.agatlabs.com

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,
642 WELHAM ROAD
BARRIE, ON L4N9A1
(705) 721-8451

ATTENTION TO: ian Adesen

PROJECT: 18.175

AGAT WORK ORDER: 18T402898

TRACE ORGANICS REVIEWED BY: Pinkal Patel, Report Reviewer

WATER ANALYSIS REVIEWED BY: Yris Verastegui, Report Reviewer

DATE REPORTED: Nov 07, 2018

PAGES (INCLUDING COVER): 19

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

Member of: Association of Professional Engineers and Geoscientists of Alberta (APEGA)
Western Enviro-Agricultural Laboratory Association (WEALA)
Environmental Services Association of Alberta (ESAA)

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Results relate only to the items tested and to all the items tested
All reportable information as specified by ISO 17025:2005 is available from AGAT Laboratories upon request

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Certificate of Analysis

AGAT WORK ORDER: 18T402898

PROJECT: 18.175

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

ATTENTION TO: ian Adesen

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - BNA (full) + PAHs (Water)

DATE RECEIVED: 2018-10-29

DATE REPORTED: 2018-11-07

		SAMPLE DESCRIPTION:		MW202	MW203
		SAMPLE TYPE:		Water	Water
		DATE SAMPLED:		2018-10-25	2018-10-25
Parameter	Unit	G / S	RDL	9660648	9660651
Naphthalene	µg/L	11	0.20	<0.20	<0.20
Acenaphthylene	µg/L	1	0.20	<0.20	<0.20
Acenaphthene	µg/L	4.1	0.20	<0.20	<0.20
Fluorene	µg/L	120	0.20	<0.20	<0.20
Phenanthrene	µg/L	1	0.10	<0.10	<0.10
Anthracene	µg/L	2.4	0.10	<0.10	<0.10
Fluoranthene	µg/L	0.41	0.20	<0.20	<0.20
Pyrene	µg/L	4.1	0.20	<0.20	<0.20
Benz(a)anthracene	µg/L	1	0.20	<0.20	<0.20
Chrysene	µg/L	0.1	0.10	<0.10	<0.10
Benzo(b)fluoranthene	µg/L	0.1	0.10	<0.10	<0.10
Benzo(k)fluoranthene	µg/L	0.1	0.10	<0.10	<0.10
Benzo(a)pyrene	µg/L	0.01	0.01	<0.01	<0.01
Indeno(1,2,3-cd)pyrene	µg/L	0.2	0.20	<0.20	<0.20
Dibenz(a,h)anthracene	µg/L	0.2	0.20	<0.20	<0.20
Benzo(g,h,i)perylene	µg/L	0.2	0.20	<0.20	<0.20
Phenol	µg/L	890	1.0	<1.0	<1.0
Bis(2-chloroethyl)ether	µg/L	5	0.5	<0.5	<0.5
2-Chlorophenol	µg/L	8.9	0.5	<0.5	<0.5
o-Cresol	µg/L		0.5	<0.5	<0.5
Bis(2-chloroisopropyl)ether	µg/L	120	0.5	<0.5	<0.5
m&p-Cresol	µg/L		0.6	<0.6	<0.6
2,4-Dimethylphenol	µg/L	59	0.5	<0.5	<0.5
2,4-Dichlorophenol	µg/L	20	0.3	<0.3	<0.3
1,2,4-Trichlorobenzene	ug/L	70	0.5	<0.5	<0.5
p-Chloroaniline	µg/L		1.0	<1.0	<1.0
2-and 1-methyl Naphthalene	µg/L	3.2	0.5	<0.5	<0.5
2,4,6-Trichlorophenol	µg/L	2	0.2	<0.2	<0.2
2,4,5-Trichlorophenol	µg/L	8.9	0.2	<0.2	<0.2
1,1'-Biphenyl	µg/L	0.5	0.5	<0.5	<0.5

Certified By: Pinkal Patel

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AGAT WORK ORDER: 18T402898

PROJECT: 18.175

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

ATTENTION TO: ian Adesen

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - BNA (full) + PAHs (Water)

DATE RECEIVED: 2018-10-29

DATE REPORTED: 2018-11-07

		SAMPLE DESCRIPTION:		MW202	MW203
		SAMPLE TYPE:		Water	Water
		DATE SAMPLED:		2018-10-25	2018-10-25
Parameter	Unit	G / S	RDL	9660648	9660651
Dimethyl phthalate	µg/L	38	0.5	<0.5	<0.5
2,4 and 2,6-Dinitrotoluene	µg/L	5	0.5	<0.5	<0.5
Diethyl phthalate	µg/L	38	0.5	<0.5	<0.5
Pentachlorophenol	µg/L	30	0.5	<0.5	<0.5
3,3'-dichlorobenzidine	µg/L	0.5	0.5	<0.5	<0.5
Bis(2-Ethylhexyl)phthalate	µg/L	10	0.5	<0.5	<0.5
2,4-Dinitrophenol	µg/L	10	10	<10	<10
Surrogate	**Unit**	**Acceptable Limits**			
2,4,6-Tribromophenol	%	50-140		89	93
Chrysene-d12	%	50-140		65	73

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition - Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

9660648-9660651 To meet the MOE Reporting limits the sample extract was analysed using two separate GC/MS methods. The full scan BNA method is capable of detecting most of the compounds at the RDLs except for several PAHs. The PAHs were analysed using a SIM mode GC/MS method.
Note: The result for Benzo(b)Fluoranthene is the total of the Benzo(b)&(j)Fluoranthene isomers because the isomers co-elute on the GC column.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: Pinkal Patel

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AGAT WORK ORDER: 18T402898

PROJECT: 18.175

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

ATTENTION TO: ian Adesen

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - PAHs (Water)

DATE RECEIVED: 2018-10-29

DATE REPORTED: 2018-11-07

		SAMPLE DESCRIPTION:		MW105	MW105-1
		SAMPLE TYPE:		Water	Water
		DATE SAMPLED:		2018-10-25	2018-10-25
Parameter	**Unit**	**G / S**	**RDL**	**9660644**	**9660645**
Naphthalene	µg/L	11	0.20	<0.20	<0.20
Acenaphthylene	µg/L	1	0.20	<0.20	<0.20
Acenaphthene	µg/L	4.1	0.20	<0.20	<0.20
Fluorene	µg/L	120	0.20	<0.20	<0.20
Phenanthrene	µg/L	1	0.10	<0.10	<0.10
Anthracene	µg/L	2.4	0.10	<0.10	<0.10
Fluoranthene	µg/L	0.41	0.20	<0.20	<0.20
Pyrene	µg/L	4.1	0.20	<0.20	<0.20
Benz(a)anthracene	µg/L	1	0.20	<0.20	<0.20
Chrysene	µg/L	0.1	0.10	<0.10	<0.10
Benzo(b)fluoranthene	µg/L	0.1	0.10	<0.10	<0.10
Benzo(k)fluoranthene	µg/L	0.1	0.10	<0.10	<0.10
Benzo(a)pyrene	µg/L	0.01	0.01	<0.01	<0.01
Indeno(1,2,3-cd)pyrene	µg/L	0.2	0.20	<0.20	<0.20
Dibenz(a,h)anthracene	µg/L	0.2	0.20	<0.20	<0.20
Benzo(g,h,i)perylene	µg/L	0.2	0.20	<0.20	<0.20
2-and 1-methyl Naphthalene	µg/L	3.2	0.20	<0.20	<0.20
Surrogate	**Unit**	**Acceptable Limits**			
Chrysene-d12	%	50-140		69	116

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition - Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

9660644-9660645 Note: The result for Benzo(b)Flouranthene is the total of the Benzo(b)&(j)Flouranthene isomers because the isomers co-elute on the GC column.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



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AGAT WORK ORDER: 18T402898

PROJECT: 18.175

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

ATTENTION TO: ian Adesen

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Water)

DATE RECEIVED: 2018-10-29

DATE REPORTED: 2018-11-07

		SAMPLE DESCRIPTION:		MW308	MW309	MW309-1
		SAMPLE TYPE:		Water	Water	Water
		DATE SAMPLED:		2018-10-25	2018-10-25	2018-10-25
Parameter	**Unit**	**G / S**	**RDL**	**9660643**	**9660646**	**9660647**
F1 (C6 - C10)	µg/L	750	25	<25	**900**	**1000**
F1 (C6 to C10) minus BTEX	µg/L	750	25	<25	360	340
F2 (C10 to C16)	µg/L	150	100	<100	<100	<100
F3 (C16 to C34)	µg/L	500	100	<100	<100	<100
F4 (C34 to C50)	µg/L	500	100	<100	<100	<100
Gravimetric Heavy Hydrocarbons	µg/L	500	500	NA	NA	NA
Surrogate	**Unit**	**Acceptable Limits**				
Terphenyl	%	60-140		102	76	74

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition - Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

9660643-9660647 The C6-C10 fraction is calculated using Toluene response factor.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and nC34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16 - C50 and are only determined if the chromatogram of the C34 - C50 Hydrocarbons indicated that hydrocarbons >C50 are present.
The chromatogram has returned to baseline by the retention time of nC50.
Total C6-C50 results are corrected for BTEX contributions.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.
Fractions 1-4 are quantified with the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: Pinkal Patel

Results relate only to the items tested and to all the items tested

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AGAT WORK ORDER: 18T402898

PROJECT: 18.175

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

ATTENTION TO: ian Adesen

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - PHCs F1 - F4 (with PAHs) (Water)

DATE RECEIVED: 2018-10-29

DATE REPORTED: 2018-11-07

		SAMPLE DESCRIPTION:		MW105
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2018-10-25
Parameter	**Unit**	**G / S**	**RDL**	**9660644**
F1 (C6-C10)	µg/L	750	25	<25
F1 (C6 to C10) minus BTEX	µg/L	750	25	<25
F2 (C10 to C16)	µg/L	150	100	<100
F2 (C10 to C16) minus Naphthalene	µg/L		100	<100
F3 (C16 to C34)	µg/L	500	100	<100
F3 (C16 to C34) minus PAHs	µg/L		100	<100
F4 (C34 to C50)	µg/L	500	100	<100
Gravimetric Heavy Hydrocarbons	µg/L	500	500	NA
Surrogate	**Unit**	**Acceptable Limits**		
Terphenyl	%	60-140		85

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition - Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

9660644 The C6-C10 fraction is calculated using Toluene response factor.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and nC34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16 - C50 and are only determined if the chromatogram of the C34 - C50 Hydrocarbons indicated that hydrocarbons >C50 are present.
The chromatogram has returned to baseline by the retention time of nC50.
Total C6-C50 results are corrected for BTEX and PAH contributions.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: Pinkal Patel

Results relate only to the items tested and to all the items tested

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 18T402898

PROJECT: 18.175

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

SAMPLING SITE:

ATTENTION TO: ian Adesen

SAMPLED BY:

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2018-10-29 **DATE REPORTED: 2018-11-07**

		SAMPLE DESCRIPTION:		MW305	MW308	MW105	MW309	MW309-1
		SAMPLE TYPE:		Water	Water	Water	Water	Water
		DATE SAMPLED:		2018-10-25	2018-10-25	2018-10-25	2018-10-25	2018-10-25
Parameter	Unit	G / S	RDL	9660642	9660643	9660644	9660646	9660647
Dichlorodifluoromethane	µg/L	590	0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Vinyl Chloride	µg/L	0.5	0.17	<0.17	<0.17	<0.17	<0.17	<0.17
Bromomethane	µg/L	0.89	0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Trichlorofluoromethane	µg/L	150	0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Acetone	µg/L	2700	1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethylene	µg/L	1.6	0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Methylene Chloride	µg/L	50	0.30	<0.30	<0.30	<0.30	<0.30	<0.30
trans- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Methyl tert-butyl ether	µg/L	15	0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1-Dichloroethane	µg/L	5	0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Methyl Ethyl Ketone	µg/L	1800	1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chloroform	µg/L	2.4	0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichloroethane	µg/L	1.6	0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1,1-Trichloroethane	µg/L	200	0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Carbon Tetrachloride	µg/L	0.79	0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Benzene	µg/L	5.0	0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichloropropane	µg/L	5	0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Trichloroethylene	µg/L	1.6	0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Bromodichloromethane	µg/L	16	0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Methyl Isobutyl Ketone	µg/L	640	1.0	5.9	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	µg/L	4.7	0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L	24	0.20	0.62	0.80	<0.20	2.8	3.5
Dibromochloromethane	µg/L	25	0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Ethylene Dibromide	µg/L	0.2	0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Tetrachloroethylene	µg/L	1.6	0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1,1,2-Tetrachloroethane	µg/L	1.1	0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Chlorobenzene	µg/L	30	0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Ethylbenzene	µg/L	2.4	0.10	0.28	0.15	<0.10	**47**	**48**
m & p-Xylene	µg/L		0.20	1.4	0.27	<0.20	370	460

Certified By:

Results relate only to the items tested and to all the items tested

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 18T402898

PROJECT: 18.175

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

ATTENTION TO: ian Adesen

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2018-10-29

DATE REPORTED: 2018-11-07

		SAMPLE DESCRIPTION:		MW305	MW308	MW105	MW309	MW309-1
		SAMPLE TYPE:		Water	Water	Water	Water	Water
		DATE SAMPLED:		2018-10-25	2018-10-25	2018-10-25	2018-10-25	2018-10-25
Parameter	**Unit**	**G / S**	**RDL**	**9660642**	**9660643**	**9660644**	**9660646**	**9660647**
Bromoform	µg/L	25	0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Styrene	µg/L	5.4	0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,1,2,2-Tetrachloroethane	µg/L	1	0.10	<0.10	<0.10	<0.10	<0.10	<0.10
o-Xylene	µg/L		0.10	0.63	<0.10	<0.10	120	150
1,3-Dichlorobenzene	µg/L	59	0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	1	0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,2-Dichlorobenzene	µg/L	3	0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,3-Dichloropropene	µg/L	0.5	0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Xylene Mixture	µg/L	300	0.20	2.0	0.27	<0.20	**490**	**610**
n-Hexane	µg/L	51	0.20	0.74	1.1	<0.20	7.1	5.5
Surrogate	**Unit**	**Acceptable Limits**						
Toluene-d8	% Recovery	50-140		113	116	115	111	112
4-Bromofluorobenzene	% Recovery	50-140		91	88	79	99	95

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition - Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



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Certificate of Analysis

AGAT WORK ORDER: 18T402898

PROJECT: 18.175

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

ATTENTION TO: ian Adesen

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - Metals (Including Hydrides) (Water)

DATE RECEIVED: 2018-10-29

DATE REPORTED: 2018-11-07

		SAMPLE DESCRIPTION:		MW308	MW309	MW309-1	MW202	MW203
		SAMPLE TYPE:		Water	Water	Water	Water	Water
		DATE SAMPLED:		2018-10-25	2018-10-25	2018-10-25	2018-10-25	2018-10-25
Parameter	Unit	G / S	RDL	9660643	9660646	9660647	9660648	9660651
Antimony	µg/L	6	1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Arsenic	µg/L	25	1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Barium	µg/L	1000	2.0	465	262	247	208	324
Beryllium	µg/L	4.0	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Boron	µg/L	5000	10.0	56.9	49.6	45.9	68.4	99.3
Cadmium	µg/L	2.7	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	µg/L	50	2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Cobalt	µg/L	3.8	0.5	0.6	<0.5	<0.5	<0.5	<0.5
Copper	µg/L	87	1.0	3.9	3.1	1.0	4.2	3.1
Lead	µg/L	10	0.5	1.6	0.5	<0.5	1.0	<0.5
Molybdenum	µg/L	70	0.5	1.8	5.4	5.6	<0.5	1.0
Nickel	µg/L	100	1.0	1.8	1.6	1.6	1.4	<1.0
Selenium	µg/L	10	1.0	<1.0	1.5	1.6	3.6	2.1
Silver	µg/L	1.5	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/L	2	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Uranium	µg/L	20	0.5	2.0	2.5	2.5	0.8	1.9
Vanadium	µg/L	6.2	0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Zinc	µg/L	1100	5.0	12.2	6.0	<5.0	<5.0	6.2

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition - Potable Ground Water - All Types of Property Uses - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: Iris Verástegui

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AGAT Laboratories

Guideline Violation

AGAT WORK ORDER: 18T402898

PROJECT: 18.175

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CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

ATTENTION TO: ian Adesen

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
9660646	MW309	ON T2 PGW CT	O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Water)	F1 (C6 - C10)	µg/L	750	900
9660646	MW309	ON T2 PGW CT	O. Reg. 153(511) - VOCs (Water)	Ethylbenzene	µg/L	2.4	47
9660646	MW309	ON T2 PGW CT	O. Reg. 153(511) - VOCs (Water)	Xylene Mixture	µg/L	300	490
9660647	MW309-1	ON T2 PGW CT	O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Water)	F1 (C6 - C10)	µg/L	750	1000
9660647	MW309-1	ON T2 PGW CT	O. Reg. 153(511) - VOCs (Water)	Ethylbenzene	µg/L	2.4	48
9660647	MW309-1	ON T2 PGW CT	O. Reg. 153(511) - VOCs (Water)	Xylene Mixture	µg/L	300	610

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Quality Assurance

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

AGAT WORK ORDER: 18T402898

PROJECT: 18.175

ATTENTION TO: ian Adesen

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis

RPT Date: Nov 07, 2018

PARAMETER	Batch	Sample Id	DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
			Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - VOCs (Water)															
Dichlorodifluoromethane	9661118		< 0.20	< 0.20	NA	< 0.20	91%	50%	140%	116%	50%	140%	112%	50%	140%
Vinyl Chloride	9661118		< 0.17	< 0.17	NA	< 0.17	80%	50%	140%	118%	50%	140%	117%	50%	140%
Bromomethane	9661118		< 0.20	< 0.20	NA	< 0.20	77%	50%	140%	114%	50%	140%	114%	50%	140%
Trichlorofluoromethane	9661118		< 0.40	< 0.40	NA	< 0.40	91%	50%	140%	108%	50%	140%	111%	50%	140%
Acetone	9661118		< 1.0	< 1.0	NA	< 1.0	110%	50%	140%	110%	50%	140%	106%	50%	140%
1,1-Dichloroethylene	9661118		< 0.30	< 0.30	NA	< 0.30	72%	50%	140%	113%	60%	130%	116%	50%	140%
Methylene Chloride	9661118		< 0.30	< 0.30	NA	< 0.30	110%	50%	140%	112%	60%	130%	112%	50%	140%
trans- 1,2-Dichloroethylene	9661118		< 0.20	< 0.20	NA	< 0.20	89%	50%	140%	116%	60%	130%	119%	50%	140%
Methyl tert-butyl ether	9661118		< 0.20	< 0.20	NA	< 0.20	90%	50%	140%	75%	60%	130%	72%	50%	140%
1,1-Dichloroethane	9661118		< 0.30	< 0.30	NA	< 0.30	81%	50%	140%	114%	60%	130%	107%	50%	140%
Methyl Ethyl Ketone	9661118		< 1.0	< 1.0	NA	< 1.0	77%	50%	140%	85%	50%	140%	92%	50%	140%
cis- 1,2-Dichloroethylene	9661118		< 0.20	< 0.20	NA	< 0.20	73%	50%	140%	108%	60%	130%	109%	50%	140%
Chloroform	9661118		< 0.20	< 0.20	NA	< 0.20	90%	50%	140%	118%	60%	130%	103%	50%	140%
1,2-Dichloroethane	9661118		< 0.20	< 0.20	NA	< 0.20	80%	50%	140%	105%	60%	130%	105%	50%	140%
1,1,1-Trichloroethane	9661118		< 0.30	< 0.30	NA	< 0.30	82%	50%	140%	107%	60%	130%	110%	50%	140%
Carbon Tetrachloride	9661118		< 0.20	< 0.20	NA	< 0.20	96%	50%	140%	107%	60%	130%	107%	50%	140%
Benzene	9661118		< 0.20	< 0.20	NA	< 0.20	85%	50%	140%	104%	60%	130%	107%	50%	140%
1,2-Dichloropropane	9661118		< 0.20	< 0.20	NA	< 0.20	82%	50%	140%	91%	60%	130%	91%	50%	140%
Trichloroethylene	9661118		< 0.20	< 0.20	NA	< 0.20	71%	50%	140%	92%	60%	130%	88%	50%	140%
Bromodichloromethane	9661118		< 0.20	< 0.20	NA	< 0.20	74%	50%	140%	80%	60%	130%	82%	50%	140%
Methyl Isobutyl Ketone	9661118		< 1.0	< 1.0	NA	< 1.0	109%	50%	140%	108%	50%	140%	110%	50%	140%
1,1,2-Trichloroethane	9661118		< 0.20	< 0.20	NA	< 0.20	103%	50%	140%	109%	60%	130%	115%	50%	140%
Toluene	9661118		< 0.20	< 0.20	NA	< 0.20	99%	50%	140%	112%	60%	130%	112%	50%	140%
Dibromochloromethane	9661118		< 0.10	< 0.10	NA	< 0.10	77%	50%	140%	116%	60%	130%	114%	50%	140%
Ethylene Dibromide	9661118		< 0.10	< 0.10	NA	< 0.10	82%	50%	140%	103%	60%	130%	103%	50%	140%
Tetrachloroethylene	9661118		< 0.20	< 0.20	NA	< 0.20	85%	50%	140%	111%	60%	130%	116%	50%	140%
1,1,1,2-Tetrachloroethane	9661118		< 0.10	< 0.10	NA	< 0.10	75%	50%	140%	100%	60%	130%	97%	50%	140%
Chlorobenzene	9661118		< 0.10	< 0.10	NA	< 0.10	72%	50%	140%	114%	60%	130%	113%	50%	140%
Ethylbenzene	9661118		< 0.10	< 0.10	NA	< 0.10	72%	50%	140%	105%	60%	130%	103%	50%	140%
m & p-Xylene	9661118		< 0.20	< 0.20	NA	< 0.20	82%	50%	140%	112%	60%	130%	118%	50%	140%
Bromoform	9661118		< 0.10	< 0.10	NA	< 0.10	84%	50%	140%	85%	60%	130%	76%	50%	140%
Styrene	9661118		< 0.10	< 0.10	NA	< 0.10	97%	50%	140%	109%	60%	130%	105%	50%	140%
1,1,2,2-Tetrachloroethane	9661118		< 0.10	< 0.10	NA	< 0.10	102%	50%	140%	107%	60%	130%	119%	50%	140%
o-Xylene	9661118		< 0.10	< 0.10	NA	< 0.10	80%	50%	140%	112%	60%	130%	109%	50%	140%
1,3-Dichlorobenzene	9661118		< 0.10	< 0.10	NA	< 0.10	84%	50%	140%	110%	60%	130%	104%	50%	140%
1,4-Dichlorobenzene	9661118		< 0.10	< 0.10	NA	< 0.10	71%	50%	140%	114%	60%	130%	110%	50%	140%
1,2-Dichlorobenzene	9661118		< 0.10	< 0.10	NA	< 0.10	70%	50%	140%	107%	60%	130%	103%	50%	140%
1,3-Dichloropropene	9661118		< 0.30	< 0.30	NA	< 0.30	80%	50%	140%	88%	60%	130%	85%	50%	140%
n-Hexane	9661118		< 0.20	< 0.20	NA	< 0.20	92%	50%	140%	105%	60%	130%	116%	50%	140%

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Quality Assurance

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

AGAT WORK ORDER: 18T402898

PROJECT: 18.175

ATTENTION TO: ian Adesen

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis (Continued)

RPT Date: Nov 07, 2018

PARAMETER	Batch	Sample Id	DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
			Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Water)															
F1 (C6 - C10)	9660647	9660647	880	940	6.6%	< 25	89%	60%	140%	86%	60%	140%	87%	60%	140%
F2 (C10 to C16)		TW	< 100	< 100	NA	< 100	96%	60%	140%	65%	60%	140%	70%	60%	140%
F3 (C16 to C34)		TW	< 100	< 100	NA	< 100	92%	60%	140%	85%	60%	140%	85%	60%	140%
F4 (C34 to C50)		TW	< 100	< 100	NA	< 100	89%	60%	140%	101%	60%	140%	90%	60%	140%
O. Reg. 153(511) - PAHs (Water)															
Naphthalene		TW	< 0.20	< 0.20	NA	< 0.20	105%	50%	140%	102%	50%	140%	105%	50%	140%
Acenaphthylene		TW	< 0.20	< 0.20	NA	< 0.20	110%	50%	140%	101%	50%	140%	103%	50%	140%
Acenaphthene		TW	< 0.20	< 0.20	NA	< 0.20	105%	50%	140%	100%	50%	140%	101%	50%	140%
Fluorene		TW	< 0.20	< 0.20	NA	< 0.20	107%	50%	140%	100%	50%	140%	102%	50%	140%
Phenanthrene		TW	< 0.10	< 0.10	NA	< 0.10	109%	50%	140%	100%	50%	140%	98%	50%	140%
Anthracene		TW	< 0.10	< 0.10	NA	< 0.10	105%	50%	140%	97%	50%	140%	94%	50%	140%
Fluoranthene		TW	< 0.20	< 0.20	NA	< 0.20	114%	50%	140%	108%	50%	140%	99%	50%	140%
Pyrene		TW	< 0.20	< 0.20	NA	< 0.20	114%	50%	140%	109%	50%	140%	99%	50%	140%
Benz(a)anthracene		TW	< 0.20	< 0.20	NA	< 0.20	113%	50%	140%	108%	50%	140%	101%	50%	140%
Chrysene		TW	< 0.10	< 0.10	NA	< 0.10	114%	50%	140%	110%	50%	140%	105%	50%	140%
Benzo(b)fluoranthene		TW	< 0.10	< 0.10	NA	< 0.10	95%	50%	140%	118%	50%	140%	91%	50%	140%
Benzo(k)fluoranthene		TW	< 0.10	< 0.10	NA	< 0.10	103%	50%	140%	108%	50%	140%	89%	50%	140%
Benzo(a)pyrene		TW	< 0.01	< 0.01	NA	< 0.01	106%	50%	140%	107%	50%	140%	109%	50%	140%
Indeno(1,2,3-cd)pyrene		TW	< 0.20	< 0.20	NA	< 0.20	108%	50%	140%	115%	50%	140%	114%	50%	140%
Dibenz(a,h)anthracene		TW	< 0.20	< 0.20	NA	< 0.20	103%	50%	140%	115%	50%	140%	115%	50%	140%
Benzo(g,h,i)perylene		TW	< 0.20	< 0.20	NA	< 0.20	108%	50%	140%	113%	50%	140%	106%	50%	140%
2-and 1-methyl Naphthalene		TW	< 0.20	< 0.20	NA	< 0.20	109%	50%	140%	99%	50%	140%	101%	50%	140%
O. Reg. 153(511) - BNA (full) + PAHs (Water)															
Naphthalene		TW	< 0.20	< 0.20	NA	< 0.20	102%	50%	140%	102%	50%	140%	94%	50%	140%
Acenaphthylene		TW	< 0.20	< 0.20	NA	< 0.20	89%	50%	140%	88%	50%	140%	99%	50%	140%
Acenaphthene		TW	< 0.20	< 0.20	NA	< 0.20	102%	50%	140%	99%	50%	140%	93%	50%	140%
Fluorene		TW	< 0.20	< 0.20	NA	< 0.20	97%	50%	140%	87%	50%	140%	101%	50%	140%
Phenanthrene		TW	< 0.10	< 0.10	NA	< 0.10	101%	50%	140%	94%	50%	140%	82%	50%	140%
Anthracene		TW	< 0.10	< 0.10	NA	< 0.10	94%	50%	140%	92%	50%	140%	84%	50%	140%
Fluoranthene		TW	< 0.20	< 0.20	NA	< 0.20	81%	50%	140%	79%	50%	140%	75%	50%	140%
Pyrene		TW	< 0.20	< 0.20	NA	< 0.20	79%	50%	140%	77%	50%	140%	77%	50%	140%
Benz(a)anthracene		TW	< 0.20	< 0.20	NA	< 0.20	75%	50%	140%	70%	50%	140%	70%	50%	140%
Chrysene		TW	< 0.10	< 0.10	NA	< 0.10	72%	50%	140%	69%	50%	140%	74%	50%	140%
Benzo(b)fluoranthene		TW	< 0.10	< 0.10	NA	< 0.10	83%	50%	140%	88%	50%	140%	100%	50%	140%
Benzo(k)fluoranthene		TW	< 0.10	< 0.10	NA	< 0.10	101%	50%	140%	102%	50%	140%	93%	50%	140%
Benzo(a)pyrene		TW	< 0.01	< 0.01	NA	< 0.01	110%	50%	140%	106%	50%	140%	99%	50%	140%
Indeno(1,2,3-cd)pyrene		TW	< 0.20	< 0.20	NA	< 0.20	100%	50%	140%	95%	50%	140%	98%	50%	140%

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Quality Assurance

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

AGAT WORK ORDER: 18T402898

PROJECT: 18.175

ATTENTION TO: ian Adesen

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis (Continued)

RPT Date: Nov 07, 2018			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Dibenz(a,h)anthracene		TW	< 0.20	< 0.20	NA	< 0.20	92%	50%	140%	97%	50%	140%	103%	50%	140%
Benzo(g,h,i)perylene		TW	< 0.20	< 0.20	NA	< 0.20	93%	50%	140%	89%	50%	140%	81%	50%	140%
Phenol		TW	< 1.0	< 1.0	NA	< 1.0	81%	30%	130%	99%	30%	130%	98%	30%	130%
Bis(2-chloroethyl)ether		TW	< 0.5	< 0.5	NA	< 0.5	91%	50%	140%	87%	50%	140%	81%	50%	140%
2-Chlorophenol		TW	< 0.5	< 0.5	NA	< 0.5	94%	50%	140%	93%	50%	140%	84%	50%	140%
o-Cresol		TW	< 0.5	< 0.5	NA	< 0.5	92%	50%	140%	74%	50%	140%	87%	50%	140%
Bis(2-chloroisopropyl)ether		TW	< 0.5	< 0.5	NA	< 0.5	104%	50%	140%	87%	50%	140%	81%	50%	140%
m&p-Cresol		TW	< 0.6	< 0.6	NA	< 0.6	102%	50%	140%	97%	50%	140%	97%	50%	140%
2,4-Dimethylphenol		TW	< 0.5	< 0.5	NA	< 0.5	105%	30%	130%	98%	30%	130%	102%	30%	130%
2,4-Dichlorophenol		TW	< 0.3	< 0.3	NA	< 0.3	106%	50%	140%	101%	50%	140%	94%	50%	140%
1,2,4-Trichlorobenzene		TW	< 0.5	< 0.5	NA	< 0.5	97%	50%	140%	97%	50%	140%	90%	50%	140%
p-Chloroaniline		TW	< 1.0	< 1.0	NA	< 1.0	83%	30%	130%	88%	30%	130%	75%	30%	130%
2-and 1-methyl Naphthalene		TW	< 0.5	< 0.5	NA	< 0.5	99%	50%	140%	116%	50%	140%	89%	50%	140%
2,4,6-Trichlorophenol		TW	< 0.2	< 0.2	NA	< 0.2	101%	50%	140%	92%	50%	140%	95%	50%	140%
2,4,5-Trichlorophenol		TW	< 0.2	< 0.2	NA	< 0.2	92%	50%	140%	100%	50%	140%	91%	50%	140%
1,1'-Biphenyl		TW	< 0.5	< 0.5	NA	< 0.5	91%	50%	140%	94%	50%	140%	97%	50%	140%
Dimethyl phthalate		TW	< 0.5	< 0.5	NA	< 0.5	94%	50%	140%	102%	50%	140%	96%	50%	140%
Diethyl phthalate		TW	< 0.5	< 0.5	NA	< 0.5	105%	50%	140%	98%	50%	140%	95%	50%	140%
Pentachlorophenol		TW	< 0.5	< 0.5	NA	< 0.5	71%	50%	140%	89%	50%	140%	99%	50%	140%
3,3'-dichlorobenzidine		TW	< 0.5	< 0.5	NA	< 0.5	64%	30%	130%	94%	30%	130%	68%	30%	130%
Bis(2-Ethylhexyl)phthalate		TW	< 0.5	< 0.5	NA	< 0.5	94%	50%	140%	102%	50%	140%	97%	50%	140%
2,4-Dinitrophenol		TW	< 10	< 10	NA	< 10	65%	30%	130%	77%	30%	130%	74%	30%	130%

Comments: Tap water analysis has been performed as QC sample testing for duplicate and matrix spike due to insufficient sample volume.
When the average of the sample and duplicate results is less than 5x the RDL, the Relative Percent Difference (RPD) will be indicated as Not Applicable (NA).

Certified By:



AGAT Laboratories is accredited to ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA) and/or Standards Council of Canada (SCC) for specific tests listed on the scope of accreditation. AGAT Laboratories (Mississauga) is also accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) for specific drinking water tests. Accreditations are location and parameter specific. A complete listing of parameters for each location is available from www.cala.ca and/or www.scc.ca. The tests in this report may not necessarily be included in the scope of accreditation.

Results relate only to the items tested and to all the items tested

AGAT Laboratories

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Quality Assurance

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

AGAT WORK ORDER: 18T402898

PROJECT: 18.175

ATTENTION TO: ian Adesen

SAMPLING SITE:

SAMPLED BY:

Water Analysis

RPT Date: Nov 07, 2018			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals (Including Hydrides) (Water)															
Antimony	9658915		<1.0	<1.0	NA	< 1.0	102%	70%	130%	99%	80%	120%	96%	70%	130%
Arsenic	9658915		<1.0	<1.0	NA	< 1.0	96%	70%	130%	98%	80%	120%	94%	70%	130%
Barium	9658915		6.7	6.2	NA	< 2.0	105%	70%	130%	99%	80%	120%	103%	70%	130%
Beryllium	9658915		<0.5	<0.5	NA	< 0.5	107%	70%	130%	109%	80%	120%	109%	70%	130%
Boron	9658915		15.7	14.6	NA	< 10.0	110%	70%	130%	108%	80%	120%	94%	70%	130%
Cadmium	9658915		<0.2	<0.2	NA	< 0.2	100%	70%	130%	98%	80%	120%	106%	70%	130%
Chromium	9658915		<2.0	<2.0	NA	< 2.0	95%	70%	130%	98%	80%	120%	92%	70%	130%
Cobalt	9658915		<0.5	<0.5	NA	< 0.5	99%	70%	130%	107%	80%	120%	96%	70%	130%
Copper	9658915		<1.0	<1.0	NA	< 1.0	99%	70%	130%	101%	80%	120%	100%	70%	130%
Lead	9658915		<0.5	<0.5	NA	< 0.5	101%	70%	130%	98%	80%	120%	96%	70%	130%
Molybdenum	9658915		<0.5	<0.5	NA	< 0.5	99%	70%	130%	97%	80%	120%	97%	70%	130%
Nickel	9658915		<1.0	<1.0	NA	< 1.0	95%	70%	130%	102%	80%	120%	92%	70%	130%
Selenium	9658915		<1.0	<1.0	NA	< 1.0	104%	70%	130%	104%	80%	120%	103%	70%	130%
Silver	9658915		<0.2	<0.2	NA	< 0.2	98%	70%	130%	107%	80%	120%	105%	70%	130%
Thallium	9658915		<0.3	<0.3	NA	< 0.3	105%	70%	130%	105%	80%	120%	103%	70%	130%
Uranium	9658915		<0.5	<0.5	NA	< 0.5	99%	70%	130%	96%	80%	120%	94%	70%	130%
Vanadium	9658915		<0.4	<0.4	NA	< 0.4	97%	70%	130%	101%	80%	120%	96%	70%	130%
Zinc	9658915		<5.0	<5.0	NA	< 5.0	106%	70%	130%	102%	80%	120%	123%	70%	130%

Comments: NA signifies Not Applicable.
Duplicate Qualifier: As the measured result approaches the RL, the uncertainty associated with the value increases dramatically, thus duplicate acceptance limits apply only where the average of the two duplicates is greater than five times the RL.

Certified By: Iris Verástegui

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http://www.agatlabs.com

Method Summary

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

AGAT WORK ORDER: 18T402898

PROJECT: 18.175

ATTENTION TO: ian Adesen

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Naphthalene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Acenaphthylene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Acenaphthene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Fluorene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Phenanthrene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Anthracene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Fluoranthene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Pyrene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Benz(a)anthracene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Chrysene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Benzo(b)fluoranthene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Benzo(k)fluoranthene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Benzo(a)pyrene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Dibenz(a,h)anthracene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Benzo(g,h,i)perylene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Phenol	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Bis(2-chloroethyl)ether	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
2-Chlorophenol	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
o-Cresol	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Bis(2-chloroisopropyl)ether	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
m&p-Cresol	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
2,4-Dimethylphenol	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
2,4-Dichlorophenol	ORG-91-5114	EPA SW-846 3510C & 8270D	GC/MS
1,2,4-Trichlorobenzene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
p-Chloroaniline	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
2-and 1-methyl Naphthalene	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
2,4,6-Trichlorophenol	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
2,4,5-Trichlorophenol	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
1,1'-Biphenyl	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Dimethyl phthalate	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
2,4 and 2,6-Dinitrotoluene	ORG-91-5114	EPA SW-846 3510 & 8270	GC/MS
Diethyl phthalate	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Pentachlorophenol	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
3,3'-dichlorobenzidine	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Bis(2-Ethylhexyl)phthalate	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
2,4-Dinitrophenol	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
2,4,6-Tribromophenol	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Chrysene-d12	ORG-91-5114	EPA SW-846 3510C & 8270	GC/MS
Naphthalene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Acenaphthylene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Acenaphthene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Fluorene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Phenanthrene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Anthracene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Fluoranthene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Pyrene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Benz(a)anthracene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Chrysene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS

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Method Summary

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

AGAT WORK ORDER: 18T402898

PROJECT: 18.175

ATTENTION TO: ian Adesen

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Benzo(b)fluoranthene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Benzo(k)fluoranthene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Benzo(a)pyrene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Dibenz(a,h)anthracene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Benzo(g,h,i)perylene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
2-and 1-methyl Naphthalene	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
Chrysene-d12	ORG-91-5105	EPA SW-846 3510 & 8270	GC/MS
F1 (C6 - C10)	VOL-91- 5010	MOE PHC E3421	(P&T)GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5010	MOE PHC E3421	(P&T)GC/FID
F2 (C10 to C16)	VOL-91-5010	MOE PHC E3421	GC / FID
F3 (C16 to C34)	VOL-91-5010	MOE PHC E3421	GC / FID
F4 (C34 to C50)	VOL-91-5010	MOE PHC E3421	GC / FID
Gravimetric Heavy Hydrocarbons	VOL-91-5010	MOE PHC E3421	BALANCE
Terphenyl	VOL-91-5010		GC/FID
F1 (C6-C10)	VOL-91- 5010	MOE PHC-E3421	(P&T)GC/FID
F2 (C10 to C16)	VOL-91-5010	MOE PHC E3421	GC/FID
F2 (C10 to C16) minus Naphthalene	VOL-91-5010	MOE PHC E3421	GC/FID
F3 (C16 to C34)	VOL-91-5010	MOE PHC E3421	GC/FID
F3 (C16 to C34) minus PAHs	VOL-91-5010	MOE PHC E3421	GC/FID
F4 (C34 to C50)	VOL -91- 5010	MOE PHC- E3421	GC/FID
Dichlorodifluoromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Vinyl Chloride	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Bromomethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Acetone	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methylene Chloride	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
trans- 1,2-Dichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methyl tert-butyl ether	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
cis- 1,2-Dichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Chloroform	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Benzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Trichloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Bromodichloromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Toluene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Dibromochloromethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Chlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Ethylbenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS

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Method Summary

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

AGAT WORK ORDER: 18T402898

PROJECT: 18.175

ATTENTION TO: ian Adesen

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
m & p-Xylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Bromoform	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Styrene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
o-Xylene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
1,3-Dichloropropene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Xylene Mixture	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
n-Hexane	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Toluene-d8	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5001	EPA SW-846 5030 & 8260	(P&T)GC/MS
Water Analysis			
Antimony	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Arsenic	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Barium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Beryllium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Boron	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Cadmium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Chromium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Cobalt	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Copper	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Lead	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Molybdenum	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Nickel	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Selenium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Silver	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Thallium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Uranium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Vanadium	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS
Zinc	MET-93-6103	EPA SW-846 6020A & 200.8	ICP-MS

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5835 Coopers Avenue
Mississauga, Ontario L4Z 1Y2
Ph: 905.712.5100 Fax: 905.712.5122
webearth.agatlabs.com

Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans)

Laboratory Use Only

Work Order #: 18T402898

Cooler Quantity: 5 kept

Arrival Temperatures:

Custody Seal Intact: ☐Yes ☐No ☐N/A

Notes:

Report Information:

Company: Azimuth Environmental Consulting Ltd.
Contact: Ian Adhesan
Address: 642 Welham Rd.
Barrie, ON
Phone: (705) 721-8451 Fax: (705) 721-8926
Reports to be sent to:
1. Email: iadhesan@azimuthenvironmental.com
2. Email: david@azimuthenvironmental.com

Regulatory Requirements:

☐ No Regulatory Requirement
(Please check all applicable boxes)

☒ Regulation 153/04
Table 2 *Indicate One*
☐ Ind/Com
☒ Res/Park
☐ Agriculture
Soil Texture *(Check One)*
☒ Coarse
☐ Fine

☐ Sewer Use
☐ Sanitary
☐ Storm
Region _____ *Indicate One*
☐ MISA

☐ Regulation 558
☐ CCME
☐ Prov. Water Quality Objectives (PWQO)
☐ Other
_____ *Indicate One*

Is this submission for a **Record of Site Condition?** ☒ Yes ☐ No

Report Guideline on *Certificate of Analysis* ☒ Yes ☐ No

Turnaround Time (TAT) Required:

Regular TAT ☒ 5 to 7 Business Days

Rush TAT (Rush Surcharges Apply)

☐ 3 Business Days ☐ 2 Business Days ☐ Next Business Day

OR Date Required (Rush Surcharges May Apply):

Please provide prior notification for rush TAT
**TAT is exclusive of weekends and statutory holidays*

For 'Same Day' analysis, please contact your AGAT CPM

Project Information:

Project: 18-175
Site Location: 41 & 43 Essa Rd. Barrie, ON
Sampled By: I. Adhesan
AGAT Quote #: _____ PO: _____
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

Bill To Same: Yes ☒ No ☐

Company:
Contact:
Address:
Email:

Sample Matrix Legend

B	Biota
GW	Ground Water
O	Oil
P	Paint
S	Soil
SD	Sediment
SW	Surface Water

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI (Y/N)	O. Reg 153: Metals and Inorganics (☒All Metals ☐153 Metals (excl. Hydrides) ☐Hydride Metals ☐153 Metals (Incl. Hydrides))	O. Reg 153: ORPs: ☐B-HWS ☐Cl ☐CN ☐Cr⁶⁺ ☐EC ☐FOC ☐Hg ☐pH ☐SAR	O. Reg 153: Full Metals Scan	O. Reg 153: Regulation/Custom Metals	O. Reg 153: Nutrients: ☐TP ☐NH_3 ☐TKN ☐NO_3 ☐NO_2 ☐NO_3+NO_2	O. Reg 153: Volatiles: ☒VOC ☐BTEX ☐THM	O. Reg 153: PHCs F1 - F4	O. Reg 153: ABNs	O. Reg 153: PAHs	O. Reg 153: PCBs: ☐Total ☐Aroclors	O. Reg 153: Organochlorine Pesticides	O. Reg 153: TCLP: ☐M&I ☐VOCs ☐ABNs ☐B(a)P ☐PCBs	O. Reg 153: Sewer Use
MW305	25Oct18	09:00	3	GW		Y						X							
MW308	1	08:30	5	GW		Y	X					X	X						
MW105		10:00	5	GW		N						X	X		X				
MW105-1		10:00	1	GW		N									X				
MW309		10:50	5	GW		Y	X					X	X						
MW309-1		10:50	5	GW		Y	X					X	X						
MW202	↓	11:20	3	GW		Y	X							X					
MW203	25Oct18	11:40	3	GW		Y	X							X					

Samples Relinquished By (Print Name and Sign): Ian Adhesan	Date: 25Oct18	Time: 13:00	Samples Received By (Print Name and Sign):	Date: 2018/10/29	Time: 10:30
Samples Relinquished By (Print Name and Sign):	Date: 2018/10/29	Time: 14:55	Samples Received By (Print Name and Sign):	Date:	Time:
Samples Relinquished By (Print Name and Sign):	Date:	Time:	Samples Received By (Print Name and Sign):	Date:	Time:

Page 1 of 1

N°: T 080039

Document ID: DW 78 1511 015

Pink Copy - Client | Yellow Copy - AGAT | White Copy- AGAT

May 26 2018

AGAT Laboratories

Sample Temperature Log

Client: Azimuth

COC# or Work Order #: 080039-080040-075496-075495-075493

# of Coolers: 5

# of Submissions: 5

Arrival Temperatures - Branch/Driver

Cooler #1:	3.9	3.7	4.1
Cooler #2:	4	3.7	3.5
Cooler #3:	3.9	3.6	3.4
Cooler #4:	3.7	3.5	3.3
Cooler #5:	3.9	3.6	3.4
Cooler #6:			
Cooler #7:			
Cooler #8			
Cooler #9:			
Cooler #10:			

IR Gun ID:

Taken By: Ray

Date (yyyy/mm/dd): 2018/10/29 Time: 10 : 30 AM / PM

Arrival Temperatures - Laboratory

Cooler #1:	3.2	2.8	2.7
Cooler #2:	3.2	2.8	2.5
Cooler #3:	3.1	2.9	2.7
Cooler #4:	2.9	2.5	2.4
Cooler #5:	3	2.8	2.5
Cooler #6:			
Cooler #7:			
Cooler #8			
Cooler #9:			
Cooler #10:			

IR Gun ID:

Taken By: Ray

Date (yyyy/mm/dd): 2018/10/29 Time: 1 : 45 AM / PM

Instructions for use of this form: 1) complete all fields of info including total # of coolers and # of submissions rec'd, 2) photocopy and place in each submission prior to giving a WO#, 3) Proceed as normal, write the WO# and scan (please make sure to scan along with the COC)

AGAT Laboratories

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,
642 WELHAM ROAD
BARRIE, ON L4N9A1
(705) 721-8451

ATTENTION TO: Ian Achesan

PROJECT: 18-175

AGAT WORK ORDER: 18T407475

TRACE ORGANICS REVIEWED BY: Oksana Gushyla, Trace Organics Lab Supervisor

DATE REPORTED: Nov 19, 2018

PAGES (INCLUDING COVER): 6

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

Member of: Association of Professional Engineers and Geoscientists of Alberta (APEGA)
Western Enviro-Agricultural Laboratory Association (WEALA)
Environmental Services Association of Alberta (ESAA)

AGAT Laboratories is accredited to ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA) and/or Standards Council of Canada (SCC) for specific tests listed on the scope of accreditation. AGAT Laboratories (Mississauga) is also accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) for specific drinking water tests. Accreditations are location and parameter specific. A complete listing of parameters for each location is available from www.cala.ca and/or www.scc.ca. The tests in this report may not necessarily be included in the scope of accreditation.

Results relate only to the items tested and to all the items tested
All reportable information as specified by ISO 17025:2005 is available from AGAT Laboratories upon request

AGAT Laboratories

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http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 18T407475

PROJECT: 18-175

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

SAMPLING SITE:41 Essex Bonnie, ON

ATTENTION TO: Ian Achesan

SAMPLED BY:I. A.

O. Reg. 153(511) - PHCs F1 - F4 (Soil)

DATE RECEIVED: 2018-11-08 **DATE REPORTED: 2018-11-19**

		SAMPLE DESCRIPTION:		BH309R
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2018-10-23
Parameter	**Unit**	**G / S**	**RDL**	**9687724**
Benzene	µg/g	0.21	0.02	<0.02
Toluene	µg/g	2.3	0.05	0.07
Ethylbenzene	µg/g	1.1	0.05	**5.6**
Xylene Mixture	µg/g	3.1	0.05	**41**
F1 (C6 to C10)	µg/g	55	5	**310**
F1 (C6 to C10) minus BTEX	µg/g	55	5	**260**
F2 (C10 to C16)	µg/g	98	10	60
F3 (C16 to C34)	µg/g	300	50	<50
F4 (C34 to C50)	µg/g	2800	50	<50
Gravimetric Heavy Hydrocarbons	µg/g	2800	50	NA
Moisture Content	%		0.1	16.9
Surrogate	**Unit**	**Acceptable Limits**		
Terphenyl	%	60-140		82

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition - Soil - Residential/Parkland/Institutional Property Use - Coarse Textured Soils
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

9687724 Results are based on sample dry weight.
The C6-C10 fraction is calculated using Toluene response factor.
The C10 - C16, C16 - C34, and C34 - C50 fractions are calculated using the average response factor for n-C10, n-C16, and n-C34.
Gravimetric Heavy Hydrocarbons are not included in the Total C16-C50 and are only determined if the chromatogram of the C34 - C50 hydrocarbons indicates that hydrocarbons >C50 are present.
The chromatogram has returned to baseline by the retention time of nC50.
Total C6 - C50 results are corrected for BTEX contributions.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.
Fractions 1-4 are quantified with the contribution of PAHs. Under Ontario Regulation 153, results are considered valid without determining the PAH contribution if not requested by the client.
Quality Control Data is available upon request.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

Results relate only to the items tested and to all the items tested

AGAT Laboratories

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Guideline Violation

AGAT WORK ORDER: 18T407475

PROJECT: 18-175

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

ATTENTION TO: Ian Achesan

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
9687724	BH309R	ON T2 S RPI CT	O. Reg. 153(511) - PHCs F1 - F4 (Soil)	Ethylbenzene	µg/g	1.1	5.6
9687724	BH309R	ON T2 S RPI CT	O. Reg. 153(511) - PHCs F1 - F4 (Soil)	F1 (C6 to C10)	µg/g	55	310
9687724	BH309R	ON T2 S RPI CT	O. Reg. 153(511) - PHCs F1 - F4 (Soil)	F1 (C6 to C10) minus BTEX	µg/g	55	260
9687724	BH309R	ON T2 S RPI CT	O. Reg. 153(511) - PHCs F1 - F4 (Soil)	Xylene Mixture	µg/g	3.1	41

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Quality Assurance

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

AGAT WORK ORDER: 18T407475

PROJECT: 18-175

ATTENTION TO: Ian Achesan

SAMPLING SITE:41 Essex Bonnie, ON

SAMPLED BY:I. A.

Trace Organics Analysis

RPT Date: Nov 19, 2018			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PHCs F1 - F4 (Soil)															
Benzene	9685790		< 0.02	< 0.02	NA	< 0.02	106%	60%	130%	105%	60%	130%	98%	60%	130%
Toluene	9685790		< 0.05	< 0.05	NA	< 0.05	104%	60%	130%	101%	60%	130%	97%	60%	130%
Ethylbenzene	9685790		< 0.05	< 0.05	NA	< 0.05	98%	60%	130%	106%	60%	130%	95%	60%	130%
Xylene Mixture	9685790		< 0.05	< 0.05	NA	< 0.05	97%	60%	130%	107%	60%	130%	98%	60%	130%
F1 (C6 to C10)	9685790		< 5	< 5	NA	< 5	85%	60%	130%	89%	85%	115%	88%	70%	130%
F2 (C10 to C16)	9680411		< 10	< 10	NA	< 10	104%	60%	130%	81%	80%	120%	103%	70%	130%
F3 (C16 to C34)	9680411		< 50	< 50	NA	< 50	103%	60%	130%	96%	80%	120%	106%	70%	130%
F4 (C34 to C50)	9680411		< 50	< 50	NA	< 50	98%	60%	130%	99%	80%	120%	94%	70%	130%

Comments: When the average of the sample and duplicate results is less than 5x the RDL, the Relative Percent Difference (RPD) will be indicated as Not Applicable (NA).

Certified By:

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Method Summary

CLIENT NAME: AZIMUTH ENVIRONMENTAL CONSULTING,

AGAT WORK ORDER: 18T407475

PROJECT: 18-175

ATTENTION TO: Ian Achesan

SAMPLING SITE:41 Essex Bonnie, ON

SAMPLED BY:I. A.

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Benzene	VOL-91-5009	EPA SW-846 5035 & 8260D	P & T GC/MS
Toluene	VOL-91-5009	EPA SW-846 5035 & 8260D	P & T GC/MS
Ethylbenzene	VOL-91-5009	EPA SW-846 5035 & 8260D	P & T GC/MS
Xylene Mixture	VOL-91-5009	EPA SW-846 5035 & 8260D	P & T GC/MS
F1 (C6 to C10)	VOL-91-5009	CCME Tier 1 Method	P & T GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	CCME Tier 1 Method	P & T GC/FID
F2 (C10 to C16)	VOL-91-5009	CCME Tier 1 Method, EPA SW846 8015	GC / FID
F3 (C16 to C34)	VOL-91-5009	CCME Tier 1 Method, EPA SW846 8015	GC / FID
F4 (C34 to C50)	VOL-91-5009	CCME Tier 1 Method, EPA SW846 8015	GC / FID
Gravimetric Heavy Hydrocarbons	VOL-91-5009	CCME Tier 1 Method	BALANCE
Moisture Content	VOL-91-5009	CCME Tier 1 Method	BALANCE
Terphenyl	VOL-91-5009		GC/FID

Results relate only to the items tested and to all the items tested

AGAT Laboratories

5835 Coopers Avenue
Mississauga, Ontario L4Z 1Y2
Ph: 905.712.5100 Fax: 905.712.5122
webearth.agatlabs.com

Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans)

Report Information:

Company: Azimuth Environmental
Contact: Ian Acheson
Address: 642 Welham Rd
Barrie, ON L4N 9A1
Phone: (705)721-8451 Fax: (705)721-8926
Reports to be sent to:
1. Email: iacheson@azimuthenvironmental.com
2. Email: david@azimuthenvironmental.com

Project Information:

Project: 18-175
Site Location: 41 Barrie, ON
Sampled By: I. Acheson
AGAT Quote #: _____ PO: _____
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

Bill To Same: Yes ☒ No ☐
Company:
Contact:
Address:
Email:

Regulatory Requirements:

☐ No Regulatory Requirement
(Please check all applicable boxes)

☒ Regulation 153/04
Table 2 *Indicate One*
☐ Ind/Com
☒ Res/Park
☐ Agriculture
Soil Texture *(Check One)*
☒ Coarse
☐ Fine

☐ Sewer Use
☐ Sanitary
☐ Storm
Region _____ *Indicate One*
☐ MISA

☐ Regulation 558
☐ CCME
☐ Prov. Water Quality Objectives (PWQO)
☐ Other
_____ *Indicate One*

Is this submission for a **Record of Site Condition?** ☒ Yes ☐ No

Report Guideline on *Certificate of Analysis* ☒ Yes ☐ No

Sample Matrix Legend

B	Biota
GW	Ground Water
O	Oil
P	Paint
S	Soil
SD	Sediment
SW	Surface Water

Laboratory Use Only

Work Order #: 18T407475
Cooler Quantity: Med
Arrival Temperatures: 4.4 | 4.1 | 3.9 | 3.5 | 3.2 | 3
Custody Seal Intact: ☐ Yes ☐ No ☐ N/A
Notes:

Turnaround Time (TAT) Required:

Regular TAT ☒ 5 to 7 Business Days
Rush TAT (Rush Surcharges Apply)
☐ 3 Business Days ☐ 2 Business Days ☐ Next Business Day
OR Date Required (Rush Surcharges May Apply):
_____
Please provide prior notification for rush TAT
**TAT is exclusive of weekends and statutory holidays*
For 'Same Day' analysis, please contact your AGAT CPM

Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI (Y/N)	O. Reg 153: Metals and Inorganics (☐ All Metals ☐ 153 Metals (excl. Hydrides) ☐ Hydride Metals ☐ 153 Metals (incl. Hydrides))	ORPs: ☐ B-HWS ☐ Cl ☐ CN ☐ EC ☐ FOC ☐ Hg ☐ pH ☐ SAR	Full Metals Scan	Regulation/Custom Metals	Nutrients: ☐ TP ☐ NH_3 ☐ TKN ☐ NO_3 ☐ NO_2 ☐ NO_3+NO_2	Volatiles: ☐ VOC ☒ BTEX ☐ THM	PHCs F1 - F4	ABNs	PAHs	PCBs: ☐ Total ☐ Aroclors	Organochlorine Pesticides	TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	Sewer Use
BH309R	23/10/18	11:25	2	S		—						X	X						

Samples Relinquished By (Print Name and Sign): Ian Acheson	Date: 8 Nov 18	Time: 11:30	Samples Received By (Print Name and Sign):	Date: NOV 8/18	Time: 11:35		
Samples Relinquished By (Print Name and Sign):	Date: NOV 8/18	Time: 4:46	Samples Received By (Print Name and Sign):	Date:	Time:	Page 1 of 1	
Samples Relinquished By (Print Name and Sign):	Date:	Time:	Samples Received By (Print Name and Sign):	Date:	Time:	N°: T 065312	

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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G76172 **REPORT No. B19-12916 (i)**

Report To:

Azimuth Environmental
647 Welham Rd,
Barrie ON L4N9A1 Canada
Attention: Ian Acheson

Caduceon Environmental Laboratories
112 Commerce Park Drive
Barrie ON L4N 8W8
Tel: 705-252-5743
Fax: 705-252-5746

DATE RECEIVED: 10-May-19
DATE REPORTED: 17-May-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Parameter	Qty	Site Analyzed	Analyst Initials	Date Analyzed	Lab Method	Reference Method
% Moisture	4	Richmond Hill	FAL	14-May-19	A-% moisture RH	
PHC(F2-F4)	4	Kingston	KPR	16-May-19	C-PHC-S-001 (k)	CWS Tier 1
VOC's	4	Richmond Hill	FAL	14-May-19	C-VOC-02 (rh)	EPA 8260
PHC(F1)	4	Richmond Hill	FAL	14-May-19	C-VPHS-01 (rh)	CWS Tier 1

µg/g = micrograms per gram (parts per million) and is equal to mg/Kg
F1 C6-C10 hydrocarbons in µg/g, (F1-btex if requested)
F2 C10-C16 hydrocarbons in µg/g, (F2-napth if requested)
F3 C16-C34 hydrocarbons in µg/g, (F3-pah if requested)
F4 C34-C50 hydrocarbons in µg/g
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
Any deviations from the method are noted and reported for any particular sample.
nC6 and nC10 response factor is 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:
Linearity is within 15%:
All results expressed on a dry weight basis.
Unless otherwise noted all chromatograms returned to baseline by the retention time of nC50.

Unless otherwise noted all extraction, analysis, QC requirements and limits for holding time were met.
If analyzed for F4 and F4G they are not to be summed but the greater of the two numbers are to be used in application to the CWS PHC
QC will be made available upon request.

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
Tbl. 2 - RPI Soil - Table 2 - Res./Parkland/Institutional Soil Std



Christine Burke
Lab Manager

R.L. = Reporting Limit
Test methods may be modified from specified reference method unless indicated by an *
Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

The analytical results reported herein refer to the samples as received. Reproduction of this analytical report in full or in part is prohibited without prior consent from Caduceon Environmental Laboratories.

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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G76172 **REPORT No. B19-12916 (i)**

Report To:

Azimuth Environmental
647 Welham Rd,
Barrie ON L4N9A1 Canada
Attention: Ian Acheson

Caduceon Environmental Laboratories
112 Commerce Park Drive
Barrie ON L4N 8W8
Tel: 705-252-5743
Fax: 705-252-5746

DATE RECEIVED: 10-May-19
DATE REPORTED: 17-May-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		BH 403a-5	BH 403b-3	BH 403c-2	BH 405a-10	O. Reg. 153	
	Sample I.D.		B19-12916-1	B19-12916-2	B19-12916-3	B19-12916-4	Tbl. 2 - ICC	Tbl. 2 - RPI
	Date Collected		09-May-19	09-May-19	10-May-19	10-May-19	Soil	Soil
Parameter	**Units**	**R.L.**						
Acetone	µg/g	0.5	< 0.5	< 0.5	< 0.5	< 0.5	16	16
Benzene	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.32	0.21
Bromodichloromethane	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	1.5	1.5
Bromoform	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.61	0.27
Bromomethane	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	0.05
Carbon Tetrachloride	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.21	0.05
Monochlorobenzene (Chlorobenzene)	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	2.4	2.4
Chloroform	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.47	0.05
Dibromochloromethane	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	2.3	2.3
Dichlorobenzene,1,2-	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	1.2	1.2
Dichlorobenzene,1,3-	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	9.6	4.8
Dichlorobenzene,1,4-	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.2	0.083
Dichlorodifluoromethane	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	16	16
Dichloroethane,1,1-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.47	0.47
Dichloroethane,1,2-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.05	0.05
Dichloroethylene,1,1-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.064	0.05
Dichloroethene, cis-1,2-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	1.9	1.9
Dichloroethene, trans-1,2-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	1.3	0.084
Dichloropropane,1,2-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.16	0.050
Dichloropropene, cis-1,3-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02		
Dichloropropene, trans-1,3-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02		

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
Tbl. 2 - RPI Soil - Table 2 - Res./Parkland/Institutional Soil Std

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Lab Manager

R.L. = Reporting Limit
Test methods may be modified from specified reference method unless indicated by an *
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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G76172 **REPORT No. B19-12916 (i)**

Report To:

Azimuth Environmental
647 Welham Rd,
Barrie ON L4N9A1 Canada
Attention: Ian Acheson

Caduceon Environmental Laboratories
112 Commerce Park Drive
Barrie ON L4N 8W8
Tel: 705-252-5743
Fax: 705-252-5746

DATE RECEIVED: 10-May-19
DATE REPORTED: 17-May-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		BH 403a-5	BH 403b-3	BH 403c-2	BH 405a-10	O. Reg. 153	
	Sample I.D.		B19-12916-1	B19-12916-2	B19-12916-3	B19-12916-4	Tbl. 2 - ICC	Tbl. 2 - RPI
	Date Collected		09-May-19	09-May-19	10-May-19	10-May-19	Soil	Soil
Parameter	**Units**	**R.L.**						
Dichloropropene 1,3-cis+trans	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.059	0.050
Ethylbenzene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	1.1	1.1
Dibromoethane,1,2-(Ethylene Dibromide)	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.05	0.05
Hexane	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	46	2.8
Methyl Ethyl Ketone	µg/g	0.5	< 0.5	< 0.5	< 0.5	< 0.5	70	16
Methyl Isobutyl Ketone	µg/g	0.5	< 0.5	< 0.5	< 0.5	< 0.5	31	1.7
Methyl-t-butyl Ether	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	1.6	0.75
Dichloromethane (Methylene Chloride)	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	1.6	0.10
Styrene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	34	0.7
Tetrachloroethane,1,1,1,2-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.087	0.058
Tetrachloroethane,1,1,2,2-	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	0.05
Tetrachloroethylene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	1.9	0.28
Toluene	µg/g	0.2	< 0.2	< 0.2	< 0.2	< 0.2	6.4	2.3
Trichloroethane,1,1,1-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	6.1	0.38
Trichloroethane,1,1,2-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.05	0.05
Trichloroethylene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.55	0.061
Trichlorofluoromethane	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	4	4.0
Vinyl Chloride	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.032	0.020
Xylene, m,p-	µg/g	0.03	< 0.03	< 0.03	< 0.03	< 0.03		
Xylene, o-	µg/g	0.03	< 0.03	< 0.03	< 0.03	< 0.03		

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
Tbl. 2 - RPI Soil - Table 2 - Res./Parkland/Institutional Soil Std

Christine Burke
Lab Manager

R.L. = Reporting Limit
Test methods may be modified from specified reference method unless indicated by an *
Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

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DATE RECEIVED: 10-May-19
DATE REPORTED: 17-May-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		BH 403a-5	BH 403b-3	BH 403c-2	BH 405a-10	O. Reg. 153	
	Sample I.D.		B19-12916-1	B19-12916-2	B19-12916-3	B19-12916-4	Tbl. 2 - ICC	Tbl. 2 - RPI
	Date Collected		09-May-19	09-May-19	10-May-19	10-May-19	Soil	Soil
Parameter	**Units**	**R.L.**						
Xylene, m,p,o-	µg/g	0.03	< 0.03	< 0.03	< 0.03	< 0.03	26	3.1
PHC F1 (C6-C10)	µg/g	10	< 10	< 10	< 10	< 10	55	55
PHC F2 (>C10-C16)	µg/g	5	7	< 5	6	6	230	98
PHC F3 (>C16-C34)	µg/g	10	< 10	< 10	< 10	< 10	1700	300
PHC F4 (>C34-C50)	µg/g	10	< 10	< 10	< 10	< 10	3300	2800
% moisture	%		16.9	20.0	16.5	18.2		

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
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DATE REPORTED: 17-May-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Summary of Exceedances

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
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Christine Burke
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DATE RECEIVED: 10-May-19
DATE REPORTED: 17-May-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Parameter	Qty	Site Analyzed	Analyst Initials	Date Analyzed	Lab Method	Reference Method
SVOC	4	Kingston	sge	16-May-19	C-NAB-S-001 (k)	EPA 8270

µg/g = micrograms per gram (parts per million) and is equal to mg/Kg
F1 C6-C10 hydrocarbons in µg/g, (F1-btex if requested)
F2 C10-C16 hydrocarbons in µg/g, (F2-napth if requested)
F3 C16-C34 hydrocarbons in µg/g, (F3-pah if requested)
F4 C34-C50 hydrocarbons in µg/g
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
Any deviations from the method are noted and reported for any particular sample.
nC6 and nC10 response factor is 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:
Linearity is within 15%:
All results expressed on a dry weight basis.
Unless otherwise noted all chromatograms returned to baseline by the retention time of nC50.

Unless otherwise noted all extraction, analysis, QC requirements and limits for holding time were met.
If analyzed for F4 and F4G they are not to be summed but the greater of the two numbers are to be used in application to the CWS PHC
QC will be made available upon request.

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
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DATE REPORTED: 17-May-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		BH 403a-5	BH 403b-3	BH 403c-2	BH 405a-10	O. Reg. 153	
	Sample I.D.		B19-12916-1	B19-12916-2	B19-12916-3	B19-12916-4	Tbl. 2 - ICC	Tbl. 2 - RPI
	Date Collected		09-May-19	09-May-19	10-May-19	10-May-19	Soil	Soil
Parameter	**Units**	**R.L.**						
Acenaphthene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	21	7.9
Acenaphthylene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.15	0.15
Anthracene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.67	0.67
Benzo(a)anthracene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.96	0.50
Benzo(a)pyrene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.3	0.3
Benzo(b)fluoranthene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.96	0.78
Benzo(b+k)fluoranthene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Benzo(g,h,i)perylene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	9.6	6.6
Benzo(k)fluoranthene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.96	0.78
Chrysene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	9.6	7.0
Dibenzo(a,h)anthracene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.1	0.1
Fluoranthene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	9.6	0.69
Fluorene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	62	62
Indeno(1,2,3,-cd)pyrene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.76	0.38
Methylnaphthalene,1-	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	30	0.99
Methylnaphthalene,2-	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	30	0.99
Methylnaphthalene 2-(1-)	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	30	0.99
Naphthalene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	9.6	0.60
Phenanthrene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	12	6.2
Pyrene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	96	78

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Christine Burke
Lab Manager

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Final Report

C.O.C.: G76172 **REPORT No. B19-12916 (ii)**

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Tel: 705-252-5743
Fax: 705-252-5746

DATE RECEIVED: 10-May-19
DATE REPORTED: 17-May-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Summary of Exceedances

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
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Final Report

C.O.C.: G76171 **REPORT No. B19-12661 (i)**

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Caduceon Environmental Laboratories
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Tel: 705-252-5743
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DATE RECEIVED: 08-May-19
DATE REPORTED: 17-May-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Parameter	Qty	Site Analyzed	Analyst Initials	Date Analyzed	Lab Method	Reference Method
pH	2	Richmond Hill	ABL	14-May-19	A-pH-02 (rh)	MOEE3530
pH	1	Richmond Hill	ABL	16-May-19	A-pH-02 (rh)	MOEE3530
C - Organic	2	Default Site	TES	14-May-19	S-FOC	ASTM E1915-07

µg/g = micrograms per gram (parts per million) and is equal to mg/Kg
F1 C6-C10 hydrocarbons in µg/g, (F1-btex if requested)
F2 C10-C16 hydrocarbons in µg/g, (F2-napth if requested)
F3 C16-C34 hydrocarbons in µg/g, (F3-pah if requested)
F4 C34-C50 hydrocarbons in µg/g
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
Any deviations from the method are noted and reported for any particular sample.
nC6 and nC10 response factor is 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:
Linearity is within 15%:
All results expressed on a dry weight basis.
Unless otherwise noted all chromatograms returned to baseline by the retention time of nC50.

Unless otherwise noted all extraction, analysis, QC requirements and limits for holding time were met.
If analyzed for F4 and F4G they are not to be summed but the greater of the two numbers are to be used in application to the CWS PHC
QC will be made available upon request.

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SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Parameter	Qty	Site Analyzed	Analyst Initials	Date Analyzed	Lab Method	Reference Method
% Moisture	7	Richmond Hill	FAL	13-May-19	A-% moisture RH	
PHC(F2-F4)	7	Kingston	KPR	13-May-19	C-PHC-S-001 (k)	CWS Tier 1
VOC's	7	Richmond Hill	FAL	11-May-19	C-VOC-02 (rh)	EPA 8260
PHC(F1)	7	Richmond Hill	FAL	13-May-19	C-VPHS-01 (rh)	CWS Tier 1

µg/g = micrograms per gram (parts per million) and is equal to mg/Kg
F1 C6-C10 hydrocarbons in µg/g, (F1-btex if requested)
F2 C10-C16 hydrocarbons in µg/g, (F2-napth if requested)
F3 C16-C34 hydrocarbons in µg/g, (F3-pah if requested)
F4 C34-C50 hydrocarbons in µg/g
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
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nC6 and nC10 response factor is 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:
Linearity is within 15%:
All results expressed on a dry weight basis.
Unless otherwise noted all chromatograms returned to baseline by the retention time of nC50.

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DATE RECEIVED: 08-May-19
DATE REPORTED: 17-May-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		BH 401a-9	BH 401b-1	BH 401c-4	BH 401c-4-100	O. Reg. 153	
	Sample I.D.		B19-12661-1	B19-12661-3	B19-12661-5	B19-12661-6	Tbl. 2 - ICC Soil	Tbl. 2 - RPI Soil
	Date Collected		06-May-19	06-May-19	07-May-19	07-May-19		
Parameter	**Units**	**R.L.**						
Acetone	µg/g	0.5	< 0.5	< 0.5	< 0.5	< 0.5	16	16
Benzene	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.32	0.21
Bromodichloromethane	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	1.5	1.5
Bromoform	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.61	0.27
Bromomethane	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	0.05
Carbon Tetrachloride	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.21	0.05
Monochlorobenzene (Chlorobenzene)	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	2.4	2.4
Chloroform	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.47	0.05
Dibromochloromethane	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	2.3	2.3
Dichlorobenzene,1,2-	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	1.2	1.2
Dichlorobenzene,1,3-	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	9.6	4.8
Dichlorobenzene,1,4-	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.2	0.083
Dichlorodifluoromethane	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	16	16
Dichloroethane,1,1-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.47	0.47
Dichloroethane,1,2-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.05	0.05
Dichloroethylene,1,1-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.064	0.05
Dichloroethene, cis-1,2-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	1.9	1.9
Dichloroethene, trans-1,2-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	1.3	0.084
Dichloropropane,1,2-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.16	0.050
Dichloropropene, cis-1,3-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02		
Dichloropropene, trans-1,3-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02		

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
Tbl. 2 - RPI Soil - Table 2 - Res./Parkland/Institutional Soil Std

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Christine Burke
Lab Manager

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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G76171 **REPORT No. B19-12661 (ii)**

Report To:

Azimuth Environmental
647 Welham Rd,
Barrie ON L4N9A1 Canada
Attention: Ian Acheson

Caduceon Environmental Laboratories
112 Commerce Park Drive
Barrie ON L4N 8W8
Tel: 705-252-5743
Fax: 705-252-5746

DATE RECEIVED: 08-May-19
DATE REPORTED: 17-May-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		BH 401a-9	BH 401b-1	BH 401c-4	BH 401c-4-100	O. Reg. 153 Tbl. 2 - ICC Soil	O. Reg. 153 Tbl. 2 - RPI Soil
	Sample I.D.		B19-12661-1	B19-12661-3	B19-12661-5	B19-12661-6		
	Date Collected		06-May-19	06-May-19	07-May-19	07-May-19		
Parameter	**Units**	**R.L.**						
Dichloropropene 1,3-cis+trans	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.059	0.050
Ethylbenzene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	1.1	1.1
Dibromoethane,1,2-(Ethylene Dibromide)	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.05	0.05
Hexane	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	46	2.8
Methyl Ethyl Ketone	µg/g	0.5	< 0.5	< 0.5	< 0.5	< 0.5	70	16
Methyl Isobutyl Ketone	µg/g	0.5	< 0.5	< 0.5	< 0.5	< 0.5	31	1.7
Methyl-t-butyl Ether	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	1.6	0.75
Dichloromethane (Methylene Chloride)	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	1.6	0.10
Styrene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	34	0.7
Tetrachloroethane,1,1,1,2-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.087	0.058
Tetrachloroethane,1,1,2,2-	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	0.05
Tetrachloroethylene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	1.9	0.28
Toluene	µg/g	0.2	< 0.2	< 0.2	< 0.2	< 0.2	6.4	2.3
Trichloroethane,1,1,1-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	6.1	0.38
Trichloroethane,1,1,2-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.05	0.05
Trichloroethylene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.55	0.061
Trichlorofluoromethane	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	4	4.0
Vinyl Chloride	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.032	0.020
Xylene, m,p-	µg/g	0.03	< 0.03	< 0.03	< 0.03	< 0.03		

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SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		BH 401a-9	BH 401b-1	BH 401c-4	BH 401c-4-100	O. Reg. 153	
	Sample I.D.		B19-12661-1	B19-12661-3	B19-12661-5	B19-12661-6	Tbl. 2 - ICC Soil	Tbl. 2 - RPI Soil
	Date Collected		06-May-19	06-May-19	07-May-19	07-May-19		
Parameter	**Units**	**R.L.**						
Xylene, o-	µg/g	0.03	< 0.03	< 0.03	< 0.03	< 0.03		
Xylene, m,p,o-	µg/g	0.03	< 0.03	< 0.03	< 0.03	< 0.03	26	3.1
PHC F1 (C6-C10)	µg/g	10	< 10	< 10	< 10	< 10	55	55
PHC F2 (>C10-C16)	µg/g	5	< 5	< 6 [1]	< 5	< 5	230	98
PHC F3 (>C16-C34)	µg/g	10	< 10	< 10	< 10	< 10	1700	300
PHC F4 (>C34-C50)	µg/g	10	< 10	< 10	< 10	< 10	3300	2800
% moisture	%		12.6	20.8	16.9	16.6		

1 . Note: Elevated MDL due to high % moisture.

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JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		BH 402a-8	BH 402b-3	BH 402c-4		O. Reg. 153	
	Sample I.D.		B19-12661-7	B19-12661-8	B19-12661-9		Tbl. 2 - ICC	Tbl. 2 - RPI
	Date Collected		07-May-19	08-May-19	08-May-19		Soil	Soil
Parameter	**Units**	**R.L.**						
Acetone	µg/g	0.5	< 0.5	< 0.5	< 0.5		16	16
Benzene	µg/g	0.02	< 0.02	< 0.02	< 0.02		0.32	0.21
Bromodichloromethane	µg/g	0.02	< 0.02	< 0.02	< 0.02		1.5	1.5
Bromoform	µg/g	0.02	< 0.02	< 0.02	< 0.02		0.61	0.27
Bromomethane	µg/g	0.05	< 0.05	< 0.05	< 0.05		0.05	0.05
Carbon Tetrachloride	µg/g	0.05	< 0.05	< 0.05	< 0.05		0.21	0.05
Monochlorobenzene (Chlorobenzene)	µg/g	0.02	< 0.02	< 0.02	< 0.02		2.4	2.4
Chloroform	µg/g	0.02	< 0.02	< 0.02	< 0.02		0.47	0.05
Dibromochloromethane	µg/g	0.02	< 0.02	< 0.02	< 0.02		2.3	2.3
Dichlorobenzene,1,2-	µg/g	0.05	< 0.05	< 0.05	< 0.05		1.2	1.2
Dichlorobenzene,1,3-	µg/g	0.05	< 0.05	< 0.05	< 0.05		9.6	4.8
Dichlorobenzene,1,4-	µg/g	0.05	< 0.05	< 0.05	< 0.05		0.2	0.083
Dichlorodifluoromethane	µg/g	0.05	< 0.05	< 0.05	< 0.05		16	16
Dichloroethane,1,1-	µg/g	0.02	< 0.02	< 0.02	< 0.02		0.47	0.47
Dichloroethane,1,2-	µg/g	0.02	< 0.02	< 0.02	< 0.02		0.05	0.05
Dichloroethylene,1,1-	µg/g	0.02	< 0.02	< 0.02	< 0.02		0.064	0.05
Dichloroethene, cis-1,2-	µg/g	0.02	< 0.02	< 0.02	< 0.02		1.9	1.9
Dichloroethene, trans-1,2-	µg/g	0.02	< 0.02	< 0.02	< 0.02		1.3	0.084
Dichloropropane,1,2-	µg/g	0.02	< 0.02	< 0.02	< 0.02		0.16	0.050
Dichloropropene, cis-1,3-	µg/g	0.02	< 0.02	< 0.02	< 0.02			
Dichloropropene, trans-1,3-	µg/g	0.02	< 0.02	< 0.02	< 0.02			

O. Reg. 153 - Soil, Ground Water and Sediment Standards
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Christine Burke
Lab Manager

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Fax: 705-252-5746

DATE RECEIVED: 08-May-19
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SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		BH 402a-8	BH 402b-3	BH 402c-4		O. Reg. 153	
	Sample I.D.		B19-12661-7	B19-12661-8	B19-12661-9		Tbl. 2 - ICC	Tbl. 2 - RPI
	Date Collected		07-May-19	08-May-19	08-May-19		Soil	Soil
Parameter	**Units**	**R.L.**						
Dichloropropene 1,3-cis+trans	µg/g	0.02	< 0.02	< 0.02	< 0.02		0.059	0.050
Ethylbenzene	µg/g	0.05	< 0.05	< 0.05	< 0.05		1.1	1.1
Dibromoethane,1,2-(Ethylene Dibromide)	µg/g	0.02	< 0.02	< 0.02	< 0.02		0.05	0.05
Hexane	µg/g	0.02	< 0.02	< 0.02	< 0.02		46	2.8
Methyl Ethyl Ketone	µg/g	0.5	< 0.5	< 0.5	< 0.5		70	16
Methyl Isobutyl Ketone	µg/g	0.5	< 0.5	< 0.5	< 0.5		31	1.7
Methyl-t-butyl Ether	µg/g	0.05	< 0.05	< 0.05	< 0.05		1.6	0.75
Dichloromethane (Methylene Chloride)	µg/g	0.05	< 0.05	< 0.05	< 0.05		1.6	0.10
Styrene	µg/g	0.05	< 0.05	< 0.05	< 0.05		34	0.7
Tetrachloroethane,1,1,1,2-	µg/g	0.02	< 0.02	< 0.02	< 0.02		0.087	0.058
Tetrachloroethane,1,1,2,2-	µg/g	0.05	< 0.05	< 0.05	< 0.05		0.05	0.05
Tetrachloroethylene	µg/g	0.05	< 0.05	< 0.05	< 0.05		1.9	0.28
Toluene	µg/g	0.2	< 0.2	< 0.2	< 0.2		6.4	2.3
Trichloroethane,1,1,1-	µg/g	0.02	< 0.02	< 0.02	< 0.02		6.1	0.38
Trichloroethane,1,1,2-	µg/g	0.02	< 0.02	< 0.02	< 0.02		0.05	0.05
Trichloroethylene	µg/g	0.05	< 0.05	< 0.05	< 0.05		0.55	0.061
Trichlorofluoromethane	µg/g	0.02	< 0.02	< 0.02	< 0.02		4	4.0
Vinyl Chloride	µg/g	0.02	< 0.02	< 0.02	< 0.02		0.032	0.020
Xylene, m,p-	µg/g	0.03	< 0.03	< 0.03	< 0.03			
Xylene, o-	µg/g	0.03	< 0.03	< 0.03	< 0.03			

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JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		BH 402a-8	BH 402b-3	BH 402c-4		O. Reg. 153	
	Sample I.D.		B19-12661-7	B19-12661-8	B19-12661-9		Tbl. 2 - ICC	Tbl. 2 - RPI
	Date Collected		07-May-19	08-May-19	08-May-19		Soil	Soil
Parameter	**Units**	**R.L.**						
Xylene, m,p,o-	µg/g	0.03	< 0.03	< 0.03	< 0.03		26	3.1
PHC F1 (C6-C10)	µg/g	10	< 10	< 10	< 10		55	55
PHC F2 (>C10-C16)	µg/g	5	< 5	< 5	< 5		230	98
PHC F3 (>C16-C34)	µg/g	10	< 10	< 10	< 10		1700	300
PHC F4 (>C34-C50)	µg/g	10	< 10	< 10	< 10		3300	2800
% moisture	%		16.0	15.6	17.8			

1 Note: Elevated MDL due to high % moisture.

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Summary of Exceedances

O. Reg. 153 - Soil, Ground Water and Sediment Standards
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Tbl. 2 - RPI Soil - Table 2 - Res./Parkland/Institutional Soil Std

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SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		BH 401a-2	BH 401a-11	BH 402c-3		O. Reg. 153	
	Sample I.D.		B19-12661-2	B19-12661-4	B19-12661-10		Tbl. 2 - ICC	Tbl. 2 - RPI
	Date Collected		06-May-19	06-May-19	08-May-19		Soil	Soil
Parameter	**Units**	**R.L.**						
pH @25°C	pH Units		7.82	7.88				
pH @25°C	pH Units				7.88			
Fraction Organic Carbon	g/g	0.005	< 0.005 [1]	0.012 [1]				
Fraction Organic Carbon	g/g	0.005	< 0.005 [1]	0.009 [1]				
Fraction Organic Carbon	g/g	0.005	< 0.005 [1]	0.010 [1]				

1 . Subcontracted to Testmark Labs

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Parameter	Qty	Site Analyzed	Analyst Initials	Date Analyzed	Lab Method	Reference Method
SVOC	7	Kingston	sge	14-May-19	C-NAB-S-001 (k)	EPA 8270

µg/g = micrograms per gram (parts per million) and is equal to mg/Kg
F1 C6-C10 hydrocarbons in µg/g, (F1-btex if requested)
F2 C10-C16 hydrocarbons in µg/g, (F2-napth if requested)
F3 C16-C34 hydrocarbons in µg/g, (F3-pah if requested)
F4 C34-C50 hydrocarbons in µg/g
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
Any deviations from the method are noted and reported for any particular sample.
nC6 and nC10 response factor is 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:
Linearity is within 15%:
All results expressed on a dry weight basis.
Unless otherwise noted all chromatograms returned to baseline by the retention time of nC50.

Unless otherwise noted all extraction, analysis, QC requirements and limits for holding time were met.
If analyzed for F4 and F4G they are not to be summed but the greater of the two numbers are to be used in application to the CWS PHC
QC will be made available upon request.

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DATE REPORTED: 17-May-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		BH 401a-9	BH 401b-1	BH 401c-4	BH 401c-4-100	O. Reg. 153 Tbl. 2 - ICC Soil	O. Reg. 153 Tbl. 2 - RPI Soil
	Sample I.D.		B19-12661-1	B19-12661-3	B19-12661-5	B19-12661-6		
	Date Collected		06-May-19	06-May-19	07-May-19	07-May-19		
Parameter	**Units**	**R.L.**						
Acenaphthene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	21	7.9
Acenaphthylene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.15	0.15
Anthracene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.67	0.67
Benzo(a)anthracene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.96	0.50
Benzo(a)pyrene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.3	0.3
Benzo(b)fluoranthene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.96	0.78
Benzo(b+k)fluoranthene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Benzo(g,h,i)perylene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	9.6	6.6
Benzo(k)fluoranthene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.96	0.78
Chrysene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	9.6	7.0
Dibenzo(a,h)anthracene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.1	0.1
Fluoranthene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	9.6	0.69
Fluorene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	62	62
Indeno(1,2,3,-cd)pyrene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.76	0.38
Methylnaphthalene,1-	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	30	0.99
Methylnaphthalene,2-	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	30	0.99
Methylnaphthalene 2-(1-)	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	30	0.99
Naphthalene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	9.6	0.60
Phenanthrene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	12	6.2
Pyrene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	96	78

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
Tbl. 2 - RPI Soil - Table 2 - Res./Parkland/Institutional Soil Std



Christine Burke
Lab Manager

R.L. = Reporting Limit
Test methods may be modified from specified reference method unless indicated by an *
Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G76171 **REPORT No. B19-12661 (iii)**

Report To:

Azimuth Environmental
647 Welham Rd,
Barrie ON L4N9A1 Canada
Attention: Ian Acheson

Caduceon Environmental Laboratories
112 Commerce Park Drive
Barrie ON L4N 8W8
Tel: 705-252-5743
Fax: 705-252-5746

DATE RECEIVED: 08-May-19
DATE REPORTED: 17-May-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		BH 402a-8	BH 402b-3	BH 402c-4		O. Reg. 153	
	Sample I.D.		B19-12661-7	B19-12661-8	B19-12661-9		Tbl. 2 - ICC	Tbl. 2 - RPI
	Date Collected		07-May-19	08-May-19	08-May-19		Soil	Soil
Parameter	**Units**	**R.L.**						
Acenaphthene	µg/g	0.05	< 0.05	< 0.05	< 0.05		21	7.9
Acenaphthylene	µg/g	0.05	< 0.05	< 0.05	< 0.05		0.15	0.15
Anthracene	µg/g	0.05	< 0.05	< 0.05	< 0.05		0.67	0.67
Benzo(a)anthracene	µg/g	0.05	< 0.05	< 0.05	< 0.05		0.96	0.50
Benzo(a)pyrene	µg/g	0.05	< 0.05	< 0.05	< 0.05		0.3	0.3
Benzo(b)fluoranthene	µg/g	0.05	< 0.05	< 0.05	< 0.05		0.96	0.78
Benzo(b+k)fluoranthene	µg/g	0.05	< 0.05	< 0.05	< 0.05			
Benzo(g,h,i)perylene	µg/g	0.05	< 0.05	< 0.05	< 0.05		9.6	6.6
Benzo(k)fluoranthene	µg/g	0.05	< 0.05	< 0.05	< 0.05		0.96	0.78
Chrysene	µg/g	0.05	< 0.05	< 0.05	< 0.05		9.6	7.0
Dibenzo(a,h)anthracene	µg/g	0.05	< 0.05	< 0.05	< 0.05		0.1	0.1
Fluoranthene	µg/g	0.05	< 0.05	< 0.05	< 0.05		9.6	0.69
Fluorene	µg/g	0.05	< 0.05	< 0.05	< 0.05		62	62
Indeno(1,2,3,-cd)pyrene	µg/g	0.05	< 0.05	< 0.05	< 0.05		0.76	0.38
Methylnaphthalene,1-	µg/g	0.05	< 0.05	< 0.05	< 0.05		30	0.99
Methylnaphthalene,2-	µg/g	0.05	< 0.05	< 0.05	< 0.05		30	0.99
Methylnaphthalene 2-(1-)	µg/g	0.05	< 0.05	< 0.05	< 0.05		30	0.99
Naphthalene	µg/g	0.05	< 0.05	< 0.05	0.29		9.6	0.60
Phenanthrene	µg/g	0.05	< 0.05	< 0.05	< 0.05		12	6.2
Pyrene	µg/g	0.05	< 0.05	< 0.05	< 0.05		96	78

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
Tbl. 2 - RPI Soil - Table 2 - Res./Parkland/Institutional Soil Std

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Christine Burke
Lab Manager

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Attention: Ian Acheson

Caduceon Environmental Laboratories
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Barrie ON L4N 8W8
Tel: 705-252-5743
Fax: 705-252-5746

DATE RECEIVED: 08-May-19
DATE REPORTED: 17-May-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Summary of Exceedances

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
Tbl. 2 - RPI Soil - Table 2 - Res./Parkland/Institutional Soil Std

Christine Burke
Lab Manager

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Grain Size Distribution Chart

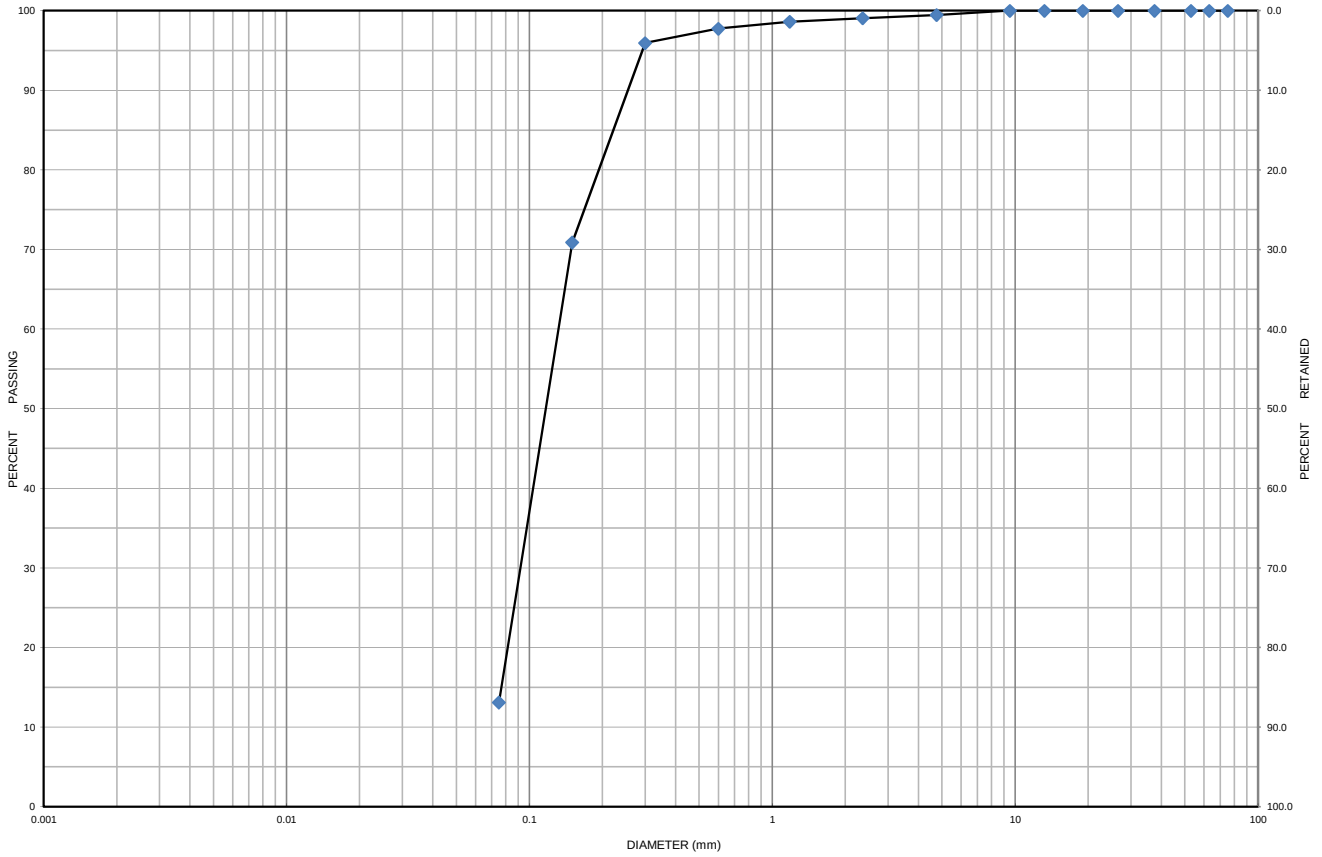
Project Number: *5305-001* **Client:** *Caduceon Environmental Laboratories*

Project Name: *Caduceon Environmental Laboratories*

Sample Date: *N/A* **Sampled By:** *Client* **Client Project No.:** *B19-12661*

Caduceon Sample No.: *B19-12661-1* **Location:** *BH 401a-2* **Lab Sample No:** *S-19-0296*

UNIFIED SOIL CLASSIFICATION SYSTEM					
CLAY & SILT (<0.075 mm)	SAND (<4.75 mm to 0.075 mm)			GRAVEL (>4.75 mm)	
	FINE	MEDIUM	COARSE	FINE	COARSE



MIT SOIL CLASSIFICATION SYSTEM								
CLAY	SILT	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	BOULDERS
		SAND			GRAVEL			

Caduceon Sample No.	Depth	Gravel	Sand	Silt	Clay	Moisture
B19-12661-1		1	86	13		7.2

Description	Classification	D_{60}	D_{30}	D_{10}	C_u	C_c
Sand some Silt	SP	0.140	0.092	-	-	-

Issued By: _____ *Date Issued:* *May 15, 2019*

(Senior Project Manager)

Cambium Inc. (Laboratory)

866.217.7900 | cambium-inc.com

701 The Queensway | Units 5-6 | Peterborough | ON | K9J 7J6

Grain Size Distribution Chart

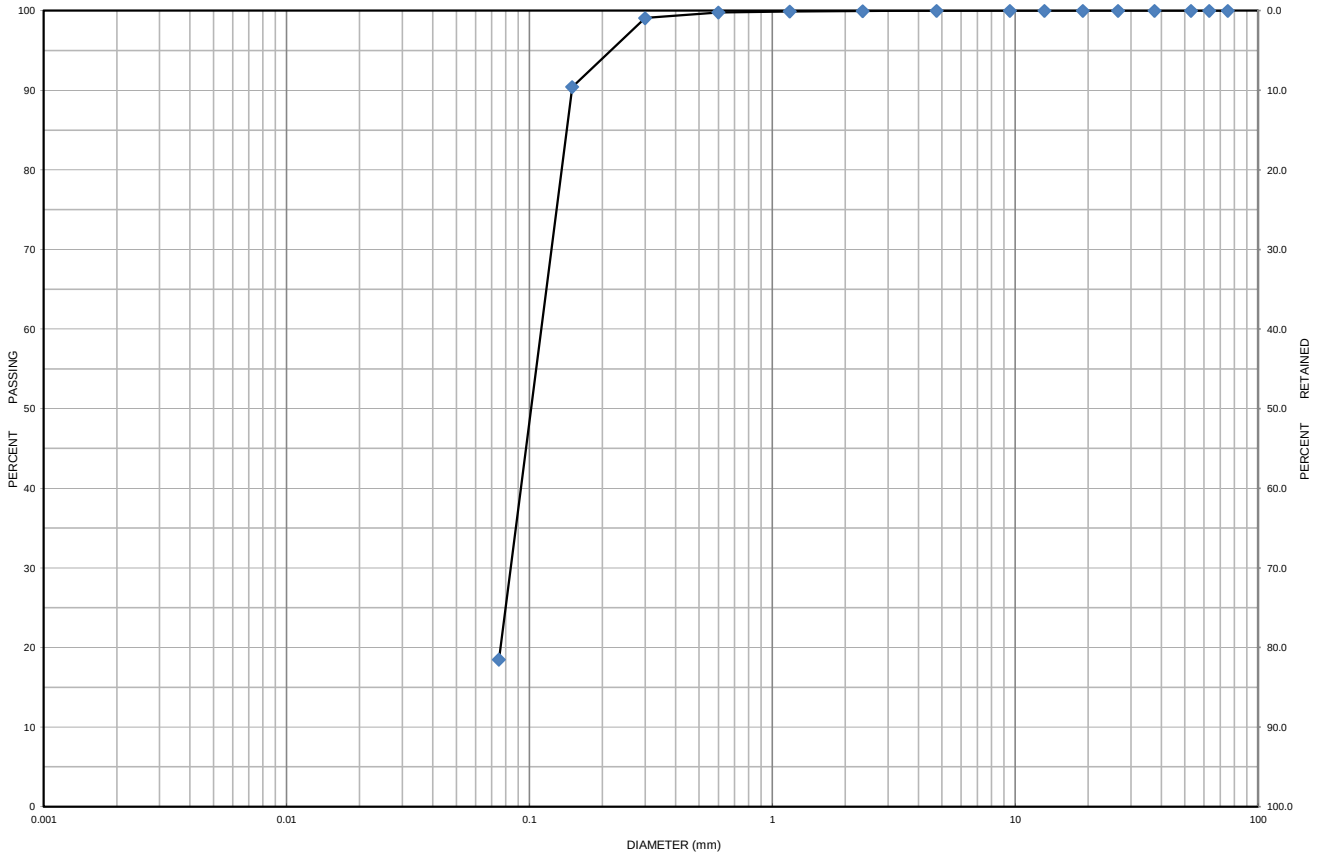
Project Number: *5305-001* **Client:** *Caduceon Environmental Laboratories*

Project Name: *Caduceon Environmental Laboratories*

Sample Date: *N/A* **Sampled By:** *Client* **Client Project No.:** *B19-12661*

Caduceon Sample No.: *B19-12661-4* **Location** *BH 401a-11* **Lab Sample No:** *S-19-0297*

UNIFIED SOIL CLASSIFICATION SYSTEM					
CLAY & SILT (<0.075 mm)	SAND (<4.75 mm to 0.075 mm)			GRAVEL (>4.75 mm)	
	FINE	MEDIUM	COARSE	FINE	COARSE



MIT SOIL CLASSIFICATION SYSTEM								
CLAY	SILT	FINE	MEDIUM	COARSE	FINE	MEDIUM	COARSE	BOULDERS
		SAND			GRAVEL			

Caduceon Sample No.	Depth	Gravel	Sand	Silt	Clay	Moisture
B19-12661-4		0	82	18		22.1

Description	Classification	D_{60}	D_{30}	D_{10}	C_u	C_c
Sand some Silt	SP	0.120	0.084	-	-	-

Issued By: _____ *Date Issued:* *May 15, 2019*

(Senior Project Manager)

Cambium Inc. (Laboratory)

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701 The Queensway | Units 5-6 | Peterborough | ON | K9J 7J6

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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G76174-5 **REPORT No. B19-13146 (ii)**

Report To:

Azimuth Environmental
647 Welham Rd,
Barrie ON L4N9A1 Canada
Attention: Ian Acheson

Caduceon Environmental Laboratories
112 Commerce Park Drive
Barrie ON L4N 8W8
Tel: 705-252-5743
Fax: 705-252-5746

DATE RECEIVED: 14-May-19
DATE REPORTED: 23-May-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Parameter	Qty	Site Analyzed	Analyst Initials	Date Analyzed	Lab Method	Reference Method
PHC(F2-F4)	10	Kingston	KPR	16-May-19	C-PHC-W-001 (k)	MOE E3421
VOC's	10	Richmond Hill	FAL	16-May-19	C-VOC-02 (rh)	EPA 8260
PHC(F1)	10	Richmond Hill	FAL	16-May-19	C-VPHW-01 (rh)	MOE E3421

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

Christine Burke
Lab Manager

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SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		MW 401a	MW 401b	MW 401b-II	MW 401c	O. Reg. 153	
	Sample I.D.		B19-13146-4	B19-13146-5	B19-13146-6	B19-13146-7	Tbl. 2 - PGW	
	Date Collected		13-May-19	13-May-19	13-May-19	13-May-19		
Parameter	**Units**	**R.L.**						
Acetone	µg/L	30	< 30	< 30	< 30	< 30	2700	
Benzene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	5	
Bromodichloromethane	µg/L	2	< 2	< 2	< 2	< 2	16	
Bromoform	µg/L	5	< 5	< 5	< 5	< 5	25	
Bromomethane	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.89	
Carbon Tetrachloride	µg/L	0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.79	
Monochlorobenzene (Chlorobenzene)	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	30	
Chloroform	µg/L	1	< 1	< 1	< 1	< 1	2.4	
Dibromochloromethane	µg/L	2	< 2	< 2	< 2	< 2	25	
Dichlorobenzene,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	3	
Dichlorobenzene,1,3-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	59	
Dichlorobenzene,1,4-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1	
Dichlorodifluoromethane	µg/L	2	< 2	< 2	< 2	< 2	590	
Dichloroethane,1,1-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	5	
Dichloroethane,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Dichloroethylene,1,1-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Dichloroethene, cis-1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Dichloroethene, trans-1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Dichloropropane,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	5	
Dichloropropene, cis-1,3-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5		
Dichloropropene, trans-1,3-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5		
Dichloropropene 1,3-cis+trans	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.5	

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

R.L. = Reporting Limit
Test methods may be modified from specified reference method unless indicated by an *
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Christine Burke
Lab Manager

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Final Report

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Attention: Ian Acheson

Caduceon Environmental Laboratories
112 Commerce Park Drive
Barrie ON L4N 8W8
Tel: 705-252-5743
Fax: 705-252-5746

DATE RECEIVED: 14-May-19
DATE REPORTED: 23-May-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		MW 401a	MW 401b	MW 401b-II	MW 401c	O. Reg. 153	
	Sample I.D.		B19-13146-4	B19-13146-5	B19-13146-6	B19-13146-7	Tbl. 2 - PGW	
	Date Collected		13-May-19	13-May-19	13-May-19	13-May-19		
Parameter	**Units**	**R.L.**						
Ethylbenzene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	2.4	
Dibromoethane,1,2-(Ethylene Dibromide)	µg/L	0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.2	
Hexane	µg/L	5	< 5	< 5	< 5	< 5	51	
Methyl Ethyl Ketone	µg/L	20	< 20	< 20	< 20	< 20	1800	
Methyl Isobutyl Ketone	µg/L	20	< 20	< 20	< 20	< 20	640	
Methyl-t-butyl Ether	µg/L	2	< 2	< 2	< 2	< 2	15	
Dichloromethane (Methylene Chloride)	µg/L	5	< 5	< 5	< 5	< 5	50	
Styrene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	5.4	
Tetrachloroethane,1,1,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.1	
Tetrachloroethane,1,1,2,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1	
Tetrachloroethylene	µg/L	0.5	< 0.5	1.3	1.2	< 0.5	1.6	
Toluene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	24	
Trichloroethane,1,1,1-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	200	
Trichloroethane,1,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	4.7	
Trichloroethylene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Trichlorofluoromethane	µg/L	5	< 5	< 5	< 5	< 5	150	
Vinyl Chloride	µg/L	0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.5	
Xylene, m,p-	µg/L	1.0	< 1.0	< 1.0	< 1.0	< 1.0		
Xylene, o-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5		
Xylene, m,p,o-	µg/L	1.1	< 1.1	< 1.1	< 1.1	< 1.1	300	
PHC F1 (C6-C10)	µg/L	50	< 50	< 50	< 50	< 50	750	

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

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Lab Manager

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DATE RECEIVED: 14-May-19
DATE REPORTED: 23-May-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		MW 401a	MW 401b	MW 401b-II	MW 401c	O. Reg. 153	
	Sample I.D.		B19-13146-4	B19-13146-5	B19-13146-6	B19-13146-7	Tbl. 2 - PGW	
	Date Collected		13-May-19	13-May-19	13-May-19	13-May-19		
Parameter	**Units**	**R.L.**						
PHC F2 (>C10-C16)	µg/L	50	< 50	< 50	< 50	< 50	150	
PHC F3 (>C16-C34)	µg/L	400	< 400	< 400	< 400	< 400	500	
PHC F4 (>C34-C50)	µg/L	400	< 400	< 400	< 400	< 400	500	

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SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		MW 402a	MW 402c	MW 402b	MW 403a	O. Reg. 153	
	Sample I.D.		B19-13146-8	B19-13146-9	B19-13146-10	B19-13146-11	Tbl. 2 - PGW	
	Date Collected		13-May-19	13-May-19	13-May-19	13-May-19		
Parameter	**Units**	**R.L.**						
Acetone	µg/L	30	< 30	< 30	< 30	< 30	2700	
Benzene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	5	
Bromodichloromethane	µg/L	2	< 2	< 2	< 2	< 2	16	
Bromoform	µg/L	5	< 5	< 5	< 5	< 5	25	
Bromomethane	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.89	
Carbon Tetrachloride	µg/L	0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.79	
Monochlorobenzene (Chlorobenzene)	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	30	
Chloroform	µg/L	1	< 1	< 1	< 1	< 1	2.4	
Dibromochloromethane	µg/L	2	< 2	< 2	< 2	< 2	25	
Dichlorobenzene,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	3	
Dichlorobenzene,1,3-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	59	
Dichlorobenzene,1,4-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1	
Dichlorodifluoromethane	µg/L	2	< 2	< 2	< 2	< 2	590	
Dichloroethane,1,1-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	5	
Dichloroethane,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Dichloroethylene,1,1-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Dichloroethene, cis-1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Dichloroethene, trans-1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Dichloropropane,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	5	
Dichloropropene, cis-1,3-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5		
Dichloropropene, trans-1,3-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5		
Dichloropropene 1,3-cis+trans	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.5	

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

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Christine Burke
Lab Manager

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Final Report

C.O.C.: G76174-5 **REPORT No. B19-13146 (ii)**

Report To:

Azimuth Environmental
647 Welham Rd,
Barrie ON L4N9A1 Canada
Attention: Ian Acheson

Caduceon Environmental Laboratories
112 Commerce Park Drive
Barrie ON L4N 8W8
Tel: 705-252-5743
Fax: 705-252-5746

DATE RECEIVED: 14-May-19
DATE REPORTED: 23-May-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D. / Sample I.D. / Date Collected		MW 402a B19-13146-8 13-May-19	MW 402c B19-13146-9 13-May-19	MW 402b B19-13146-10 13-May-19	MW 403a B19-13146-11 13-May-19	O. Reg. 153 Tbl. 2 - PGW	
Parameter	**Units**	**R.L.**						
Ethylbenzene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	2.4	
Dibromoethane,1,2-(Ethylene Dibromide)	µg/L	0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.2	
Hexane	µg/L	5	< 5	< 5	< 5	< 5	51	
Methyl Ethyl Ketone	µg/L	20	< 20	< 20	< 20	< 20	1800	
Methyl Isobutyl Ketone	µg/L	20	< 20	< 20	< 20	< 20	640	
Methyl-t-butyl Ether	µg/L	2	< 2	< 2	< 2	< 2	15	
Dichloromethane (Methylene Chloride)	µg/L	5	< 5	< 5	< 5	< 5	50	
Styrene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	5.4	
Tetrachloroethane,1,1,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.1	
Tetrachloroethane,1,1,2,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1	
Tetrachloroethylene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Toluene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	24	
Trichloroethane,1,1,1-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	200	
Trichloroethane,1,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	4.7	
Trichloroethylene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Trichlorofluoromethane	µg/L	5	< 5	< 5	< 5	< 5	150	
Vinyl Chloride	µg/L	0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.5	
Xylene, m,p-	µg/L	1.0	< 1.0	< 1.0	< 1.0	< 1.0		
Xylene, o-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5		
Xylene, m,p,o-	µg/L	1.1	< 1.1	< 1.1	< 1.1	< 1.1	300	
PHC F1 (C6-C10)	µg/L	50	< 50	< 50	< 50	< 50	750	

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

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Lab Manager

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Fax: 705-252-5746

DATE RECEIVED: 14-May-19
DATE REPORTED: 23-May-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		MW 402a	MW 402c	MW 402b	MW 403a	O. Reg. 153	
	Sample I.D.		B19-13146-8	B19-13146-9	B19-13146-10	B19-13146-11	Tbl. 2 - PGW	
	Date Collected		13-May-19	13-May-19	13-May-19	13-May-19		
Parameter	**Units**	**R.L.**						
PHC F2 (>C10-C16)	µg/L	50	< 50	< 50	< 50	< 50	150	
PHC F3 (>C16-C34)	µg/L	400	< 400	< 400	< 400	< 400	500	
PHC F4 (>C34-C50)	µg/L	400	< 400	< 400	< 400	< 400	500	

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

Christine Burke
Lab Manager

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DATE REPORTED: 23-May-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		MW 403b	MW 403c			O. Reg. 153	
	Sample I.D.		B19-13146-12	B19-13146-13			Tbl. 2 - PGW	
	Date Collected		13-May-19	13-May-19				
Parameter	**Units**	**R.L.**						
Acetone	µg/L	30	< 30	< 30			2700	
Benzene	µg/L	0.5	< 0.5	0.6			5	
Bromodichloromethane	µg/L	2	< 2	< 2			16	
Bromoform	µg/L	5	< 5	< 5			25	
Bromomethane	µg/L	0.5	< 0.5	< 0.5			0.89	
Carbon Tetrachloride	µg/L	0.2	< 0.2	< 0.2			0.79	
Monochlorobenzene (Chlorobenzene)	µg/L	0.5	< 0.5	< 0.5			30	
Chloroform	µg/L	1	< 1	< 1			2.4	
Dibromochloromethane	µg/L	2	< 2	< 2			25	
Dichlorobenzene,1,2-	µg/L	0.5	< 0.5	< 0.5			3	
Dichlorobenzene,1,3-	µg/L	0.5	< 0.5	< 0.5			59	
Dichlorobenzene,1,4-	µg/L	0.5	< 0.5	< 0.5			1	
Dichlorodifluoromethane	µg/L	2	< 2	< 2			590	
Dichloroethane,1,1-	µg/L	0.5	< 0.5	< 0.5			5	
Dichloroethane,1,2-	µg/L	0.5	< 0.5	< 0.5			1.6	
Dichloroethylene,1,1-	µg/L	0.5	< 0.5	< 0.5			1.6	
Dichloroethene, cis-1,2-	µg/L	0.5	< 0.5	< 0.5			1.6	
Dichloroethene, trans-1,2-	µg/L	0.5	< 0.5	< 0.5			1.6	
Dichloropropane,1,2-	µg/L	0.5	< 0.5	< 0.5			5	
Dichloropropene, cis-1,3-	µg/L	0.5	< 0.5	< 0.5				
Dichloropropene, trans-1,3-	µg/L	0.5	< 0.5	< 0.5				
Dichloropropene 1,3-cis+trans	µg/L	0.5	< 0.5	< 0.5			0.5	

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

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Christine Burke
Lab Manager

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Fax: 705-252-5746

DATE RECEIVED: 14-May-19
DATE REPORTED: 23-May-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		MW 403b	MW 403c			O. Reg. 153	
	Sample I.D.		B19-13146-12	B19-13146-13			Tbl. 2 - PGW	
	Date Collected		13-May-19	13-May-19				
Parameter	**Units**	**R.L.**						
Ethylbenzene	µg/L	0.5	< 0.5	**17.9**			2.4	
Dibromoethane,1,2-(Ethylene Dibromide)	µg/L	0.2	< 0.2	< 0.2			0.2	
Hexane	µg/L	5	< 5	< 5			51	
Methyl Ethyl Ketone	µg/L	20	< 20	< 20			1800	
Methyl Isobutyl Ketone	µg/L	20	< 20	< 20			640	
Methyl-t-butyl Ether	µg/L	2	< 2	< 2			15	
Dichloromethane (Methylene Chloride)	µg/L	5	< 5	< 5			50	
Styrene	µg/L	0.5	< 0.5	< 0.5			5.4	
Tetrachloroethane,1,1,1,2-	µg/L	0.5	< 0.5	< 0.5			1.1	
Tetrachloroethane,1,1,2,2-	µg/L	0.5	< 0.5	< 0.5			1	
Tetrachloroethylene	µg/L	0.5	< 0.5	< 0.5			1.6	
Toluene	µg/L	0.5	< 0.5	3.7			24	
Trichloroethane,1,1,1-	µg/L	0.5	< 0.5	< 0.5			200	
Trichloroethane,1,1,2-	µg/L	0.5	< 0.5	< 0.5			4.7	
Trichloroethylene	µg/L	0.5	< 0.5	< 0.5			1.6	
Trichlorofluoromethane	µg/L	5	< 5	< 5			150	
Vinyl Chloride	µg/L	0.2	< 0.2	< 0.2			0.5	
Xylene, m,p-	µg/L	1.0	< 1.0	39.7				
Xylene, o-	µg/L	0.5	< 0.5	3.2				
Xylene, m,p,o-	µg/L	1.1	< 1.1	42.8			300	
PHC F1 (C6-C10)	µg/L	50	< 50	510			750	

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water



Christine Burke
Lab Manager

R.L. = Reporting Limit
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Final Report

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Barrie ON L4N 8W8
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Fax: 705-252-5746

DATE RECEIVED: 14-May-19
DATE REPORTED: 23-May-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		MW 403b	MW 403c			O. Reg. 153	
	Sample I.D.		B19-13146-12	B19-13146-13			Tbl. 2 - PGW	
	Date Collected		13-May-19	13-May-19				
Parameter	**Units**	**R.L.**						
PHC F2 (>C10-C16)	µg/L	50	60	**1040**			150	
PHC F3 (>C16-C34)	µg/L	400	< 400	< 400			500	
PHC F4 (>C34-C50)	µg/L	400	< 400	< 400			500	

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

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Lab Manager

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SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Summary of Exceedances

Table 2 - Potable Ground Water

MW 403c	Found Value	Limit
PHC F2 (>C10-C16) (µg/L)	1040	150
Ethylbenzene (µg/L)	17.9	2.4

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

Christine Burke
Lab Manager

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SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Parameter	Qty	Site Analyzed	Analyst Initials	Date Analyzed	Lab Method	Reference Method
SVOC	9	Kingston	sge	17-May-19	C-NAB-W-001 (k)	EPA 8270

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

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DATE RECEIVED: 14-May-19
DATE REPORTED: 23-May-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		MW 401a	MW 401b	MW 401b-II	MW 402a	O. Reg. 153	
	Sample I.D.		B19-13146-4	B19-13146-5	B19-13146-6	B19-13146-8	Tbl. 2 - PGW	
	Date Collected		13-May-19	13-May-19	13-May-19	13-May-19		
Parameter	**Units**	**R.L.**						
Acenaphthene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	4.1	
Acenaphthylene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	1	
Anthracene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	2.4	
Benzo(a)anthracene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	1	
Benzo(a)pyrene	µg/L	0.01	**0.025**	**0.019**	**0.019**	< 0.01	0.01	
Benzo(b)fluoranthene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.1	
Benzo(b+k)fluoranthene	µg/L	0.1	< 0.1	< 0.1	< 0.1	< 0.1		
Benzo(g,h,i)perylene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.2	
Benzo(k)fluoranthene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.1	
Chrysene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.1	
Dibenzo(a,h)anthracene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.2	
Fluoranthene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.41	
Fluorene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	120	
Indeno(1,2,3,-cd)pyrene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.2	
Methylnaphthalene,1-	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	3.2	
Methylnaphthalene,2-	µg/L	0.08	< 0.08	< 0.08	< 0.08	< 0.08	3.2	
Methylnaphthalene 2-(1-)	µg/L	1	< 1	< 1	< 1	< 1	3.2	
Naphthalene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	11	
Phenanthrene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	1	
Pyrene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	4.1	

1 . Elevated RL due to sample matrix interference

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water



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SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		MW 402c	MW 402b	MW 403a	MW 403b	O. Reg. 153	
	Sample I.D.		B19-13146-9	B19-13146-10	B19-13146-11	B19-13146-12	Tbl. 2 - PGW	
	Date Collected		13-May-19	13-May-19	13-May-19	13-May-19		
Parameter	**Units**	**R.L.**						
Acenaphthene	µg/L	0.05	< 0.2	< 0.05	< 0.05	< 0.05	4.1	
Acenaphthylene	µg/L	0.05	< 0.2	< 0.05	< 0.05	< 0.05	1	
Anthracene	µg/L	0.05	< 0.2	< 0.05	< 0.05	< 0.05	2.4	
Benzo(a)anthracene	µg/L	0.05	< 0.2	< 0.05	0.08	< 0.05	1	
Benzo(a)pyrene	µg/L	0.01	**< 0.05**	**0.019**	**0.038**	**0.011**	0.01	
Benzo(b)fluoranthene	µg/L	0.05	**< 0.2**	< 0.05	< 0.05	< 0.05	0.1	
Benzo(b+k)fluoranthene	µg/L	0.1	< 0.5	< 0.1	< 0.1	< 0.1		
Benzo(g,h,i)perylene	µg/L	0.05	< 0.2	< 0.05	< 0.05	< 0.05	0.2	
Benzo(k)fluoranthene	µg/L	0.05	**< 0.2**	< 0.05	< 0.05	< 0.05	0.1	
Chrysene	µg/L	0.05	**< 0.2**	< 0.05	< 0.05	< 0.05	0.1	
Dibenzo(a,h)anthracene	µg/L	0.05	< 0.2	< 0.05	< 0.05	< 0.05	0.2	
Fluoranthene	µg/L	0.05	< 0.2	< 0.05	0.08	< 0.05	0.41	
Fluorene	µg/L	0.05	< 0.2	< 0.05	< 0.05	< 0.05	120	
Indeno(1,2,3,-cd)pyrene	µg/L	0.05	< 0.2	< 0.05	< 0.05	< 0.05	0.2	
Methylnaphthalene,1-	µg/L	0.05	< 0.2	< 0.05	0.06	0.15	3.2	
Methylnaphthalene,2-	µg/L	0.08	< 0.4	< 0.08	0.12	0.21	3.2	
Methylnaphthalene 2-(1-)	µg/L	1	< 1	< 1	< 1	< 1	3.2	
Naphthalene	µg/L	0.05	< 0.2	< 0.05	0.06	0.16	11	
Phenanthrene	µg/L	0.05	< 0.2	0.06	0.08	0.05	1	
Pyrene	µg/L	0.05	< 0.2	< 0.05	0.08	< 0.05	4.1	

1 . Elevated RL due to sample matrix interference

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

R.L. = Reporting Limit
Test methods may be modified from specified reference method unless indicated by an *
Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

Christine Burke
Lab Manager

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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G76174-5 **REPORT No. B19-13146 (iii)**

Report To:

Azimuth Environmental
647 Welham Rd,
Barrie ON L4N9A1 Canada
Attention: Ian Acheson

Caduceon Environmental Laboratories
112 Commerce Park Drive
Barrie ON L4N 8W8
Tel: 705-252-5743
Fax: 705-252-5746

DATE RECEIVED: 14-May-19
DATE REPORTED: 23-May-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.	MW 403c				O. Reg. 153	
	Sample I.D.	B19-13146-13				Tbl. 2 - PGW	
	Date Collected	13-May-19					
Parameter	**Units**	**R.L.**					
Acenaphthene	µg/L	0.05	0.11			4.1	
Acenaphthylene	µg/L	0.05	< 0.05			1	
Anthracene	µg/L	0.05	< 0.05			2.4	
Benzo(a)anthracene	µg/L	0.05	< 0.05			1	
Benzo(a)pyrene	µg/L	0.01	**0.020**			0.01	
Benzo(b)fluoranthene	µg/L	0.05	< 0.05			0.1	
Benzo(b+k)fluoranthene	µg/L	0.1	< 0.1				
Benzo(g,h,i)perylene	µg/L	0.05	< 0.05			0.2	
Benzo(k)fluoranthene	µg/L	0.05	< 0.05			0.1	
Chrysene	µg/L	0.05	< 0.05			0.1	
Dibenzo(a,h)anthracene	µg/L	0.05	< 0.05			0.2	
Fluoranthene	µg/L	0.05	< 0.05			0.41	
Fluorene	µg/L	0.05	0.17			120	
Indeno(1,2,3,-cd)pyrene	µg/L	0.05	< 0.05			0.2	
Methylnaphthalene,1-	µg/L	0.05	**16.1**			3.2	
Methylnaphthalene,2-	µg/L	0.08	**8.50**			3.2	
Methylnaphthalene 2-(1-)	µg/L	1	**24.6**			3.2	
Naphthalene	µg/L	0.05	**28.4**			11	
Phenanthrene	µg/L	0.05	< 0.05			1	
Pyrene	µg/L	0.05	< 0.05			4.1	

1 Elevated RL due to sample matrix interference

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water



Christine Burke
Lab Manager

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Fax: 705-252-5746

DATE RECEIVED: 14-May-19
DATE REPORTED: 23-May-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Summary of Exceedances

Table 2 - Potable Ground Water

MW 401a	Found Value	Limit
Benzo(a)pyrene (µg/L)	0.025	0.01
MW 401b	Found Value	Limit
Benzo(a)pyrene (µg/L)	0.019	0.01
MW 401b-II	Found Value	Limit
Benzo(a)pyrene (µg/L)	0.019	0.01
MW 402c	Found Value	Limit
Chrysene (µg/L)	< 0.2	0.1
Benzo(k)fluoranthene (µg/L)	< 0.2	0.1
Benzo(b)fluoranthene (µg/L)	< 0.2	0.1
Benzo(a)pyrene (µg/L)	< 0.05	0.01
MW 402b	Found Value	Limit
Benzo(a)pyrene (µg/L)	0.019	0.01
MW 403a	Found Value	Limit
Benzo(a)pyrene (µg/L)	0.038	0.01
MW 403b	Found Value	Limit
Benzo(a)pyrene (µg/L)	0.011	0.01

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

Christine Burke
Lab Manager

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SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Table 2 - Potable Ground Water

MW 403c	Found Value	Limit
Naphthalene (µg/L)	28.4	11
Methylnaphthalene,2- (µg/L)	8.50	3.2
Methylnaphthalene,1- (µg/L)	16.1	3.2
Methylnaphthalene 2-(1-) (µg/L)	24.6	3.2
Benzo(a)pyrene (µg/L)	0.020	0.01

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

Christine Burke
Lab Manager

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DATE RECEIVED: 14-May-19
DATE REPORTED: 17-May-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Parameter	Qty	Site Analyzed	Analyst Initials	Date Analyzed	Lab Method	Reference Method
Cyanide	2	Kingston	US	16-May-19	A-CN s K	in house
Conductivity	2	Richmond Hill	ABL	15-May-19	A-COND-02 s RH	MOEE3530
pH	2	Richmond Hill	ABL	16-May-19	A-pH-02 (rh)	MOEE3530
Chromium (VI)	2	Holly Lane	LMG	16-May-19	D-CRVI-02 (o)	EPA7196A
Mercury	2	Holly Lane	PBK	16-May-19	D-HG-01 (o)	EPA 7471A
Boron - HWS	2	Holly Lane	AHM	16-May-19	D-HWE s	MOE3470
Sodium Adsorption Ratio	2	Holly Lane	AHM	16-May-19	D-ICP-01 SAR (o)	SM 3120
Metals - ICP-OES	2	Holly Lane	AHM	16-May-19	D-ICP-02 (o)	EPA 6010
Metals - ICP-MS	2	Holly Lane	TPR	16-May-19	D-ICPMS-01 (o)	EPA 6020

µg/g = micrograms per gram (parts per million) and is equal to mg/Kg
F1 C6-C10 hydrocarbons in µg/g, (F1-btex if requested)
F2 C10-C16 hydrocarbons in µg/g, (F2-napth if requested)
F3 C16-C34 hydrocarbons in µg/g, (F3-pah if requested)
F4 C34-C50 hydrocarbons in µg/g
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
Any deviations from the method are noted and reported for any particular sample.
nC6 and nC10 response factor is 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:
Linearity is within 15%:
All results expressed on a dry weight basis.
Unless otherwise noted all chromatograms returned to baseline by the retention time of nC50.

Unless otherwise noted all extraction, analysis, QC requirements and limits for holding time were met.
If analyzed for F4 and F4G they are not to be summed but the greater of the two numbers are to be used in application to the CWS PHC
QC will be made available upon request.

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
Tbl. 2 - RPI Soil - Table 2 - Res./Parkland/Institutional Soil Std



Christine Burke
Lab Manager

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Final Report

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Attention: Ian Acheson

Caduceon Environmental Laboratories
112 Commerce Park Drive
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Tel: 705-252-5743
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DATE RECEIVED: 14-May-19
DATE REPORTED: 17-May-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		BH 407a-4	BH 408-11			O. Reg. 153	
	Sample I.D.		B19-13147-1	B19-13147-3			Tbl. 2 - ICC	Tbl. 2 - RPI
	Date Collected		13-May-19	13-May-19			Soil	Soil
Parameter	**Units**	**R.L.**						
pH @25°C	pH Units		8.04	7.94				
Conductivity @25°C	mS/cm	0.07	0.15	0.21			1.4	0.7
Cyanide (Free)	µg/g	0.05	< 0.05	< 0.05			0.051	0.051
Sodium Adsorption Ratio	units		0.814	0.687			12	5
Antimony	µg/g	0.5	< 0.5	< 0.5			40	7.5
Arsenic	µg/g	0.5	0.5	1.1			18	18
Barium	µg/g	1	16	44			670	390
Beryllium	µg/g	0.2	< 0.2	< 0.2			8	4
Boron	µg/g	0.5	3.9	6.1			120	120
Boron (HWS)	µg/g	0.02	0.09	0.09			2	1.5
Cadmium	µg/g	0.5	< 0.5	< 0.5			1.9	1.2
Chromium	µg/g	1	8	8			160	160
Chromium (VI)	µg/g	0.2	< 0.2	< 0.2			8	8
Cobalt	µg/g	1	2	3			80	22
Copper	µg/g	1	2	6			230	140
Lead	µg/g	5	< 5	< 5			120	120
Mercury	µg/g	0.005	< 0.005	< 0.005			3.9	0.27
Molybdenum	µg/g	1	< 1	< 1			40	6.9
Nickel	µg/g	1	3	6			270	100
Selenium	µg/g	0.5	< 0.5	< 0.5			5.5	2.4
Silver	µg/g	0.2	< 0.2	< 0.2			40	20
Thallium	µg/g	0.1	< 0.1	< 0.1			3.3	1
Uranium	µg/g	0.1	0.3	0.4			33	23
Vanadium	µg/g	1	29	17			86	86

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
Tbl. 2 - RPI Soil - Table 2 - Res./Parkland/Institutional Soil Std

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Christine Burke
Lab Manager

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DATE RECEIVED: 14-May-19
DATE REPORTED: 17-May-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		BH 407a-4	BH 408-11			O. Reg. 153	
	Sample I.D.		B19-13147-1	B19-13147-3			Tbl. 2 - ICC	Tbl. 2 - RPI
	Date Collected		13-May-19	13-May-19			Soil	Soil
Parameter	**Units**	**R.L.**						
Zinc	µg/g	3	7	14			340	340

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
Tbl. 2 - RPI Soil - Table 2 - Res./Parkland/Institutional Soil Std

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DATE REPORTED: 17-May-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Summary of Exceedances

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
Tbl. 2 - RPI Soil - Table 2 - Res./Parkland/Institutional Soil Std

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Final Report

C.O.C.: G76184 **REPORT No. B19-12919**

Report To:

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647 Welham Rd,
Barrie ON L4N9A1 Canada
Attention: Ian Acheson

Caduceon Environmental Laboratories
112 Commerce Park Drive
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Tel: 705-252-5743
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DATE RECEIVED: 10-May-19
DATE REPORTED: 23-May-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Parameter	Qty	Site Analyzed	Analyst Initials	Date Analyzed	Lab Method	Reference Method
Cyanide	11	Kingston	US	15-May-19	A-CN s K	in house
Conductivity	11	Richmond Hill	ABL	15-May-19	A-COND-02 s RH	MOEE3530
pH	11	Richmond Hill	ABL	14-May-19	A-pH-02 (rh)	MOEE3530
Chromium (VI)	11	Holly Lane	LMG	16-May-19	D-CRVI-02 (o)	EPA7196A
Mercury	11	Holly Lane	PBK	22-May-19	D-HG-01 (o)	EPA 7471A
Boron - HWS	11	Holly Lane	AHM	22-May-19	D-HWE s	MOE3470
Sodium Adsorption Ratio	11	Holly Lane	AHM	23-May-19	D-ICP-01 SAR (o)	SM 3120
Metals - ICP-OES	11	Holly Lane	AHM	22-May-19	D-ICP-02 (o)	EPA 6010
Metals - ICP-MS	11	Holly Lane	TPR	22-May-19	D-ICPMS-01 (o)	EPA 6020

O. Reg. 153 - Soil, Ground Water and Sediment Standards
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Tbl. 2 - RPI Soil - Table 2 - Res./Parkland/Institutional Soil Std



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DATE RECEIVED: 10-May-19
DATE REPORTED: 23-May-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		BH 401a-5	BH 401b-1	BH 401c-3	BH 402a-4	O. Reg. 153	
	Sample I.D.		B19-12919-1	B19-12919-2	B19-12919-3	B19-12919-4	Tbl. 2 - ICC	Tbl. 2 - RPI
	Date Collected		06-May-19	06-May-19	07-May-19	07-May-19	Soil	Soil
Parameter	**Units**	**R.L.**						
pH @25°C	pH Units		7.97	7.94	7.81	7.98		
Conductivity @25°C	mS/cm	0.07	0.25	0.37	0.22	0.42	1.4	0.7
Cyanide (Free)	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.051	0.051
Sodium Adsorption Ratio	units		2.49	0.897	0.724	2.42	12	5
Antimony	µg/g	0.5	< 0.5	0.6	< 0.5	< 0.5	40	7.5
Arsenic	µg/g	0.5	0.6	0.8	1.1	< 0.5	18	18
Barium	µg/g	1	16	23	26	15	670	390
Beryllium	µg/g	0.2	< 0.2	< 0.2	< 0.2	< 0.2	8	4
Boron	µg/g	0.5	3.8	4.0	4.5	3.6	120	120
Boron (HWS)	µg/g	0.02	0.05	0.05	0.05	0.08	2	1.5
Cadmium	µg/g	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.9	1.2
Chromium	µg/g	1	29	15	14	13	160	160
Chromium (VI)	µg/g	0.2	< 0.2	< 0.2	< 0.2	< 0.2	8	8
Cobalt	µg/g	1	2	4	3	2	80	22
Copper	µg/g	1	2	5	6	2	230	140
Lead	µg/g	5	< 5	< 5	< 5	< 5	120	120
Mercury	µg/g	0.005	0.005	0.005	0.006	< 0.005	3.9	0.27
Molybdenum	µg/g	1	< 1	< 1	< 1	< 1	40	6.9
Nickel	µg/g	1	37	14	11	11	270	100
Selenium	µg/g	0.5	< 0.5	< 0.5	< 0.5	< 0.5	5.5	2.4
Silver	µg/g	0.2	< 0.2	< 0.2	< 0.2	< 0.2	40	20
Thallium	µg/g	0.1	< 0.1	< 0.1	< 0.1	< 0.1	3.3	1
Uranium	µg/g	0.1	0.3	0.3	0.4	0.3	33	23
Vanadium	µg/g	1	14	21	24	21	86	86

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
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Final Report

C.O.C.: G76184 **REPORT No. B19-12919**

Report To:

Azimuth Environmental
647 Welham Rd,
Barrie ON L4N9A1 Canada
Attention: Ian Acheson

Caduceon Environmental Laboratories
112 Commerce Park Drive
Barrie ON L4N 8W8
Tel: 705-252-5743
Fax: 705-252-5746

DATE RECEIVED: 10-May-19
DATE REPORTED: 23-May-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		BH 401a-5	BH 401b-1	BH 401c-3	BH 402a-4	O. Reg. 153	
	Sample I.D.		B19-12919-1	B19-12919-2	B19-12919-3	B19-12919-4	Tbl. 2 - ICC	Tbl. 2 - RPI
	Date Collected		06-May-19	06-May-19	07-May-19	07-May-19	Soil	Soil
Parameter	**Units**	**R.L.**						
Zinc	µg/g	3	8	11	12	8	340	340

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
Tbl. 2 - RPI Soil - Table 2 - Res./Parkland/Institutional Soil Std

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Christine Burke
Lab Manager

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SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		BH 402b-2	BH 402c-3	BH 403a-4	BH 403b-2	O. Reg. 153	
	Sample I.D.		B19-12919-5	B19-12919-6	B19-12919-7	B19-12919-8	Tbl. 2 - ICC	Tbl. 2 - RPI
	Date Collected		08-May-19	08-May-19	09-May-19	09-May-19	Soil	Soil
Parameter	**Units**	**R.L.**						
pH @25°C	pH Units		7.97	7.96	7.88	7.87		
Conductivity @25°C	mS/cm	0.07	0.23	0.30	0.31	0.27	1.4	0.7
Cyanide (Free)	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.051	0.051
Sodium Adsorption Ratio	units		1.94	3.02	2.05	1.99	12	5
Antimony	µg/g	0.5	< 0.5	< 0.5	< 0.5	< 0.5	40	7.5
Arsenic	µg/g	0.5	< 0.5	0.5	< 0.5	< 0.5	18	18
Barium	µg/g	1	15	15	13	12	670	390
Beryllium	µg/g	0.2	< 0.2	< 0.2	< 0.2	< 0.2	8	4
Boron	µg/g	0.5	3.9	3.5	3.7	3.7	120	120
Boron (HWS)	µg/g	0.02	0.04	0.08	0.06	0.05	2	1.5
Cadmium	µg/g	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.9	1.2
Chromium	µg/g	1	11	7	11	8	160	160
Chromium (VI)	µg/g	0.2	< 0.2	< 0.2	< 0.2	< 0.2	8	8
Cobalt	µg/g	1	2	2	2	2	80	22
Copper	µg/g	1	2	< 1	2	2	230	140
Lead	µg/g	5	< 5	< 5	< 5	< 5	120	120
Mercury	µg/g	0.005	< 0.005	< 0.005	< 0.005	< 0.005	3.9	0.27
Molybdenum	µg/g	1	< 1	< 1	< 1	< 1	40	6.9
Nickel	µg/g	1	11	4	11	4	270	100
Selenium	µg/g	0.5	< 0.5	< 0.5	< 0.5	< 0.5	5.5	2.4
Silver	µg/g	0.2	< 0.2	< 0.2	< 0.2	< 0.2	40	20
Thallium	µg/g	0.1	< 0.1	< 0.1	< 0.1	< 0.1	3.3	1
Uranium	µg/g	0.1	0.3	0.3	0.2	0.3	33	23
Vanadium	µg/g	1	17	17	14	20	86	86

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
Tbl. 2 - RPI Soil - Table 2 - Res./Parkland/Institutional Soil Std



Christine Burke
Lab Manager

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DATE RECEIVED: 10-May-19
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SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		BH 402b-2	BH 402c-3	BH 403a-4	BH 403b-2	O. Reg. 153	
	Sample I.D.		B19-12919-5	B19-12919-6	B19-12919-7	B19-12919-8	Tbl. 2 - ICC	Tbl. 2 - RPI
	Date Collected		08-May-19	08-May-19	09-May-19	09-May-19	Soil	Soil
Parameter	**Units**	**R.L.**						
Zinc	µg/g	3	7	6	7	7	340	340

O. Reg. 153 - Soil, Ground Water and Sediment Standards
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SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		BH 403c-3	BH 403c-3-100	BH 405a-5		O. Reg. 153	
	Sample I.D.		B19-12919-9	B19-12919-10	B19-12919-11		Tbl. 2 - ICC Soil	Tbl. 2 - RPI Soil
	Date Collected		10-May-19	10-May-19	10-May-19			
Parameter	**Units**	**R.L.**						
pH @25°C	pH Units		7.96	7.92	7.89			
Conductivity @25°C	mS/cm	0.07	0.29	0.32	0.26		1.4	0.7
Cyanide (Free)	µg/g	0.05	< 0.05	< 0.05	< 0.05		0.051	0.051
Sodium Adsorption Ratio	units		3.26	4.33	2.19		12	5
Antimony	µg/g	0.5	< 0.5	< 0.5	< 0.5		40	7.5
Arsenic	µg/g	0.5	< 0.5	< 0.5	0.5		18	18
Barium	µg/g	1	12	12	**738**		670	390
Beryllium	µg/g	0.2	< 0.2	< 0.2	< 0.2		8	4
Boron	µg/g	0.5	3.3	3.3	3.3		120	120
Boron (HWS)	µg/g	0.02	0.03	0.03	0.03		2	1.5
Cadmium	µg/g	0.5	< 0.5	< 0.5	< 0.5		1.9	1.2
Chromium	µg/g	1	7	6	7		160	160
Chromium (VI)	µg/g	0.2	< 0.2	< 0.2	< 0.2		8	8
Cobalt	µg/g	1	2	1	2		80	22
Copper	µg/g	1	< 1	< 1	1		230	140
Lead	µg/g	5	< 5	< 5	< 5		120	120
Mercury	µg/g	0.005	< 0.005	< 0.005	< 0.005		3.9	0.27
Molybdenum	µg/g	1	< 1	< 1	< 1		40	6.9
Nickel	µg/g	1	3	4	3		270	100
Selenium	µg/g	0.5	< 0.5	< 0.5	< 0.5		5.5	2.4
Silver	µg/g	0.2	< 0.2	< 0.2	< 0.2		40	20
Thallium	µg/g	0.1	< 0.1	< 0.1	< 0.1		3.3	1
Uranium	µg/g	0.1	0.3	0.4	0.3		33	23
Vanadium	µg/g	1	18	15	19		86	86

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DATE REPORTED: 23-May-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		BH 403c-3	BH 403c-3-100	BH 405a-5		O. Reg. 153 Tbl. 2 - ICC Soil	O. Reg. 153 Tbl. 2 - RPI Soil
	Sample I.D.		B19-12919-9	B19-12919-10	B19-12919-11			
	Date Collected		10-May-19	10-May-19	10-May-19			
Parameter	**Units**	**R.L.**						
Zinc	µg/g	3	6	6	6		340	340

O. Reg. 153 - Soil, Ground Water and Sediment Standards
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SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Summary of Exceedances

Table 2 - Ind./Commercial/Community Soil Std		
BH 405a-5	Found Value	Limit
Barium (µg/g)	738	670

Table 2 - Res./Parkland/Institutional Soil Std		
BH 405a-5	Found Value	Limit
Barium (µg/g)	738	390

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
Tbl. 2 - RPI Soil - Table 2 - Res./Parkland/Institutional Soil Std

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Final Report

C.O.C.: G76172 **REPORT No. B19-12921 (i)**

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DATE RECEIVED: 13-May-19
DATE REPORTED: 17-May-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Parameter	Qty	Site Analyzed	Analyst Initials	Date Analyzed	Lab Method	Reference Method
% Moisture	3	Richmond Hill	FAL	14-May-19	A-% moisture RH	
PHC(F2-F4)	3	Kingston	KPR	16-May-19	C-PHC-S-001 (k)	CWS Tier 1
VOC's	3	Richmond Hill	FAL	14-May-19	C-VOC-02 (rh)	EPA 8260
PHC(F1)	3	Richmond Hill	FAL	14-May-19	C-VPHS-01 (rh)	CWS Tier 1

µg/g = micrograms per gram (parts per million) and is equal to mg/Kg
F1 C6-C10 hydrocarbons in µg/g, (F1-btex if requested)
F2 C10-C16 hydrocarbons in µg/g, (F2-napth if requested)
F3 C16-C34 hydrocarbons in µg/g, (F3-pah if requested)
F4 C34-C50 hydrocarbons in µg/g
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
Any deviations from the method are noted and reported for any particular sample.
nC6 and nC10 response factor is 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:
Linearity is within 15%:
All results expressed on a dry weight basis.
Unless otherwise noted all chromatograms returned to baseline by the retention time of nC50.

Unless otherwise noted all extraction, analysis, QC requirements and limits for holding time were met.
If analyzed for F4 and F4G they are not to be summed but the greater of the two numbers are to be used in application to the CWS PHC
QC will be made available upon request.

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
Tbl. 2 - RPI Soil - Table 2 - Res./Parkland/Institutional Soil Std



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SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		BH 405a-4	BH 401a-6	BH 402a-5		O. Reg. 153	
	Sample I.D.		B19-12921-1	B19-12921-2	B19-12921-3		Tbl. 2 - ICC	Tbl. 2 - RPI
	Date Collected		10-May-19	06-May-19	07-May-19		Soil	Soil
Parameter	**Units**	**R.L.**						
Acetone	µg/g	0.5	< 0.5	< 0.5	< 0.5		16	16
Benzene	µg/g	0.02	< 0.02	< 0.02	< 0.02		0.32	0.21
Bromodichloromethane	µg/g	0.02	< 0.02	< 0.02	< 0.02		1.5	1.5
Bromoform	µg/g	0.02	< 0.02	< 0.02	< 0.02		0.61	0.27
Bromomethane	µg/g	0.05	< 0.05	< 0.05	< 0.05		0.05	0.05
Carbon Tetrachloride	µg/g	0.05	< 0.05	< 0.05	< 0.05		0.21	0.05
Monochlorobenzene (Chlorobenzene)	µg/g	0.02	< 0.02	< 0.02	< 0.02		2.4	2.4
Chloroform	µg/g	0.02	< 0.02	< 0.02	< 0.02		0.47	0.05
Dibromochloromethane	µg/g	0.02	< 0.02	< 0.02	< 0.02		2.3	2.3
Dichlorobenzene,1,2-	µg/g	0.05	< 0.05	< 0.05	< 0.05		1.2	1.2
Dichlorobenzene,1,3-	µg/g	0.05	< 0.05	< 0.05	< 0.05		9.6	4.8
Dichlorobenzene,1,4-	µg/g	0.05	< 0.05	< 0.05	< 0.05		0.2	0.083
Dichlorodifluoromethane	µg/g	0.05	< 0.05	< 0.05	< 0.05		16	16
Dichloroethane,1,1-	µg/g	0.02	< 0.02	< 0.02	< 0.02		0.47	0.47
Dichloroethane,1,2-	µg/g	0.02	< 0.02	< 0.02	< 0.02		0.05	0.05
Dichloroethylene,1,1-	µg/g	0.02	< 0.02	< 0.02	< 0.02		0.064	0.05
Dichloroethene, cis-1,2-	µg/g	0.02	< 0.02	< 0.02	< 0.02		1.9	1.9
Dichloroethene, trans-1,2-	µg/g	0.02	< 0.02	< 0.02	< 0.02		1.3	0.084
Dichloropropane,1,2-	µg/g	0.02	< 0.02	< 0.02	< 0.02		0.16	0.050
Dichloropropene, cis-1,3-	µg/g	0.02	< 0.02	< 0.02	< 0.02			
Dichloropropene, trans-1,3-	µg/g	0.02	< 0.02	< 0.02	< 0.02			

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
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Christine Burke
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DATE RECEIVED: 13-May-19
DATE REPORTED: 17-May-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		BH 405a-4	BH 401a-6	BH 402a-5		O. Reg. 153	
	Sample I.D.		B19-12921-1	B19-12921-2	B19-12921-3		Tbl. 2 - ICC	Tbl. 2 - RPI
	Date Collected		10-May-19	06-May-19	07-May-19		Soil	Soil
Parameter	**Units**	**R.L.**						
Dichloropropene 1,3-cis+trans	µg/g	0.02	< 0.02	< 0.02	< 0.02		0.059	0.050
Ethylbenzene	µg/g	0.05	< 0.05	< 0.05	< 0.05		1.1	1.1
Dibromoethane,1,2-(Ethylene Dibromide)	µg/g	0.02	< 0.02	< 0.02	< 0.02		0.05	0.05
Hexane	µg/g	0.02	< 0.02	< 0.02	< 0.02		46	2.8
Methyl Ethyl Ketone	µg/g	0.5	< 0.5	< 0.5	< 0.5		70	16
Methyl Isobutyl Ketone	µg/g	0.5	< 0.5	< 0.5	< 0.5		31	1.7
Methyl-t-butyl Ether	µg/g	0.05	< 0.05	< 0.05	< 0.05		1.6	0.75
Dichloromethane (Methylene Chloride)	µg/g	0.05	< 0.05	< 0.05	< 0.05		1.6	0.10
Styrene	µg/g	0.05	< 0.05	< 0.05	< 0.05		34	0.7
Tetrachloroethane,1,1,1,2-	µg/g	0.02	< 0.02	< 0.02	< 0.02		0.087	0.058
Tetrachloroethane,1,1,2,2-	µg/g	0.05	< 0.05	< 0.05	< 0.05		0.05	0.05
Tetrachloroethylene	µg/g	0.05	< 0.05	< 0.05	< 0.05		1.9	0.28
Toluene	µg/g	0.2	< 0.2	< 0.2	< 0.2		6.4	2.3
Trichloroethane,1,1,1-	µg/g	0.02	< 0.02	< 0.02	< 0.02		6.1	0.38
Trichloroethane,1,1,2-	µg/g	0.02	< 0.02	< 0.02	< 0.02		0.05	0.05
Trichloroethylene	µg/g	0.05	< 0.05	< 0.05	< 0.05		0.55	0.061
Trichlorofluoromethane	µg/g	0.02	< 0.02	< 0.02	< 0.02		4	4.0
Vinyl Chloride	µg/g	0.02	< 0.02	< 0.02	< 0.02		0.032	0.020
Xylene, m,p-	µg/g	0.03	< 0.03	< 0.03	< 0.03			
Xylene, o-	µg/g	0.03	< 0.03	< 0.03	< 0.03			

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
Tbl. 2 - RPI Soil - Table 2 - Res./Parkland/Institutional Soil Std

Christine Burke
Lab Manager

R.L. = Reporting Limit
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Final Report

C.O.C.: G76172 **REPORT No. B19-12921 (i)**

Report To:

Azimuth Environmental
647 Welham Rd,
Barrie ON L4N9A1 Canada
Attention: Ian Acheson

Caduceon Environmental Laboratories
112 Commerce Park Drive
Barrie ON L4N 8W8
Tel: 705-252-5743
Fax: 705-252-5746

DATE RECEIVED: 13-May-19
DATE REPORTED: 17-May-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		BH 405a-4	BH 401a-6	BH 402a-5		O. Reg. 153	
	Sample I.D.		B19-12921-1	B19-12921-2	B19-12921-3		Tbl. 2 - ICC	Tbl. 2 - RPI
	Date Collected		10-May-19	06-May-19	07-May-19		Soil	Soil
Parameter	**Units**	**R.L.**						
Xylene, m,p,o-	µg/g	0.03	< 0.03	< 0.03	< 0.03		26	3.1
PHC F1 (C6-C10)	µg/g	10	< 10	< 10	< 10		55	55
PHC F2 (>C10-C16)	µg/g	5	< 5	< 5	< 5		230	98
PHC F3 (>C16-C34)	µg/g	10	< 10	< 10	< 10		1700	300
PHC F4 (>C34-C50)	µg/g	10	< 10	< 10	< 10		3300	2800
% moisture	%		19.5	21.4	19.0			

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
Tbl. 2 - RPI Soil - Table 2 - Res./Parkland/Institutional Soil Std

Christine Burke
Lab Manager

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SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Summary of Exceedances

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
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DATE REPORTED: 17-May-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Parameter	Qty	Site Analyzed	Analyst Initials	Date Analyzed	Lab Method	Reference Method
SVOC	3	Kingston	sge	16-May-19	C-NAB-S-001 (k)	EPA 8270

µg/g = micrograms per gram (parts per million) and is equal to mg/Kg
F1 C6-C10 hydrocarbons in µg/g, (F1-btex if requested)
F2 C10-C16 hydrocarbons in µg/g, (F2-napth if requested)
F3 C16-C34 hydrocarbons in µg/g, (F3-pah if requested)
F4 C34-C50 hydrocarbons in µg/g
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
Any deviations from the method are noted and reported for any particular sample.
nC6 and nC10 response factor is 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:
Linearity is within 15%:
All results expressed on a dry weight basis.
Unless otherwise noted all chromatograms returned to baseline by the retention time of nC50.

Unless otherwise noted all extraction, analysis, QC requirements and limits for holding time were met.
If analyzed for F4 and F4G they are not to be summed but the greater of the two numbers are to be used in application to the CWS PHC
QC will be made available upon request.

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
Tbl. 2 - RPI Soil - Table 2 - Res./Parkland/Institutional Soil Std



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SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		BH 405a-4	BH 401a-6	BH 402a-5		O. Reg. 153	
	Sample I.D.		B19-12921-1	B19-12921-2	B19-12921-3		Tbl. 2 - ICC	Tbl. 2 - RPI
	Date Collected		10-May-19	06-May-19	07-May-19		Soil	Soil
Parameter	**Units**	**R.L.**						
Acenaphthene	µg/g	0.05	< 0.05	< 0.05	< 0.05		21	7.9
Acenaphthylene	µg/g	0.05	< 0.05	< 0.05	< 0.05		0.15	0.15
Anthracene	µg/g	0.05	< 0.05	< 0.05	< 0.05		0.67	0.67
Benzo(a)anthracene	µg/g	0.05	< 0.05	< 0.05	< 0.05		0.96	0.50
Benzo(a)pyrene	µg/g	0.05	< 0.05	< 0.05	< 0.05		0.3	0.3
Benzo(b)fluoranthene	µg/g	0.05	< 0.05	< 0.05	< 0.05		0.96	0.78
Benzo(b+k)fluoranthene	µg/g	0.05	< 0.05	< 0.05	< 0.05			
Benzo(g,h,i)perylene	µg/g	0.05	< 0.05	< 0.05	< 0.05		9.6	6.6
Benzo(k)fluoranthene	µg/g	0.05	< 0.05	< 0.05	< 0.05		0.96	0.78
Chrysene	µg/g	0.05	< 0.05	< 0.05	< 0.05		9.6	7.0
Dibenzo(a,h)anthracene	µg/g	0.05	< 0.05	< 0.05	< 0.05		0.1	0.1
Fluoranthene	µg/g	0.05	< 0.05	< 0.05	< 0.05		9.6	0.69
Fluorene	µg/g	0.05	< 0.05	< 0.05	< 0.05		62	62
Indeno(1,2,3,-cd)pyrene	µg/g	0.05	< 0.05	< 0.05	< 0.05		0.76	0.38
Methylnaphthalene,1-	µg/g	0.05	< 0.05	< 0.05	< 0.05		30	0.99
Methylnaphthalene,2-	µg/g	0.05	< 0.05	< 0.05	< 0.05		30	0.99
Methylnaphthalene 2-(1-)	µg/g	0.05	< 0.05	< 0.05	< 0.05		30	0.99
Naphthalene	µg/g	0.05	< 0.05	< 0.05	< 0.05		9.6	0.60
Phenanthrene	µg/g	0.05	< 0.05	< 0.05	< 0.05		12	6.2
Pyrene	µg/g	0.05	< 0.05	< 0.05	< 0.05		96	78

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
Tbl. 2 - RPI Soil - Table 2 - Res./Parkland/Institutional Soil Std

Christine Burke
Lab Manager

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DATE RECEIVED: 13-May-19
DATE REPORTED: 17-May-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Summary of Exceedances

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
Tbl. 2 - RPI Soil - Table 2 - Res./Parkland/Institutional Soil Std

Christine Burke
Lab Manager

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Final Report

C.O.C.: G76174-5 **REPORT No. B19-13146 (i)**

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DATE RECEIVED: 14-May-19
DATE REPORTED: 23-May-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Parameter	Qty	Site Analyzed	Analyst Initials	Date Analyzed	Lab Method	Reference Method
Cyanide	13	Kingston	US	15-May-19	A-CN-001 (k)	SM 4500CN
Conductivity	13	Holly Lane	SYL	16-May-19	A-COND-02 (o)	SM 2510B
pH	13	Holly Lane	SYL	16-May-19	A-PH-01 (o)	SM 4500H
Chromium (VI)	13	Holly Lane	LMG	21-May-19	D-CRVI-01 (o)	MOE E3056
Mercury	13	Holly Lane	PBK	21-May-19	D-HG-02 (o)	SM 3112 B
Metals - ICP-OES	13	Holly Lane	AHM	21-May-19	D-ICP-01 (o)	SM 3120
Metals - ICP-MS	13	Holly Lane	TPR	21-May-19	D-ICPMS-01 (o)	EPA 200.8

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

Christine Burke
Lab Manager

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DATE REPORTED: 23-May-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		MW 304	MW 305	MW 308	MW 401a	O. Reg. 153	
	Sample I.D.		B19-13146-1	B19-13146-2	B19-13146-3	B19-13146-4	Tbl. 2 - PGW	
	Date Collected		13-May-19	13-May-19	13-May-19	13-May-19		
Parameter	**Units**	**R.L.**						
pH @25°C	pH Units		7.77	7.83	7.75	7.70		
Conductivity @25°C	mS/cm	0.001	2.81	2.16	2.86	2.13		
Cyanide (Free)	µg/L	5	< 5	< 5	< 5	< 5	66	
Sodium	µg/L	200	442000	260000	444000	273000	490000	
Antimony	µg/L	0.1	< 0.1	0.2	< 0.1	0.1	6	
Arsenic	µg/L	0.1	0.1	3.3	< 0.1	0.3	25	
Barium	µg/L	1	295	184	359	291	1000	
Beryllium	µg/L	0.1	< 0.1	< 0.1	< 0.1	< 0.1	4	
Boron	µg/L	5	36	31	40	35	5000	
Cadmium	µg/L	0.015	< 0.015	< 0.015	< 0.015	< 0.015	2.7	
Chromium	µg/L	2	< 2	< 2	2	< 2	50	
Chromium (VI)	µg/L	10	< 10 [1]	< 10 [1]	< 10 [1]	< 10 [1]	25	
Cobalt	µg/L	0.1	< 0.1	0.3	< 0.1	0.2	3.8	
Copper	µg/L	2	< 2	< 2	< 2	< 2	87	
Lead	µg/L	0.02	0.22	0.31	0.04	0.06	10	
Mercury	µg/L	0.02	< 0.02	0.03	< 0.02	< 0.02	0.29	
Molybdenum	µg/L	0.1	3.6	1.5	0.7	0.5	70	
Nickel	µg/L	0.2	0.5	1.2	0.5	1.0	100	
Selenium	µg/L	1	1	< 1	2	< 1	10	
Silver	µg/L	0.1	< 0.1	< 0.1	< 0.1	< 0.1	1.5	
Thallium	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	2	
Uranium	µg/L	0.05	1.52	0.97	2.20	1.57	20	
Vanadium	µg/L	0.1	0.4	0.8	0.3	0.5	6.2	
Zinc	µg/L	5	< 5	< 5	< 5	< 5	1100	

1 . Chromium (VI) result is based on total chromium

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

Christine Burke
Lab Manager

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SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		MW 401b	MW 401b-II	MW 401c	MW 402a	O. Reg. 153	
	Sample I.D.		B19-13146-5	B19-13146-6	B19-13146-7	B19-13146-8	Tbl. 2 - PGW	
	Date Collected		13-May-19	13-May-19	13-May-19	13-May-19		
Parameter	**Units**	**R.L.**						
pH @25°C	pH Units		7.67	7.66	7.73	7.73		
Conductivity @25°C	mS/cm	0.001	2.83	2.66	3.54	1.98		
Cyanide (Free)	µg/L	5	< 5	< 5	< 5	< 5	66	
Sodium	µg/L	200	433000	434000	**630000**	252000	490000	
Antimony	µg/L	0.1	< 0.1	< 0.1	< 0.1	0.1	6	
Arsenic	µg/L	0.1	0.2	0.2	0.2	0.3	25	
Barium	µg/L	1	282	284	246	267	1000	
Beryllium	µg/L	0.1	< 0.1	< 0.1	< 0.1	< 0.1	4	
Boron	µg/L	5	47	46	66	32	5000	
Cadmium	µg/L	0.015	0.021	0.017	0.018	0.018	2.7	
Chromium	µg/L	2	2	2	2	< 2	50	
Chromium (VI)	µg/L	10	< 10 [1]	< 10 [1]	< 10 [1]	< 10 [1]	25	
Cobalt	µg/L	0.1	0.3	0.4	0.3	0.2	3.8	
Copper	µg/L	2	< 2	< 2	< 2	< 2	87	
Lead	µg/L	0.02	0.33	0.13	0.11	0.10	10	
Mercury	µg/L	0.02	< 0.02	< 0.02	0.03	< 0.02	0.29	
Molybdenum	µg/L	0.1	2.5	2.4	3.4	0.7	70	
Nickel	µg/L	0.2	0.9	1.0	0.8	1.0	100	
Selenium	µg/L	1	2	2	2	< 1	10	
Silver	µg/L	0.1	< 0.1	< 0.1	< 0.1	< 0.1	1.5	
Thallium	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	2	
Uranium	µg/L	0.05	1.89	1.92	2.75	1.92	20	
Vanadium	µg/L	0.1	0.5	0.7	0.8	0.6	6.2	
Zinc	µg/L	5	< 5	< 5	< 5	< 5	1100	

1 . Chromium (VI) result is based on total chromium

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

Christine Burke
Lab Manager

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DATE REPORTED: 23-May-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		MW 402c	MW 402b	MW 403a	MW 403b	O. Reg. 153	
	Sample I.D.		B19-13146-9	B19-13146-10	B19-13146-11	B19-13146-12	Tbl. 2 - PGW	
	Date Collected		13-May-19	13-May-19	13-May-19	13-May-19		
Parameter	**Units**	**R.L.**						
pH @25°C	pH Units		7.68	7.73	7.71	8.04		
Conductivity @25°C	mS/cm	0.001	3.16	3.3	2.3	0.569		
Cyanide (Free)	µg/L	5	< 5	< 5	< 5	< 5	66	
Sodium	µg/L	200	487000	**500000**	310000	24500	490000	
Antimony	µg/L	0.1	0.1	0.2	0.1	0.1	6	
Arsenic	µg/L	0.1	0.2	0.3	0.2	0.2	25	
Barium	µg/L	1	361	337	243	431	1000	
Beryllium	µg/L	0.1	< 0.1	< 0.1	< 0.1	< 0.1	4	
Boron	µg/L	5	60	50	36	< 5	5000	
Cadmium	µg/L	0.015	0.026	0.044	< 0.015	< 0.015	2.7	
Chromium	µg/L	2	2	2	< 2	< 2	50	
Chromium (VI)	µg/L	10	< 10 [1]	< 10 [1]	< 10 [1]	< 10 [1]	25	
Cobalt	µg/L	0.1	0.2	0.3	0.3	0.1	3.8	
Copper	µg/L	2	< 2	< 2	< 2	< 2	87	
Lead	µg/L	0.02	0.25	0.64	0.05	0.15	10	
Mercury	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.29	
Molybdenum	µg/L	0.1	1.9	3.1	1.0	0.8	70	
Nickel	µg/L	0.2	1.1	1.5	1.1	0.4	100	
Selenium	µg/L	1	3	2	< 1	< 1	10	
Silver	µg/L	0.1	< 0.1	< 0.1	< 0.1	< 0.1	1.5	
Thallium	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	2	
Uranium	µg/L	0.05	2.22	2.52	1.68	0.50	20	
Vanadium	µg/L	0.1	0.6	0.4	0.4	0.3	6.2	
Zinc	µg/L	5	< 5	< 5	< 5	< 5	1100	

1 . Chromium (VI) result is based on total chromium

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

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Lab Manager

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Final Report

C.O.C.: G76174-5 **REPORT No. B19-13146 (i)**

Report To:

Azimuth Environmental
647 Welham Rd,
Barrie ON L4N9A1 Canada
Attention: Ian Acheson

Caduceon Environmental Laboratories
112 Commerce Park Drive
Barrie ON L4N 8W8
Tel: 705-252-5743
Fax: 705-252-5746

DATE RECEIVED: 14-May-19
DATE REPORTED: 23-May-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		MW 403c				O. Reg. 153	
	Sample I.D.		B19-13146-13				Tbl. 2 - PGW	
	Date Collected		13-May-19					
Parameter	**Units**	**R.L.**						
pH @25°C	pH Units		7.58					
Conductivity @25°C	mS/cm	0.001	2.93					
Cyanide (Free)	µg/L	5	< 5				66	
Sodium	µg/L	200	408000				490000	
Antimony	µg/L	0.1	< 0.1				6	
Arsenic	µg/L	0.1	0.2				25	
Barium	µg/L	1	374				1000	
Beryllium	µg/L	0.1	< 0.1				4	
Boron	µg/L	5	52				5000	
Cadmium	µg/L	0.015	0.049				2.7	
Chromium	µg/L	2	< 2				50	
Chromium (VI)	µg/L	10	< 10 [1]				25	
Cobalt	µg/L	0.1	0.7				3.8	
Copper	µg/L	2	< 2				87	
Lead	µg/L	0.02	0.19				10	
Mercury	µg/L	0.02	< 0.02				0.29	
Molybdenum	µg/L	0.1	1.5				70	
Nickel	µg/L	0.2	1.6				100	
Selenium	µg/L	1	< 1				10	
Silver	µg/L	0.1	< 0.1				1.5	
Thallium	µg/L	0.05	< 0.05				2	
Uranium	µg/L	0.05	1.79				20	
Vanadium	µg/L	0.1	0.3				6.2	
Zinc	µg/L	5	< 5				1100	

1 . Chromium (VI) result is based on total chromium

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

R.L. = Reporting Limit
Test methods may be modified from specified reference method unless indicated by an *
Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

Christine Burke
Lab Manager

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WATERWORKS NO.

Summary of Exceedances

Table 2 - Potable Ground Water

MW 401c	Found Value	Limit
Sodium (µg/L)	630000	490000
MW 402b	Found Value	Limit
Sodium (µg/L)	500000	490000

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

Christine Burke
Lab Manager

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JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
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Parameter	Qty	Site Analyzed	Analyst Initials	Date Analyzed	Lab Method	Reference Method
PHC(F2-F4)	5	Kingston	KPR	16-May-19	C-PHC-W-001 (k)	MOE E3421
VOC's	5	Richmond Hill	FAL	16-May-19	C-VOC-02 (rh)	EPA 8260
PHC(F1)	5	Richmond Hill	FAL	16-May-19	C-VPHW-01 (rh)	MOE E3421

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

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SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		MW 405a	MW 407a	MW 407b	MW 407c	O. Reg. 153	
	Sample I.D.		B19-13388-1	B19-13388-2	B19-13388-3	B19-13388-4	Tbl. 2 - PGW	
	Date Collected		14-May-19	14-May-19	14-May-19	14-May-19		
Parameter	**Units**	**R.L.**						
Acetone	µg/L	30	< 30	< 30	< 30	< 30	2700	
Benzene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	5	
Bromodichloromethane	µg/L	2	< 2	< 2	< 2	< 2	16	
Bromoform	µg/L	5	< 5	< 5	< 5	< 5	25	
Bromomethane	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.89	
Carbon Tetrachloride	µg/L	0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.79	
Monochlorobenzene (Chlorobenzene)	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	30	
Chloroform	µg/L	1	< 1	< 1	< 1	< 1	2.4	
Dibromochloromethane	µg/L	2	< 2	< 2	< 2	< 2	25	
Dichlorobenzene,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	3	
Dichlorobenzene,1,3-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	59	
Dichlorobenzene,1,4-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1	
Dichlorodifluoromethane	µg/L	2	< 2	< 2	< 2	< 2	590	
Dichloroethane,1,1-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	5	
Dichloroethane,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Dichloroethylene,1,1-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Dichloroethene, cis-1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Dichloroethene, trans-1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Dichloropropane,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	5	
Dichloropropene, cis-1,3-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5		
Dichloropropene, trans-1,3-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5		
Dichloropropene 1,3-cis+trans	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.5	

O. Reg. 153 - Soil, Ground Water and Sediment Standards
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Lab Manager

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DATE RECEIVED: 14-May-19
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SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		MW 405a	MW 407a	MW 407b	MW 407c	O. Reg. 153	
	Sample I.D.		B19-13388-1	B19-13388-2	B19-13388-3	B19-13388-4	Tbl. 2 - PGW	
	Date Collected		14-May-19	14-May-19	14-May-19	14-May-19		
Parameter	**Units**	**R.L.**						
Ethylbenzene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	2.4	
Dibromoethane,1,2-(Ethylene Dibromide)	µg/L	0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.2	
Hexane	µg/L	5	< 5	< 5	< 5	< 5	51	
Methyl Ethyl Ketone	µg/L	20	< 20	< 20	< 20	< 20	1800	
Methyl Isobutyl Ketone	µg/L	20	< 20	< 20	< 20	< 20	640	
Methyl-t-butyl Ether	µg/L	2	< 2	< 2	< 2	< 2	15	
Dichloromethane (Methylene Chloride)	µg/L	5	< 5	< 5	< 5	< 5	50	
Styrene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	5.4	
Tetrachloroethane,1,1,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.1	
Tetrachloroethane,1,1,2,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1	
Tetrachloroethylene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Toluene	µg/L	0.5	< 0.5	< 0.5	1.1	< 0.5	24	
Trichloroethane,1,1,1-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	200	
Trichloroethane,1,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	4.7	
Trichloroethylene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Trichlorofluoromethane	µg/L	5	< 5	< 5	< 5	< 5	150	
Vinyl Chloride	µg/L	0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.5	
Xylene, m,p-	µg/L	1.0	< 1.0	< 1.0	< 1.0	< 1.0		
Xylene, o-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5		
Xylene, m,p,o-	µg/L	1.1	< 1.1	< 1.1	< 1.1	< 1.1	300	
PHC F1 (C6-C10)	µg/L	50	< 50	< 50	< 50	< 50	750	

O. Reg. 153 - Soil, Ground Water and Sediment Standards
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JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D. / Sample I.D. / Date Collected		MW 405a B19-13388-1 14-May-19	MW 407a B19-13388-2 14-May-19	MW 407b B19-13388-3 14-May-19	MW 407c B19-13388-4 14-May-19	O. Reg. 153 Tbl. 2 - PGW	
Parameter	**Units**	**R.L.**						
PHC F2 (>C10-C16)	µg/L	50	< 50	< 50	< 50	< 50	150	
PHC F3 (>C16-C34)	µg/L	400	< 400	< 400	< 400	< 400	500	
PHC F4 (>C34-C50)	µg/L	400	< 400	< 400	< 400	< 400	500	

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SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.	MW 408				O. Reg. 153	
	Sample I.D.	B19-13388-5				Tbl. 2 - PGW	
	Date Collected	14-May-19					
Parameter	**Units**	**R.L.**					
Acetone	µg/L	30	< 30			2700	
Benzene	µg/L	0.5	< 0.5			5	
Bromodichloromethane	µg/L	2	< 2			16	
Bromoform	µg/L	5	< 5			25	
Bromomethane	µg/L	0.5	< 0.5			0.89	
Carbon Tetrachloride	µg/L	0.2	< 0.2			0.79	
Monochlorobenzene (Chlorobenzene)	µg/L	0.5	< 0.5			30	
Chloroform	µg/L	1	< 1			2.4	
Dibromochloromethane	µg/L	2	< 2			25	
Dichlorobenzene,1,2-	µg/L	0.5	< 0.5			3	
Dichlorobenzene,1,3-	µg/L	0.5	< 0.5			59	
Dichlorobenzene,1,4-	µg/L	0.5	< 0.5			1	
Dichlorodifluoromethane	µg/L	2	< 2			590	
Dichloroethane,1,1-	µg/L	0.5	< 0.5			5	
Dichloroethane,1,2-	µg/L	0.5	< 0.5			1.6	
Dichloroethylene,1,1-	µg/L	0.5	< 0.5			1.6	
Dichloroethene, cis-1,2-	µg/L	0.5	< 0.5			1.6	
Dichloroethene, trans-1,2-	µg/L	0.5	< 0.5			1.6	
Dichloropropane,1,2-	µg/L	0.5	< 0.5			5	
Dichloropropene, cis-1,3-	µg/L	0.5	< 0.5				
Dichloropropene, trans-1,3-	µg/L	0.5	< 0.5				
Dichloropropene 1,3-cis+trans	µg/L	0.5	< 0.5			0.5	

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

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SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		MW 408				O. Reg. 153	
	Sample I.D.		B19-13388-5				Tbl. 2 - PGW	
	Date Collected		14-May-19					
Parameter	**Units**	**R.L.**						
Ethylbenzene	µg/L	0.5	< 0.5				2.4	
Dibromoethane,1,2-(Ethylene Dibromide)	µg/L	0.2	< 0.2				0.2	
Hexane	µg/L	5	< 5				51	
Methyl Ethyl Ketone	µg/L	20	< 20				1800	
Methyl Isobutyl Ketone	µg/L	20	< 20				640	
Methyl-t-butyl Ether	µg/L	2	< 2				15	
Dichloromethane (Methylene Chloride)	µg/L	5	< 5				50	
Styrene	µg/L	0.5	< 0.5				5.4	
Tetrachloroethane,1,1,1,2-	µg/L	0.5	< 0.5				1.1	
Tetrachloroethane,1,1,2,2-	µg/L	0.5	< 0.5				1	
Tetrachloroethylene	µg/L	0.5	< 0.5				1.6	
Toluene	µg/L	0.5	< 0.5				24	
Trichloroethane,1,1,1-	µg/L	0.5	< 0.5				200	
Trichloroethane,1,1,2-	µg/L	0.5	< 0.5				4.7	
Trichloroethylene	µg/L	0.5	< 0.5				1.6	
Trichlorofluoromethane	µg/L	5	< 5				150	
Vinyl Chloride	µg/L	0.2	< 0.2				0.5	
Xylene, m,p-	µg/L	1.0	< 1.0					
Xylene, o-	µg/L	0.5	< 0.5					
Xylene, m,p,o-	µg/L	1.1	< 1.1				300	
PHC F1 (C6-C10)	µg/L	50	< 50				750	

O. Reg. 153 - Soil, Ground Water and Sediment Standards
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Lab Manager

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P.O. NUMBER: 18-175
WATERWORKS NO.

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	Sample I.D.		B19-13388-5				Tbl. 2 - PGW	
	Date Collected		14-May-19					
Parameter	**Units**	**R.L.**						
PHC F2 (>C10-C16)	µg/L	50	< 50				150	
PHC F3 (>C16-C34)	µg/L	400	< 400				500	
PHC F4 (>C34-C50)	µg/L	400	< 400				500	

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JOB/PROJECT NO.: 41 Essa
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Summary of Exceedances

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JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Parameter	Qty	Site Analyzed	Analyst Initials	Date Analyzed	Lab Method	Reference Method
SVOC	5	Kingston	sge	17-May-19	C-NAB-W-001 (k)	EPA 8270

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

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Christine Burke
Lab Manager

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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G76176 **REPORT No. B19-13388 (iii)**

Report To:

Azimuth Environmental
647 Welham Rd,
Barrie ON L4N9A1 Canada
Attention: Ian Acheson

Caduceon Environmental Laboratories
112 Commerce Park Drive
Barrie ON L4N 8W8
Tel: 705-252-5743
Fax: 705-252-5746

DATE RECEIVED: 14-May-19
DATE REPORTED: 23-May-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		MW 405a	MW 407a	MW 407b	MW 407c	O. Reg. 153	
	Sample I.D.		B19-13388-1	B19-13388-2	B19-13388-3	B19-13388-4	Tbl. 2 - PGW	
	Date Collected		14-May-19	14-May-19	14-May-19	14-May-19		
Parameter	**Units**	**R.L.**						
Acenaphthene	µg/L	0.05	< 0.3	< 0.3	< 0.06	< 0.06	4.1	
Acenaphthylene	µg/L	0.05	< 0.3	< 0.3	< 0.06	< 0.06	1	
Anthracene	µg/L	0.05	< 0.3	< 0.3	< 0.06	< 0.06	2.4	
Benzo(a)anthracene	µg/L	0.05	< 0.3	< 0.3	< 0.06	< 0.06	1	
Benzo(a)pyrene	µg/L	0.01	**< 0.06**	**< 0.06**	**0.012**	< 0.01	0.01	
Benzo(b)fluoranthene	µg/L	0.05	**< 0.3**	**< 0.3**	< 0.06	< 0.06	0.1	
Benzo(b+k)fluoranthene	µg/L	0.1	< 0.6	< 0.6	< 0.1	< 0.1		
Benzo(g,h,i)perylene	µg/L	0.05	**< 0.3**	**< 0.3**	< 0.06	< 0.06	0.2	
Benzo(k)fluoranthene	µg/L	0.05	**< 0.3**	**< 0.3**	< 0.06	< 0.06	0.1	
Chrysene	µg/L	0.05	**< 0.3**	**< 0.3**	< 0.06	< 0.06	0.1	
Dibenzo(a,h)anthracene	µg/L	0.05	**< 0.3**	**< 0.3**	< 0.06	< 0.06	0.2	
Fluoranthene	µg/L	0.05	< 0.3	< 0.3	0.13	< 0.06	0.41	
Fluorene	µg/L	0.05	< 0.3	< 0.3	< 0.06	< 0.06	120	
Indeno(1,2,3,-cd)pyrene	µg/L	0.05	**< 0.3**	**< 0.3**	< 0.06	< 0.06	0.2	
Methylnaphthalene,1-	µg/L	0.05	< 0.3	< 0.3	< 0.06	< 0.06	3.2	
Methylnaphthalene,2-	µg/L	0.08	< 0.5	< 0.5	< 0.09	< 0.09	3.2	
Methylnaphthalene 2-(1-)	µg/L	1	< 1	< 1	< 1	< 1	3.2	
Naphthalene	µg/L	0.05	< 0.3	< 0.3	0.12	< 0.06	11	
Phenanthrene	µg/L	0.05	< 0.3	< 0.3	0.08	< 0.06	1	
Pyrene	µg/L	0.05	< 0.3	< 0.3	0.06	< 0.06	4.1	

1 . Elevated RL due to sample matrix interference

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

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Lab Manager

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DATE RECEIVED: 14-May-19
DATE REPORTED: 23-May-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		MW 408				O. Reg. 153	
	Sample I.D.		B19-13388-5				Tbl. 2 - PGW	
	Date Collected		14-May-19					
Parameter	**Units**	**R.L.**						
Acenaphthene	µg/L	0.05	< 0.05				4.1	
Acenaphthylene	µg/L	0.05	< 0.05				1	
Anthracene	µg/L	0.05	< 0.05				2.4	
Benzo(a)anthracene	µg/L	0.05	< 0.05				1	
Benzo(a)pyrene	µg/L	0.01	< 0.01				0.01	
Benzo(b)fluoranthene	µg/L	0.05	< 0.05				0.1	
Benzo(b+k)fluoranthene	µg/L	0.1	< 0.1					
Benzo(g,h,i)perylene	µg/L	0.05	< 0.05				0.2	
Benzo(k)fluoranthene	µg/L	0.05	< 0.05				0.1	
Chrysene	µg/L	0.05	< 0.05				0.1	
Dibenzo(a,h)anthracene	µg/L	0.05	< 0.05				0.2	
Fluoranthene	µg/L	0.05	< 0.05				0.41	
Fluorene	µg/L	0.05	< 0.05				120	
Indeno(1,2,3,-cd)pyrene	µg/L	0.05	< 0.05				0.2	
Methylnaphthalene,1-	µg/L	0.05	< 0.05				3.2	
Methylnaphthalene,2-	µg/L	0.08	< 0.08				3.2	
Methylnaphthalene 2-(1-)	µg/L	1	< 1				3.2	
Naphthalene	µg/L	0.05	0.12				11	
Phenanthrene	µg/L	0.05	< 0.05				1	
Pyrene	µg/L	0.05	< 0.05				4.1	

1 Elevated RL due to sample matrix interference

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

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Lab Manager

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SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Summary of Exceedances

Table 2 - Potable Ground Water

MW 405a	Found Value	Limit
Indeno(1,2,3,-cd)pyrene (µg/L)	< 0.3	0.2
Dibenzo(a,h)anthracene (µg/L)	< 0.3	0.2
Chrysene (µg/L)	< 0.3	0.1
Benzo(k)fluoranthene (µg/L)	< 0.3	0.1
Benzo(g,h,i)perylene (µg/L)	< 0.3	0.2
Benzo(b)fluoranthene (µg/L)	< 0.3	0.1
Benzo(a)pyrene (µg/L)	< 0.06	0.01
MW 407a	Found Value	Limit
Indeno(1,2,3,-cd)pyrene (µg/L)	< 0.3	0.2
Dibenzo(a,h)anthracene (µg/L)	< 0.3	0.2
Chrysene (µg/L)	< 0.3	0.1
Benzo(k)fluoranthene (µg/L)	< 0.3	0.1
Benzo(g,h,i)perylene (µg/L)	< 0.3	0.2
Benzo(b)fluoranthene (µg/L)	< 0.3	0.1
Benzo(a)pyrene (µg/L)	< 0.06	0.01
MW 407b	Found Value	Limit
Benzo(a)pyrene (µg/L)	0.012	0.01

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

Christine Burke
Lab Manager

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Final Report

C.O.C.: G76174-5 **REPORT No. B19-13147 (ii)**

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DATE RECEIVED: 14-May-19
DATE REPORTED: 17-May-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Parameter	Qty	Site Analyzed	Analyst Initials	Date Analyzed	Lab Method	Reference Method
% Moisture	2	Richmond Hill	FAL	15-May-19	A-% moisture RH	
PHC(F2-F4)	2	Kingston	KPR	16-May-19	C-PHC-S-001 (k)	CWS Tier 1
VOC's	2	Richmond Hill	FAL	15-May-19	C-VOC-02 (rh)	EPA 8260
PHC(F1)	2	Richmond Hill	FAL	15-May-19	C-VPHS-01 (rh)	CWS Tier 1

µg/g = micrograms per gram (parts per million) and is equal to mg/Kg
F1 C6-C10 hydrocarbons in µg/g, (F1-btex if requested)
F2 C10-C16 hydrocarbons in µg/g, (F2-napth if requested)
F3 C16-C34 hydrocarbons in µg/g, (F3-pah if requested)
F4 C34-C50 hydrocarbons in µg/g
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
Any deviations from the method are noted and reported for any particular sample.
nC6 and nC10 response factor is 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:
Linearity is within 15%:
All results expressed on a dry weight basis.
Unless otherwise noted all chromatograms returned to baseline by the retention time of nC50.

Unless otherwise noted all extraction, analysis, QC requirements and limits for holding time were met.
If analyzed for F4 and F4G they are not to be summed but the greater of the two numbers are to be used in application to the CWS PHC
QC will be made available upon request.

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
Tbl. 2 - RPI Soil - Table 2 - Res./Parkland/Institutional Soil Std



Christine Burke
Lab Manager

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DATE REPORTED: 17-May-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		BH 407a-5	BH 408-11			O. Reg. 153	
	Sample I.D.		B19-13147-2	B19-13147-3			Tbl. 2 - ICC	Tbl. 2 - RPI
	Date Collected		13-May-19	13-May-19			Soil	Soil
Parameter	**Units**	**R.L.**						
Acetone	µg/g	0.5	< 0.5	< 0.5			16	16
Benzene	µg/g	0.02	< 0.02	< 0.02			0.32	0.21
Bromodichloromethane	µg/g	0.02	< 0.02	< 0.02			1.5	1.5
Bromoform	µg/g	0.02	< 0.02	< 0.02			0.61	0.27
Bromomethane	µg/g	0.05	< 0.05	< 0.05			0.05	0.05
Carbon Tetrachloride	µg/g	0.05	< 0.05	< 0.05			0.21	0.05
Monochlorobenzene (Chlorobenzene)	µg/g	0.02	< 0.02	< 0.02			2.4	2.4
Chloroform	µg/g	0.02	< 0.02	< 0.02			0.47	0.05
Dibromochloromethane	µg/g	0.02	< 0.02	< 0.02			2.3	2.3
Dichlorobenzene,1,2-	µg/g	0.05	< 0.05	< 0.05			1.2	1.2
Dichlorobenzene,1,3-	µg/g	0.05	< 0.05	< 0.05			9.6	4.8
Dichlorobenzene,1,4-	µg/g	0.05	< 0.05	< 0.05			0.2	0.083
Dichlorodifluoromethane	µg/g	0.05	< 0.05	< 0.05			16	16
Dichloroethane,1,1-	µg/g	0.02	< 0.02	< 0.02			0.47	0.47
Dichloroethane,1,2-	µg/g	0.02	< 0.02	< 0.02			0.05	0.05
Dichloroethylene,1,1-	µg/g	0.02	< 0.02	< 0.02			0.064	0.05
Dichloroethene, cis-1,2-	µg/g	0.02	< 0.02	< 0.02			1.9	1.9
Dichloroethene, trans-1,2-	µg/g	0.02	< 0.02	< 0.02			1.3	0.084
Dichloropropane,1,2-	µg/g	0.02	< 0.02	< 0.02			0.16	0.050
Dichloropropene, cis-1,3-	µg/g	0.02	< 0.02	< 0.02				
Dichloropropene, trans-1,3-	µg/g	0.02	< 0.02	< 0.02				

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
Tbl. 2 - RPI Soil - Table 2 - Res./Parkland/Institutional Soil Std

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JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		BH 407a-5	BH 408-11			O. Reg. 153	
	Sample I.D.		B19-13147-2	B19-13147-3			Tbl. 2 - ICC	Tbl. 2 - RPI
	Date Collected		13-May-19	13-May-19			Soil	Soil
Parameter	**Units**	**R.L.**						
Dichloropropene 1,3-cis+trans	µg/g	0.02	< 0.02	< 0.02			0.059	0.050
Ethylbenzene	µg/g	0.05	< 0.05	< 0.05			1.1	1.1
Dibromoethane,1,2-(Ethylene Dibromide)	µg/g	0.02	< 0.02	< 0.02			0.05	0.05
Hexane	µg/g	0.02	< 0.02	< 0.02			46	2.8
Methyl Ethyl Ketone	µg/g	0.5	< 0.5	< 0.5			70	16
Methyl Isobutyl Ketone	µg/g	0.5	< 0.5	< 0.5			31	1.7
Methyl-t-butyl Ether	µg/g	0.05	< 0.05	< 0.05			1.6	0.75
Dichloromethane (Methylene Chloride)	µg/g	0.05	< 0.05	< 0.05			1.6	0.10
Styrene	µg/g	0.05	< 0.05	< 0.05			34	0.7
Tetrachloroethane,1,1,1,2-	µg/g	0.02	< 0.02	< 0.02			0.087	0.058
Tetrachloroethane,1,1,2,2-	µg/g	0.05	< 0.05	< 0.05			0.05	0.05
Tetrachloroethylene	µg/g	0.05	< 0.05	< 0.05			1.9	0.28
Toluene	µg/g	0.2	< 0.2	< 0.2			6.4	2.3
Trichloroethane,1,1,1-	µg/g	0.02	< 0.02	< 0.02			6.1	0.38
Trichloroethane,1,1,2-	µg/g	0.02	< 0.02	< 0.02			0.05	0.05
Trichloroethylene	µg/g	0.05	< 0.05	< 0.05			0.55	0.061
Trichlorofluoromethane	µg/g	0.02	< 0.02	< 0.02			4	4.0
Vinyl Chloride	µg/g	0.02	< 0.02	< 0.02			0.032	0.020
Xylene, m,p-	µg/g	0.03	< 0.03	< 0.03				
Xylene, o-	µg/g	0.03	< 0.03	< 0.03				

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
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JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		BH 407a-5	BH 408-11			O. Reg. 153	
	Sample I.D.		B19-13147-2	B19-13147-3			Tbl. 2 - ICC	Tbl. 2 - RPI
	Date Collected		13-May-19	13-May-19			Soil	Soil
Parameter	**Units**	**R.L.**						
Xylene, m,p,o-	µg/g	0.03	< 0.03	< 0.03			26	3.1
PHC F1 (C6-C10)	µg/g	10	< 10	< 10			55	55
PHC F2 (>C10-C16)	µg/g	5	< 5	< 5			230	98
PHC F3 (>C16-C34)	µg/g	10	< 10	< 10			1700	300
PHC F4 (>C34-C50)	µg/g	10	< 10	< 10			3300	2800
% moisture	%		15.5	14.6				

O. Reg. 153 - Soil, Ground Water and Sediment Standards
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JOB/PROJECT NO.: 41 Essa
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WATERWORKS NO.

Summary of Exceedances

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
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SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Parameter	Qty	Site Analyzed	Analyst Initials	Date Analyzed	Lab Method	Reference Method
SVOC	2	Kingston	sge	17-May-19	C-NAB-S-001 (k)	EPA 8270

µg/g = micrograms per gram (parts per million) and is equal to mg/Kg
F1 C6-C10 hydrocarbons in µg/g, (F1-btex if requested)
F2 C10-C16 hydrocarbons in µg/g, (F2-napth if requested)
F3 C16-C34 hydrocarbons in µg/g, (F3-pah if requested)
F4 C34-C50 hydrocarbons in µg/g
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
Any deviations from the method are noted and reported for any particular sample.
nC6 and nC10 response factor is 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:
Linearity is within 15%:
All results expressed on a dry weight basis.
Unless otherwise noted all chromatograms returned to baseline by the retention time of nC50.

Unless otherwise noted all extraction, analysis, QC requirements and limits for holding time were met.
If analyzed for F4 and F4G they are not to be summed but the greater of the two numbers are to be used in application to the CWS PHC
QC will be made available upon request.

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
Tbl. 2 - RPI Soil - Table 2 - Res./Parkland/Institutional Soil Std



Christine Burke
Lab Manager

R.L. = Reporting Limit
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Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G76174-5 **REPORT No. B19-13147 (iii)**

Report To:

Azimuth Environmental
647 Welham Rd,
Barrie ON L4N9A1 Canada
Attention: Ian Acheson

Caduceon Environmental Laboratories
112 Commerce Park Drive
Barrie ON L4N 8W8
Tel: 705-252-5743
Fax: 705-252-5746

DATE RECEIVED: 14-May-19
DATE REPORTED: 17-May-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		BH 407a-5	BH 408-11			O. Reg. 153	
	Sample I.D.		B19-13147-2	B19-13147-3			Tbl. 2 - ICC	Tbl. 2 - RPI
	Date Collected		13-May-19	13-May-19			Soil	Soil
Parameter	**Units**	**R.L.**						
Acenaphthene	µg/g	0.05	< 0.05	< 0.05			21	7.9
Acenaphthylene	µg/g	0.05	< 0.05	< 0.05			0.15	0.15
Anthracene	µg/g	0.05	< 0.05	< 0.05			0.67	0.67
Benzo(a)anthracene	µg/g	0.05	< 0.05	< 0.05			0.96	0.50
Benzo(a)pyrene	µg/g	0.05	< 0.05	< 0.05			0.3	0.3
Benzo(b)fluoranthene	µg/g	0.05	< 0.05	< 0.05			0.96	0.78
Benzo(b+k)fluoranthene	µg/g	0.05	< 0.05	< 0.05				
Benzo(g,h,i)perylene	µg/g	0.05	< 0.05	< 0.05			9.6	6.6
Benzo(k)fluoranthene	µg/g	0.05	< 0.05	< 0.05			0.96	0.78
Chrysene	µg/g	0.05	< 0.05	< 0.05			9.6	7.0
Dibenzo(a,h)anthracene	µg/g	0.05	< 0.05	< 0.05			0.1	0.1
Fluoranthene	µg/g	0.05	< 0.05	< 0.05			9.6	0.69
Fluorene	µg/g	0.05	< 0.05	< 0.05			62	62
Indeno(1,2,3,-cd)pyrene	µg/g	0.05	< 0.05	< 0.05			0.76	0.38
Methylnaphthalene,1-	µg/g	0.05	< 0.05	< 0.05			30	0.99
Methylnaphthalene,2-	µg/g	0.05	< 0.05	< 0.05			30	0.99
Methylnaphthalene 2-(1-)	µg/g	0.05	< 0.05	< 0.05			30	0.99
Naphthalene	µg/g	0.05	< 0.05	< 0.05			9.6	0.60
Phenanthrene	µg/g	0.05	< 0.05	< 0.05			12	6.2
Pyrene	µg/g	0.05	< 0.05	< 0.05			96	78

O. Reg. 153 - Soil, Ground Water and Sediment Standards
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DATE RECEIVED: 14-May-19
DATE REPORTED: 17-May-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Summary of Exceedances

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
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Final Report

C.O.C.: G76176 **REPORT No. B19-13378 (i)**

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Tel: 705-252-5743
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DATE RECEIVED: 14-May-19
DATE REPORTED: 23-May-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Parameter	Qty	Site Analyzed	Analyst Initials	Date Analyzed	Lab Method	Reference Method
Cyanide	2	Kingston	US	21-May-19	A-CN s K	in house
Conductivity	2	Richmond Hill	ABL	21-May-19	A-COND-02 s RH	MOEE3530
pH	2	Richmond Hill	ABL	16-May-19	A-pH-02 (rh)	MOEE3530
Chromium (VI)	2	Holly Lane	LMG	21-May-19	D-CRVI-02 (o)	EPA7196A
Mercury	2	Holly Lane	PBK	22-May-19	D-HG-01 (o)	EPA 7471A
Boron - HWS	2	Holly Lane	AHM	22-May-19	D-HWE s	MOE3470
Sodium Adsorption Ratio	2	Holly Lane	AHM	22-May-19	D-ICP-01 SAR (o)	SM 3120
Metals - ICP-OES	2	Holly Lane	AHM	21-May-19	D-ICP-02 (o)	EPA 6010
Metals - ICP-MS	2	Holly Lane	TPR	21-May-19	D-ICPMS-01 (o)	EPA 6020

µg/g = micrograms per gram (parts per million) and is equal to mg/Kg
F1 C6-C10 hydrocarbons in µg/g, (F1-btex if requested)
F2 C10-C16 hydrocarbons in µg/g, (F2-napth if requested)
F3 C16-C34 hydrocarbons in µg/g, (F3-pah if requested)
F4 C34-C50 hydrocarbons in µg/g
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
Any deviations from the method are noted and reported for any particular sample.
nC6 and nC10 response factor is 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:
Linearity is within 15%:
All results expressed on a dry weight basis.
Unless otherwise noted all chromatograms returned to baseline by the retention time of nC50.

Unless otherwise noted all extraction, analysis, QC requirements and limits for holding time were met.
If analyzed for F4 and F4G they are not to be summed but the greater of the two numbers are to be used in application to the CWS PHC
QC will be made available upon request.

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
Tbl. 2 - RPI Soil - Table 2 - Res./Parkland/Institutional Soil Std



Christine Burke
Lab Manager

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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G76176 **REPORT No. B19-13378 (i)**

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647 Welham Rd,
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Attention: Ian Acheson

Caduceon Environmental Laboratories
112 Commerce Park Drive
Barrie ON L4N 8W8
Tel: 705-252-5743
Fax: 705-252-5746

DATE RECEIVED: 14-May-19
DATE REPORTED: 23-May-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		BH 407b-2	BH 407c-3			O. Reg. 153	
	Sample I.D.		B19-13378-1	B19-13378-4			Tbl. 2 - ICC	Tbl. 2 - RPI
	Date Collected		14-May-19	14-May-19			Soil	Soil
Parameter	**Units**	**R.L.**						
pH @25°C	pH Units		7.84	7.84				
Conductivity @25°C	mS/cm	0.07	0.12	0.15			1.4	0.7
Cyanide (Free)	µg/g	0.05	< 0.05	< 0.05			0.051	0.051
Sodium Adsorption Ratio	units		0.781	1.50			12	5
Antimony	µg/g	0.5	< 0.5	< 0.5			40	7.5
Arsenic	µg/g	0.5	0.6	0.5			18	18
Barium	µg/g	1	16	27			670	390
Beryllium	µg/g	0.2	< 0.2	< 0.2			8	4
Boron	µg/g	0.5	1.2	1.4			120	120
Boron (HWS)	µg/g	0.02	0.07	0.06			2	1.5
Cadmium	µg/g	0.5	< 0.5	< 0.5			1.9	1.2
Chromium	µg/g	1	12	11			160	160
Chromium (VI)	µg/g	0.2	< 0.2	< 0.2			8	8
Cobalt	µg/g	1	3	2			80	22
Copper	µg/g	1	2	3			230	140
Lead	µg/g	5	< 5	< 5			120	120
Mercury	µg/g	0.005	< 0.005	< 0.005			3.9	0.27
Molybdenum	µg/g	1	< 1	< 1			40	6.9
Nickel	µg/g	1	4	4			270	100
Selenium	µg/g	0.5	< 0.5	< 0.5			5.5	2.4
Silver	µg/g	0.2	< 0.2	< 0.2			40	20
Thallium	µg/g	0.1	< 0.1	< 0.1			3.3	1
Uranium	µg/g	0.1	0.3	0.3			33	23
Vanadium	µg/g	1	42	34			86	86

O. Reg. 153 - Soil, Ground Water and Sediment Standards
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Christine Burke
Lab Manager

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SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		BH 407b-2	BH 407c-3			O. Reg. 153	
	Sample I.D.		B19-13378-1	B19-13378-4			Tbl. 2 - ICC	Tbl. 2 - RPI
	Date Collected		14-May-19	14-May-19			Soil	Soil
Parameter	**Units**	**R.L.**						
Zinc	µg/g	3	9	8			340	340

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
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DATE REPORTED: 23-May-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Summary of Exceedances

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
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Final Report

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DATE REPORTED: 23-May-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Parameter	Qty	Site Analyzed	Analyst Initials	Date Analyzed	Lab Method	Reference Method
% Moisture	2	Richmond Hill	FAL	16-May-19	A-% moisture RH	
PHC(F2-F4)	2	Kingston	KPR	17-May-19	C-PHC-S-001 (k)	CWS Tier 1
VOC's	2	Richmond Hill	FAL	16-May-19	C-VOC-02 (rh)	EPA 8260
PHC(F1)	2	Richmond Hill	FAL	16-May-19	C-VPHS-01 (rh)	CWS Tier 1

µg/g = micrograms per gram (parts per million) and is equal to mg/Kg
F1 C6-C10 hydrocarbons in µg/g, (F1-btex if requested)
F2 C10-C16 hydrocarbons in µg/g, (F2-napth if requested)
F3 C16-C34 hydrocarbons in µg/g, (F3-pah if requested)
F4 C34-C50 hydrocarbons in µg/g
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
Any deviations from the method are noted and reported for any particular sample.
nC6 and nC10 response factor is 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:
Linearity is within 15%:
All results expressed on a dry weight basis.
Unless otherwise noted all chromatograms returned to baseline by the retention time of nC50.

Unless otherwise noted all extraction, analysis, QC requirements and limits for holding time were met.
If analyzed for F4 and F4G they are not to be summed but the greater of the two numbers are to be used in application to the CWS PHC
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SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		BH 407c-2	BH 407b-3			O. Reg. 153	
	Sample I.D.		B19-13378-2	B19-13378-3			Tbl. 2 - ICC	Tbl. 2 - RPI
	Date Collected		14-May-19	14-May-19			Soil	Soil
Parameter	**Units**	**R.L.**						
Acetone	µg/g	0.5	< 0.5	< 0.5			16	16
Benzene	µg/g	0.02	< 0.02	< 0.02			0.32	0.21
Bromodichloromethane	µg/g	0.02	< 0.02	< 0.02			1.5	1.5
Bromoform	µg/g	0.02	< 0.02	< 0.02			0.61	0.27
Bromomethane	µg/g	0.05	< 0.05	< 0.05			0.05	0.05
Carbon Tetrachloride	µg/g	0.05	< 0.05	< 0.05			0.21	0.05
Monochlorobenzene (Chlorobenzene)	µg/g	0.02	< 0.02	< 0.02			2.4	2.4
Chloroform	µg/g	0.02	< 0.02	< 0.02			0.47	0.05
Dibromochloromethane	µg/g	0.02	< 0.02	< 0.02			2.3	2.3
Dichlorobenzene,1,2-	µg/g	0.05	< 0.05	< 0.05			1.2	1.2
Dichlorobenzene,1,3-	µg/g	0.05	< 0.05	< 0.05			9.6	4.8
Dichlorobenzene,1,4-	µg/g	0.05	< 0.05	< 0.05			0.2	0.083
Dichlorodifluoromethane	µg/g	0.05	< 0.05	< 0.05			16	16
Dichloroethane,1,1-	µg/g	0.02	< 0.02	< 0.02			0.47	0.47
Dichloroethane,1,2-	µg/g	0.02	< 0.02	< 0.02			0.05	0.05
Dichloroethylene,1,1-	µg/g	0.02	< 0.02	< 0.02			0.064	0.05
Dichloroethene, cis-1,2-	µg/g	0.02	< 0.02	< 0.02			1.9	1.9
Dichloroethene, trans-1,2-	µg/g	0.02	< 0.02	< 0.02			1.3	0.084
Dichloropropane,1,2-	µg/g	0.02	< 0.02	< 0.02			0.16	0.050
Dichloropropene, cis-1,3-	µg/g	0.02	< 0.02	< 0.02				
Dichloropropene, trans-1,3-	µg/g	0.02	< 0.02	< 0.02				

O. Reg. 153 - Soil, Ground Water and Sediment Standards
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SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		BH 407c-2	BH 407b-3			O. Reg. 153	
	Sample I.D.		B19-13378-2	B19-13378-3			Tbl. 2 - ICC	Tbl. 2 - RPI
	Date Collected		14-May-19	14-May-19			Soil	Soil
Parameter	**Units**	**R.L.**						
Dichloropropene 1,3-cis+trans	µg/g	0.02	< 0.02	< 0.02			0.059	0.050
Ethylbenzene	µg/g	0.05	< 0.05	< 0.05			1.1	1.1
Dibromoethane,1,2-(Ethylene Dibromide)	µg/g	0.02	< 0.02	< 0.02			0.05	0.05
Hexane	µg/g	0.02	< 0.02	< 0.02			46	2.8
Methyl Ethyl Ketone	µg/g	0.5	< 0.5	< 0.5			70	16
Methyl Isobutyl Ketone	µg/g	0.5	< 0.5	< 0.5			31	1.7
Methyl-t-butyl Ether	µg/g	0.05	< 0.05	< 0.05			1.6	0.75
Dichloromethane (Methylene Chloride)	µg/g	0.05	< 0.05	< 0.05			1.6	0.10
Styrene	µg/g	0.05	< 0.05	< 0.05			34	0.7
Tetrachloroethane,1,1,1,2-	µg/g	0.02	< 0.02	< 0.02			0.087	0.058
Tetrachloroethane,1,1,2,2-	µg/g	0.05	< 0.05	< 0.05			0.05	0.05
Tetrachloroethylene	µg/g	0.05	< 0.05	< 0.05			1.9	0.28
Toluene	µg/g	0.2	< 0.2	< 0.2			6.4	2.3
Trichloroethane,1,1,1-	µg/g	0.02	< 0.02	< 0.02			6.1	0.38
Trichloroethane,1,1,2-	µg/g	0.02	< 0.02	< 0.02			0.05	0.05
Trichloroethylene	µg/g	0.05	< 0.05	< 0.05			0.55	0.061
Trichlorofluoromethane	µg/g	0.02	< 0.02	< 0.02			4	4.0
Vinyl Chloride	µg/g	0.02	< 0.02	< 0.02			0.032	0.020
Xylene, m,p-	µg/g	0.03	< 0.03	< 0.03				
Xylene, o-	µg/g	0.03	< 0.03	< 0.03				

O. Reg. 153 - Soil, Ground Water and Sediment Standards
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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G76176 **REPORT No. B19-13378 (ii)**

Report To:

Azimuth Environmental
647 Welham Rd,
Barrie ON L4N9A1 Canada
Attention: Ian Acheson

Caduceon Environmental Laboratories
112 Commerce Park Drive
Barrie ON L4N 8W8
Tel: 705-252-5743
Fax: 705-252-5746

DATE RECEIVED: 14-May-19
DATE REPORTED: 23-May-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		BH 407c-2	BH 407b-3			O. Reg. 153	
	Sample I.D.		B19-13378-2	B19-13378-3			Tbl. 2 - ICC	Tbl. 2 - RPI
	Date Collected		14-May-19	14-May-19			Soil	Soil
Parameter	**Units**	**R.L.**						
Xylene, m,p,o-	µg/g	0.03	< 0.03	< 0.03			26	3.1
PHC F1 (C6-C10)	µg/g	10	< 10	< 10			55	55
PHC F2 (>C10-C16)	µg/g	5	< 5	< 6			230	98
PHC F3 (>C16-C34)	µg/g	10	< 10	< 10			1700	300
PHC F4 (>C34-C50)	µg/g	10	< 10	< 10			3300	2800
% moisture	%		21.5	21.0				

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
Tbl. 2 - RPI Soil - Table 2 - Res./Parkland/Institutional Soil Std

Christine Burke
Lab Manager

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SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Summary of Exceedances

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
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SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Parameter	Qty	Site Analyzed	Analyst Initials	Date Analyzed	Lab Method	Reference Method
SVOC	2	Kingston	sge	17-May-19	C-NAB-S-001 (k)	EPA 8270

µg/g = micrograms per gram (parts per million) and is equal to mg/Kg
F1 C6-C10 hydrocarbons in µg/g, (F1-btex if requested)
F2 C10-C16 hydrocarbons in µg/g, (F2-napth if requested)
F3 C16-C34 hydrocarbons in µg/g, (F3-pah if requested)
F4 C34-C50 hydrocarbons in µg/g
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
Any deviations from the method are noted and reported for any particular sample.
nC6 and nC10 response factor is 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:
Linearity is within 15%:
All results expressed on a dry weight basis.
Unless otherwise noted all chromatograms returned to baseline by the retention time of nC50.

Unless otherwise noted all extraction, analysis, QC requirements and limits for holding time were met.
If analyzed for F4 and F4G they are not to be summed but the greater of the two numbers are to be used in application to the CWS PHC
QC will be made available upon request.

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
Tbl. 2 - RPI Soil - Table 2 - Res./Parkland/Institutional Soil Std

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SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		BH 407c-2	BH 407b-3			O. Reg. 153	
	Sample I.D.		B19-13378-2	B19-13378-3			Tbl. 2 - ICC	Tbl. 2 - RPI
	Date Collected		14-May-19	14-May-19			Soil	Soil
Parameter	**Units**	**R.L.**						
Acenaphthene	µg/g	0.05	< 0.05	< 0.05			21	7.9
Acenaphthylene	µg/g	0.05	< 0.05	< 0.05			0.15	0.15
Anthracene	µg/g	0.05	< 0.05	< 0.05			0.67	0.67
Benzo(a)anthracene	µg/g	0.05	< 0.05	< 0.05			0.96	0.50
Benzo(a)pyrene	µg/g	0.05	< 0.05	< 0.05			0.3	0.3
Benzo(b)fluoranthene	µg/g	0.05	< 0.05	< 0.05			0.96	0.78
Benzo(b+k)fluoranthene	µg/g	0.05	< 0.05	< 0.05				
Benzo(g,h,i)perylene	µg/g	0.05	< 0.05	< 0.05			9.6	6.6
Benzo(k)fluoranthene	µg/g	0.05	< 0.05	< 0.05			0.96	0.78
Chrysene	µg/g	0.05	< 0.05	< 0.05			9.6	7.0
Dibenzo(a,h)anthracene	µg/g	0.05	< 0.05	< 0.05			0.1	0.1
Fluoranthene	µg/g	0.05	< 0.05	< 0.05			9.6	0.69
Fluorene	µg/g	0.05	< 0.05	< 0.05			62	62
Indeno(1,2,3,-cd)pyrene	µg/g	0.05	< 0.05	< 0.05			0.76	0.38
Methylnaphthalene,1-	µg/g	0.05	< 0.05	< 0.05			30	0.99
Methylnaphthalene,2-	µg/g	0.05	< 0.05	< 0.05			30	0.99
Methylnaphthalene 2-(1-)	µg/g	0.05	< 0.05	< 0.05			30	0.99
Naphthalene	µg/g	0.05	< 0.05	< 0.05			9.6	0.60
Phenanthrene	µg/g	0.05	< 0.05	< 0.05			12	6.2
Pyrene	µg/g	0.05	< 0.05	< 0.05			96	78

O. Reg. 153 - Soil, Ground Water and Sediment Standards
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Lab Manager

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SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Summary of Exceedances

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
Tbl. 2 - RPI Soil - Table 2 - Res./Parkland/Institutional Soil Std

Christine Burke
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SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Parameter	Qty	Site Analyzed	Analyst Initials	Date Analyzed	Lab Method	Reference Method
Cyanide	5	Kingston	US	16-May-19	A-CN-001 (k)	SM 4500CN
Conductivity	5	Holly Lane	SYL	16-May-19	A-COND-02 (o)	SM 2510B
pH	5	Holly Lane	SYL	16-May-19	A-PH-01 (o)	SM 4500H
Chromium (VI)	5	Holly Lane	LMG	23-May-19	D-CRVI-01 (o)	MOE E3056
Mercury	5	Holly Lane	PBK	21-May-19	D-HG-02 (o)	SM 3112 B
Metals - ICP-OES	5	Holly Lane	AHM	21-May-19	D-ICP-01 (o)	SM 3120
Metals - ICP-MS	5	Holly Lane	TPR	21-May-19	D-ICPMS-01 (o)	EPA 200.8

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

Christine Burke
Lab Manager

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SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		MW 405a	MW 407a	MW 407b	MW 407c	O. Reg. 153	
	Sample I.D.		B19-13388-1	B19-13388-2	B19-13388-3	B19-13388-4	Tbl. 2 - PGW	
	Date Collected		14-May-19	14-May-19	14-May-19	14-May-19		
Parameter	**Units**	**R.L.**						
pH @25°C	pH Units		8.01	8.14	8.16	8.51		
Conductivity @25°C	mS/cm	0.001	2.11	1.73	1.54	1.28		
Cyanide (Free)	µg/L	5	< 5	< 5	< 5	< 5	66	
Sodium	µg/L	200	258000	302000	272000	281000	490000	
Antimony	µg/L	0.1	0.1	0.5	0.5	0.3	6	
Arsenic	µg/L	0.1	0.4	0.5	0.3	1.0	25	
Barium	µg/L	1	413	110	152	84	1000	
Beryllium	µg/L	0.1	< 0.1	< 0.1	< 0.1	< 0.1	4	
Boron	µg/L	5	44	48	42	45	5000	
Cadmium	µg/L	0.015	0.020	0.035	0.050	0.017	2.7	
Chromium	µg/L	2	4	< 2	< 2	5	50	
Chromium (VI)	µg/L	10	< 10 [1]	< 10 [1]	< 10 [1]	< 10 [1]	25	
Cobalt	µg/L	0.1	1.6	0.5	0.5	0.2	3.8	
Copper	µg/L	2	< 2	< 2	< 2	< 2	87	
Lead	µg/L	0.02	1.20	0.20	0.04	0.15	10	
Mercury	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.29	
Molybdenum	µg/L	0.1	0.7	7.0	6.5	7.3	70	
Nickel	µg/L	0.2	3.6	2.5	2.3	0.8	100	
Selenium	µg/L	1	1	2	2	2	10	
Silver	µg/L	0.1	< 0.1	< 0.1	< 0.1	< 0.1	1.5	
Thallium	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	2	
Uranium	µg/L	0.05	3.50	4.18	3.37	2.69	20	
Vanadium	µg/L	5	< 5	< 5	< 5	< 5	6.2	
Zinc	µg/L	5	9	< 5	< 5	< 5	1100	

1 . Chromium (VI) result is based on total chromium

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

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Lab Manager

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SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		MW 408				O. Reg. 153 Tbl. 2 - PGW	
	Sample I.D.		B19-13388-5					
	Date Collected		14-May-19					
Parameter	**Units**	**R.L.**						
pH @25°C	pH Units		8.12					
Conductivity @25°C	mS/cm	0.001	1.77					
Cyanide (Free)	µg/L	5	< 5				66	
Sodium	µg/L	200	294000				490000	
Antimony	µg/L	0.1	0.2				6	
Arsenic	µg/L	0.1	0.4				25	
Barium	µg/L	1	77				1000	
Beryllium	µg/L	0.1	< 0.1				4	
Boron	µg/L	5	54				5000	
Cadmium	µg/L	0.015	0.056				2.7	
Chromium	µg/L	2	< 2				50	
Chromium (VI)	µg/L	10	< 10 [1]				25	
Cobalt	µg/L	0.1	0.9				3.8	
Copper	µg/L	2	< 2				87	
Lead	µg/L	0.02	0.04				10	
Mercury	µg/L	0.02	< 0.02				0.29	
Molybdenum	µg/L	0.1	6.6				70	
Nickel	µg/L	0.2	4.7				100	
Selenium	µg/L	1	3				10	
Silver	µg/L	0.1	< 0.1				1.5	
Thallium	µg/L	0.05	< 0.05				2	
Uranium	µg/L	0.05	4.12				20	
Vanadium	µg/L	5	< 5				6.2	
Zinc	µg/L	5	< 5				1100	

1 . Chromium (VI) result is based on total chromium

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

Christine Burke
Lab Manager

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SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Summary of Exceedances

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

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DATE REPORTED: 23-May-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Parameter	Qty	Site Analyzed	Analyst Initials	Date Analyzed	Lab Method	Reference Method
SVOC	1	Kingston	sge	17-May-19	C-NAB-W-001 (k)	EPA 8270

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

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DATE REPORTED: 23-May-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		MW 401c				O. Reg. 153	
	Sample I.D.		B19-13525-1				Tbl. 2 - PGW	
	Date Collected		15-May-19					
Parameter	**Units**	**R.L.**						
Acenaphthene	µg/L	0.05	< 0.05				4.1	
Acenaphthylene	µg/L	0.05	< 0.05				1	
Anthracene	µg/L	0.05	< 0.05				2.4	
Benzo(a)anthracene	µg/L	0.05	< 0.05				1	
Benzo(a)pyrene	µg/L	0.01	< 0.01				0.01	
Benzo(b)fluoranthene	µg/L	0.05	< 0.05				0.1	
Benzo(b+k)fluoranthene	µg/L	0.1	< 0.1					
Benzo(g,h,i)perylene	µg/L	0.05	< 0.05				0.2	
Benzo(k)fluoranthene	µg/L	0.05	< 0.05				0.1	
Chrysene	µg/L	0.05	< 0.05				0.1	
Dibenzo(a,h)anthracene	µg/L	0.05	< 0.05				0.2	
Fluoranthene	µg/L	0.05	< 0.05				0.41	
Fluorene	µg/L	0.05	< 0.05				120	
Indeno(1,2,3,-cd)pyrene	µg/L	0.05	< 0.05				0.2	
Methylnaphthalene,1-	µg/L	0.05	< 0.05				3.2	
Methylnaphthalene,2-	µg/L	0.08	< 0.08				3.2	
Methylnaphthalene 2-(1-)	µg/L	1	< 1				3.2	
Naphthalene	µg/L	0.05	< 0.05				11	
Phenanthrene	µg/L	0.05	< 0.05				1	
Pyrene	µg/L	0.05	< 0.05				4.1	

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

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DATE REPORTED: 23-May-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Summary of Exceedances

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

R.L. = Reporting Limit
Test methods may be modified from specified reference method unless indicated by an *
Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

Christine Burke
Lab Manager

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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G75707-8 **REPORT No. B19-16616 (i)**

Report To:

Azimuth Environmental
642 Welham Rd,
Barrie ON L4N9A1 Canada
Attention: Ian Acheson

Caduceon Environmental Laboratories
112 Commerce Park Drive
Barrie ON L4N 8W8
Tel: 705-252-5743
Fax: 705-252-5746

DATE RECEIVED: 07-Jun-19
DATE REPORTED: 19-Jun-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Parameter	Qty	Site Analyzed	Analyst Initials	Date Analyzed	Lab Method	Reference Method
Cyanide	7	Kingston	US	13-Jun-19	A-CN s K	in house
Conductivity	7	Richmond Hill	ABL	13-Jun-19	A-COND-02 s RH	MOEE3530
pH	7	Richmond Hill	ABL	13-Jun-19	A-pH-02 (rh)	MOEE3530
Chromium (VI)	7	Holly Lane	VK	12-Jun-19	D-CRVI-02 (o)	EPA7196A
Mercury	7	Holly Lane	PBK	18-Jun-19	D-HG-01 (o)	EPA 7471A
Boron - HWS	7	Holly Lane	AHM	19-Jun-19	D-HWE s	MOE3470
Sodium Adsorption Ratio	7	Holly Lane	AHM	18-Jun-19	D-ICP-01 SAR (o)	SM 3120
Metals - ICP-OES	7	Holly Lane	AHM	17-Jun-19	D-ICP-02 (o)	EPA 6010
Metals - ICP-MS	7	Holly Lane	TPR	18-Jun-19	D-ICPMS-01 (o)	EPA 6020

µg/g = micrograms per gram (parts per million) and is equal to mg/Kg
F1 C6-C10 hydrocarbons in µg/g, (F1-btex if requested)
F2 C10-C16 hydrocarbons in µg/g, (F2-napth if requested)
F3 C16-C34 hydrocarbons in µg/g, (F3-pah if requested)
F4 C34-C50 hydrocarbons in µg/g
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
Any deviations from the method are noted and reported for any particular sample.
nC6 and nC10 response factor is 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:
Linearity is within 15%:
All results expressed on a dry weight basis.
Unless otherwise noted all chromatograms returned to baseline by the retention time of nC50.

Unless otherwise noted all extraction, analysis, QC requirements and limits for holding time were met.
If analyzed for F4 and F4G they are not to be summed but the greater of the two numbers are to be used in application to the CWS PHC
QC will be made available upon request.

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
Tbl. 2 - RPI Soil - Table 2 - Res./Parkland/Institutional Soil Std



Christine Burke
Lab Manager

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DATE RECEIVED: 07-Jun-19
DATE REPORTED: 19-Jun-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		BH 406a-4	BH 406b-4	BH 406c-5	BH 406c-5-1	O. Reg. 153	
	Sample I.D.		B19-16616-1	B19-16616-3	B19-16616-6	B19-16616-7	Tbl. 2 - ICC	Tbl. 2 - RPI
	Date Collected		06-Jun-19	06-Jun-19	06-Jun-19	06-Jun-19	Soil	Soil
Parameter	**Units**	**R.L.**						
pH @25°C	pH Units		8.02	7.83	7.84	7.77		
Conductivity @25°C	mS/cm	0.07	0.11	0.12	0.12	0.12	1.4	0.7
Cyanide (Free)	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.051	0.051
Sodium Adsorption Ratio	units		0.569	0.647	0.562	0.503	12	5
Antimony	µg/g	0.5	< 0.5	< 0.5	< 0.5	< 0.5	40	7.5
Arsenic	µg/g	0.5	0.6	0.5	0.6	0.7	18	18
Barium	µg/g	1	14	11	10	13	670	390
Beryllium	µg/g	0.2	< 0.2	< 0.2	< 0.2	< 0.2	8	4
Boron	µg/g	0.5	2.6	2.1	1.3	3.4	120	120
Boron (HWS)	µg/g	0.02	0.03	0.21	0.19	0.12	2	1.5
Cadmium	µg/g	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.9	1.2
Chromium	µg/g	1	10	9	10	9	160	160
Chromium (VI)	µg/g	0.2	< 0.2	< 0.2	< 0.2	< 0.2	8	8
Cobalt	µg/g	1	3	2	3	3	80	22
Copper	µg/g	1	4	2	2	4	230	140
Lead	µg/g	5	< 5	< 5	< 5	< 5	120	120
Mercury	µg/g	0.005	< 0.005	< 0.005	< 0.005	< 0.005	3.9	0.27
Molybdenum	µg/g	1	< 1	< 1	< 1	< 1	40	6.9
Nickel	µg/g	1	5	4	4	5	270	100
Selenium	µg/g	0.5	< 0.5	< 0.5	< 0.5	< 0.5	5.5	2.4
Silver	µg/g	0.2	< 0.2	< 0.2	< 0.2	< 0.2	40	20
Thallium	µg/g	0.1	< 0.1	< 0.1	< 0.1	< 0.1	3.3	1
Uranium	µg/g	0.1	0.3	0.3	0.3	0.3	33	23
Vanadium	µg/g	1	23	26	33	22	86	86

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
Tbl. 2 - RPI Soil - Table 2 - Res./Parkland/Institutional Soil Std



Christine Burke
Lab Manager

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Fax: 705-252-5746

DATE RECEIVED: 07-Jun-19
DATE REPORTED: 19-Jun-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		BH 406a-4	BH 406b-4	BH 406c-5	BH 406c-5-1	O. Reg. 153	
	Sample I.D.		B19-16616-1	B19-16616-3	B19-16616-6	B19-16616-7	Tbl. 2 - ICC	Tbl. 2 - RPI
	Date Collected		06-Jun-19	06-Jun-19	06-Jun-19	06-Jun-19	Soil	Soil
Parameter	**Units**	**R.L.**						
Zinc	µg/g	3	12	9	9	11	340	340

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
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DATE RECEIVED: 07-Jun-19
DATE REPORTED: 19-Jun-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		BH 404a-4	BH 404b-4	BH 404c-2		O. Reg. 153	
	Sample I.D.		B19-16616-8	B19-16616-10	B19-16616-13		Tbl. 2 - ICC	Tbl. 2 - RPI
	Date Collected		06-Jun-19	06-Jun-19	06-Jun-19		Soil	Soil
Parameter	**Units**	**R.L.**						
pH @25°C	pH Units		8.00	7.89	7.47			
Conductivity @25°C	mS/cm	0.07	0.15	0.12	0.19		1.4	0.7
Cyanide (Free)	µg/g	0.05	< 0.05	< 0.05	**0.50**		0.051	0.051
Sodium Adsorption Ratio	units		0.581	0.579	0.305		12	5
Antimony	µg/g	0.5	< 0.5	< 0.5	< 0.5		40	7.5
Arsenic	µg/g	0.5	0.5	0.5	1.4		18	18
Barium	µg/g	1	14	14	30		670	390
Beryllium	µg/g	0.2	< 0.2	< 0.2	0.2		8	4
Boron	µg/g	0.5	2.6	2.2	5.5		120	120
Boron (HWS)	µg/g	0.02	0.19	0.21	0.60		2	1.5
Cadmium	µg/g	0.5	< 0.5	< 0.5	< 0.5		1.9	1.2
Chromium	µg/g	1	8	8	11		160	160
Chromium (VI)	µg/g	0.2	< 0.2	< 0.2	< 0.2		8	8
Cobalt	µg/g	1	3	2	4		80	22
Copper	µg/g	1	3	2	4		230	140
Lead	µg/g	5	< 5	< 5	12		120	120
Mercury	µg/g	0.005	< 0.005	< 0.005	0.051		3.9	0.27
Molybdenum	µg/g	1	< 1	< 1	< 1		40	6.9
Nickel	µg/g	1	4	4	5		270	100
Selenium	µg/g	0.5	< 0.5	< 0.5	< 0.5		5.5	2.4
Silver	µg/g	0.2	< 0.2	< 0.2	< 0.2		40	20
Thallium	µg/g	0.1	< 0.1	< 0.1	< 0.1		3.3	1
Uranium	µg/g	0.1	0.3	0.3	0.3		33	23
Vanadium	µg/g	1	21	23	28		86	86

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
Tbl. 2 - RPI Soil - Table 2 - Res./Parkland/Institutional Soil Std



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Lab Manager

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DATE REPORTED: 19-Jun-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		BH 404a-4	BH 404b-4	BH 404c-2		O. Reg. 153	
	Sample I.D.		B19-16616-8	B19-16616-10	B19-16616-13		Tbl. 2 - ICC	Tbl. 2 - RPI
	Date Collected		06-Jun-19	06-Jun-19	06-Jun-19		Soil	Soil
Parameter	**Units**	**R.L.**						
Zinc	µg/g	3	9	9	18		340	340

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
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SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Summary of Exceedances

Table 2 - Ind./Commercial/Community Soil Std		
BH 404c-2	Found Value	Limit
Cyanide (Free) (µg/g)	0.50	0.051

Table 2 - Res./Parkland/Institutional Soil Std		
BH 404c-2	Found Value	Limit
Cyanide (Free) (µg/g)	0.50	0.051

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
Tbl. 2 - RPI Soil - Table 2 - Res./Parkland/Institutional Soil Std

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SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Parameter	Qty	Site Analyzed	Analyst Initials	Date Analyzed	Lab Method	Reference Method
% Moisture	9	Richmond Hill	FAL	13-Jun-19	A-% moisture RH	
PHC(F2-F4)	9	Kingston	KPR	13-Jun-19	C-PHC-S-001 (k)	CWS Tier 1
VOC's	9	Richmond Hill	FAL	13-Jun-19	C-VOC-02 (rh)	EPA 8260
PHC(F1)	9	Richmond Hill	FAL	13-Jun-19	C-VPHS-01 (rh)	CWS Tier 1

µg/g = micrograms per gram (parts per million) and is equal to mg/Kg
F1 C6-C10 hydrocarbons in µg/g, (F1-btex if requested)
F2 C10-C16 hydrocarbons in µg/g, (F2-napth if requested)
F3 C16-C34 hydrocarbons in µg/g, (F3-pah if requested)
F4 C34-C50 hydrocarbons in µg/g
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
Any deviations from the method are noted and reported for any particular sample.
nC6 and nC10 response factor is 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:
Linearity is within 15%:
All results expressed on a dry weight basis.
Unless otherwise noted all chromatograms returned to baseline by the retention time of nC50.

Unless otherwise noted all extraction, analysis, QC requirements and limits for holding time were met.
If analyzed for F4 and F4G they are not to be summed but the greater of the two numbers are to be used in application to the CWS PHC
QC will be made available upon request.

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
Tbl. 2 - RPI Soil - Table 2 - Res./Parkland/Institutional Soil Std



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SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		BH 406a-4	BH 406a-5	BH 406b-4	BH 406b-5	O. Reg. 153	
	Sample I.D.		B19-16616-1	B19-16616-2	B19-16616-3	B19-16616-4	Tbl. 2 - ICC	Tbl. 2 - RPI
	Date Collected		06-Jun-19	06-Jun-19	06-Jun-19	06-Jun-19	Soil	Soil
Parameter	**Units**	**R.L.**						
Acetone	µg/g	0.5	< 0.5	< 0.5	< 0.5	< 0.5	16	16
Benzene	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.32	0.21
Bromodichloromethane	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	1.5	1.5
Bromoform	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.61	0.27
Bromomethane	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	0.05
Carbon Tetrachloride	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.21	0.05
Monochlorobenzene (Chlorobenzene)	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	2.4	2.4
Chloroform	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.47	0.05
Dibromochloromethane	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	2.3	2.3
Dichlorobenzene,1,2-	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	1.2	1.2
Dichlorobenzene,1,3-	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	9.6	4.8
Dichlorobenzene,1,4-	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.2	0.083
Dichlorodifluoromethane	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	16	16
Dichloroethane,1,1-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.47	0.47
Dichloroethane,1,2-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.05	0.05
Dichloroethylene,1,1-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.064	0.05
Dichloroethene, cis-1,2-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	1.9	1.9
Dichloroethene, trans-1,2-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	1.3	0.084
Dichloropropane,1,2-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.16	0.050
Dichloropropene, cis-1,3-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02		
Dichloropropene, trans-1,3-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02		

O. Reg. 153 - Soil, Ground Water and Sediment Standards
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DATE RECEIVED: 07-Jun-19
DATE REPORTED: 19-Jun-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		BH 406a-4	BH 406a-5	BH 406b-4	BH 406b-5	O. Reg. 153	
	Sample I.D.		B19-16616-1	B19-16616-2	B19-16616-3	B19-16616-4	Tbl. 2 - ICC	Tbl. 2 - RPI
	Date Collected		06-Jun-19	06-Jun-19	06-Jun-19	06-Jun-19	Soil	Soil
Parameter	**Units**	**R.L.**						
Dichloropropene 1,3-cis+trans	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.059	0.050
Ethylbenzene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	1.1	1.1
Dibromoethane,1,2-(Ethylene Dibromide)	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.05	0.05
Hexane	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	46	2.8
Methyl Ethyl Ketone	µg/g	0.5	< 0.5	< 0.5	< 0.5	< 0.5	70	16
Methyl Isobutyl Ketone	µg/g	0.5	< 0.5	< 0.5	< 0.5	< 0.5	31	1.7
Methyl-t-butyl Ether	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	1.6	0.75
Dichloromethane (Methylene Chloride)	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	1.6	0.10
Styrene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	34	0.7
Tetrachloroethane,1,1,1,2-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.087	0.058
Tetrachloroethane,1,1,2,2-	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	0.05
Tetrachloroethylene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	1.9	0.28
Toluene	µg/g	0.2	< 0.2	< 0.2	< 0.2	< 0.2	6.4	2.3
Trichloroethane,1,1,1-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	6.1	0.38
Trichloroethane,1,1,2-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.05	0.05
Trichloroethylene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.55	0.061
Trichlorofluoromethane	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	4	4.0
Vinyl Chloride	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.032	0.020
Xylene, m,p-	µg/g	0.03	< 0.03	0.06	< 0.03	0.05		
Xylene, o-	µg/g	0.03	< 0.03	< 0.03	< 0.03	< 0.03		

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
Tbl. 2 - RPI Soil - Table 2 - Res./Parkland/Institutional Soil Std



Christine Burke
Lab Manager

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Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G75707-8 **REPORT No. B19-16616 (ii)**

Report To:

Azimuth Environmental
642 Welham Rd,
Barrie ON L4N9A1 Canada
Attention: Ian Acheson

Caduceon Environmental Laboratories
112 Commerce Park Drive
Barrie ON L4N 8W8
Tel: 705-252-5743
Fax: 705-252-5746

DATE RECEIVED: 07-Jun-19
DATE REPORTED: 19-Jun-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		BH 406a-4	BH 406a-5	BH 406b-4	BH 406b-5	O. Reg. 153	
	Sample I.D.		B19-16616-1	B19-16616-2	B19-16616-3	B19-16616-4	Tbl. 2 - ICC	Tbl. 2 - RPI
	Date Collected		06-Jun-19	06-Jun-19	06-Jun-19	06-Jun-19	Soil	Soil
Parameter	**Units**	**R.L.**						
Xylene, m,p,o-	µg/g	0.03	< 0.03	0.06	< 0.03	0.05	26	3.1
PHC F1 (C6-C10)	µg/g	10	< 10	< 10	< 10	< 10	55	55
PHC F1 - BTEX	µg/g	10	< 10	< 10	< 10	< 10	55	55
PHC F2 (>C10-C16)	µg/g	5	< 5	10	< 5	< 5	230	98
PHC F3 (>C16-C34)	µg/g	10	< 10	13	< 10	< 10	1700	300
PHC F4 (>C34-C50)	µg/g	10	< 10	< 10	< 10	< 10	3300	2800
% moisture	%		13.4	13.3	12.5	15.2		

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
Tbl. 2 - RPI Soil - Table 2 - Res./Parkland/Institutional Soil Std



Christine Burke
Lab Manager

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DATE RECEIVED: 07-Jun-19
DATE REPORTED: 19-Jun-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		BH 406c-4	BH 404a-4	BH 404b-3	BH 404c-3	O. Reg. 153	
	Sample I.D.		B19-16616-5	B19-16616-8	B19-16616-9	B19-16616-11	Tbl. 2 - ICC	Tbl. 2 - RPI
	Date Collected		06-Jun-19	06-Jun-19	06-Jun-19	06-Jun-19	Soil	Soil
Parameter	**Units**	**R.L.**						
Acetone	µg/g	0.5	< 0.5	< 0.5	< 0.5	< 0.5	16	16
Benzene	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.32	0.21
Bromodichloromethane	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	1.5	1.5
Bromoform	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.61	0.27
Bromomethane	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	0.05
Carbon Tetrachloride	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.21	0.05
Monochlorobenzene (Chlorobenzene)	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	2.4	2.4
Chloroform	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.47	0.05
Dibromochloromethane	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	2.3	2.3
Dichlorobenzene,1,2-	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	1.2	1.2
Dichlorobenzene,1,3-	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	9.6	4.8
Dichlorobenzene,1,4-	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.2	0.083
Dichlorodifluoromethane	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	16	16
Dichloroethane,1,1-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.47	0.47
Dichloroethane,1,2-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.05	0.05
Dichloroethylene,1,1-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.064	0.05
Dichloroethene, cis-1,2-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	1.9	1.9
Dichloroethene, trans-1,2-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	1.3	0.084
Dichloropropane,1,2-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.16	0.050
Dichloropropene, cis-1,3-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02		
Dichloropropene, trans-1,3-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02		

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
Tbl. 2 - RPI Soil - Table 2 - Res./Parkland/Institutional Soil Std



Christine Burke
Lab Manager

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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G75707-8 **REPORT No. B19-16616 (ii)**

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Barrie ON L4N9A1 Canada
Attention: Ian Acheson

Caduceon Environmental Laboratories
112 Commerce Park Drive
Barrie ON L4N 8W8
Tel: 705-252-5743
Fax: 705-252-5746

DATE RECEIVED: 07-Jun-19
DATE REPORTED: 19-Jun-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		BH 406c-4	BH 404a-4	BH 404b-3	BH 404c-3	O. Reg. 153	
	Sample I.D.		B19-16616-5	B19-16616-8	B19-16616-9	B19-16616-11	Tbl. 2 - ICC	Tbl. 2 - RPI
	Date Collected		06-Jun-19	06-Jun-19	06-Jun-19	06-Jun-19	Soil	Soil
Parameter	**Units**	**R.L.**						
Dichloropropene 1,3-cis+trans	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.059	0.050
Ethylbenzene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	1.1	1.1
Dibromoethane,1,2-(Ethylene Dibromide)	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.05	0.05
Hexane	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	46	2.8
Methyl Ethyl Ketone	µg/g	0.5	< 0.5	< 0.5	< 0.5	< 0.5	70	16
Methyl Isobutyl Ketone	µg/g	0.5	< 0.5	< 0.5	< 0.5	< 0.5	31	1.7
Methyl-t-butyl Ether	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	1.6	0.75
Dichloromethane (Methylene Chloride)	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	1.6	0.10
Styrene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	34	0.7
Tetrachloroethane,1,1,1,2-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.087	0.058
Tetrachloroethane,1,1,2,2-	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	0.05
Tetrachloroethylene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	1.9	0.28
Toluene	µg/g	0.2	< 0.2	< 0.2	< 0.2	< 0.2	6.4	2.3
Trichloroethane,1,1,1-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	6.1	0.38
Trichloroethane,1,1,2-	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.05	0.05
Trichloroethylene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.55	0.061
Trichlorofluoromethane	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	4	4.0
Vinyl Chloride	µg/g	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.032	0.020
Xylene, m,p-	µg/g	0.03	0.23	< 0.03	< 0.03	< 0.03		
Xylene, o-	µg/g	0.03	< 0.03	< 0.03	< 0.03	< 0.03		

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
Tbl. 2 - RPI Soil - Table 2 - Res./Parkland/Institutional Soil Std



Christine Burke
Lab Manager

R.L. = Reporting Limit
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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G75707-8 **REPORT No. B19-16616 (ii)**

Report To:

Azimuth Environmental
642 Welham Rd,
Barrie ON L4N9A1 Canada
Attention: Ian Acheson

Caduceon Environmental Laboratories
112 Commerce Park Drive
Barrie ON L4N 8W8
Tel: 705-252-5743
Fax: 705-252-5746

DATE RECEIVED: 07-Jun-19
DATE REPORTED: 19-Jun-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		BH 406c-4	BH 404a-4	BH 404b-3	BH 404c-3	O. Reg. 153	
	Sample I.D.		B19-16616-5	B19-16616-8	B19-16616-9	B19-16616-11	Tbl. 2 - ICC	Tbl. 2 - RPI
	Date Collected		06-Jun-19	06-Jun-19	06-Jun-19	06-Jun-19	Soil	Soil
Parameter	**Units**	**R.L.**						
Xylene, m,p,o-	µg/g	0.03	0.23	< 0.03	< 0.03	< 0.03	26	3.1
PHC F1 (C6-C10)	µg/g	10	< 10	< 10	< 10	< 10	55	55
PHC F1 - BTEX	µg/g	10	< 10	< 10	< 10	< 10	55	55
PHC F2 (>C10-C16)	µg/g	5	11	< 5	< 5	< 5	230	98
PHC F3 (>C16-C34)	µg/g	10	< 10	< 10	< 10	< 10	1700	300
PHC F4 (>C34-C50)	µg/g	10	< 10	< 10	< 10	< 10	3300	2800
% moisture	%		14.4	14.3	14.7	13.0		

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
Tbl. 2 - RPI Soil - Table 2 - Res./Parkland/Institutional Soil Std

Christine Burke
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DATE RECEIVED: 07-Jun-19
DATE REPORTED: 19-Jun-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		BH 404c-3-1				O. Reg. 153	
	Sample I.D.		B19-16616-12				Tbl. 2 - ICC Soil	Tbl. 2 - RPI Soil
	Date Collected		06-Jun-19					
Parameter	**Units**	**R.L.**						
Acetone	µg/g	0.5	< 0.5				16	16
Benzene	µg/g	0.02	< 0.02				0.32	0.21
Bromodichloromethane	µg/g	0.02	< 0.02				1.5	1.5
Bromoform	µg/g	0.02	< 0.02				0.61	0.27
Bromomethane	µg/g	0.05	< 0.05				0.05	0.05
Carbon Tetrachloride	µg/g	0.05	< 0.05				0.21	0.05
Monochlorobenzene (Chlorobenzene)	µg/g	0.02	< 0.02				2.4	2.4
Chloroform	µg/g	0.02	< 0.02				0.47	0.05
Dibromochloromethane	µg/g	0.02	< 0.02				2.3	2.3
Dichlorobenzene,1,2-	µg/g	0.05	< 0.05				1.2	1.2
Dichlorobenzene,1,3-	µg/g	0.05	< 0.05				9.6	4.8
Dichlorobenzene,1,4-	µg/g	0.05	< 0.05				0.2	0.083
Dichlorodifluoromethane	µg/g	0.05	< 0.05				16	16
Dichloroethane,1,1-	µg/g	0.02	< 0.02				0.47	0.47
Dichloroethane,1,2-	µg/g	0.02	< 0.02				0.05	0.05
Dichloroethylene,1,1-	µg/g	0.02	< 0.02				0.064	0.05
Dichloroethene, cis-1,2-	µg/g	0.02	< 0.02				1.9	1.9
Dichloroethene, trans-1,2-	µg/g	0.02	< 0.02				1.3	0.084
Dichloropropane,1,2-	µg/g	0.02	< 0.02				0.16	0.050
Dichloropropene, cis-1,3-	µg/g	0.02	< 0.02					
Dichloropropene, trans-1,3-	µg/g	0.02	< 0.02					

O. Reg. 153 - Soil, Ground Water and Sediment Standards
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Lab Manager

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DATE RECEIVED: 07-Jun-19
DATE REPORTED: 19-Jun-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		BH 404c-3-1				O. Reg. 153	
	Sample I.D.		B19-16616-12				Tbl. 2 - ICC Soil	Tbl. 2 - RPI Soil
	Date Collected		06-Jun-19					
Parameter	**Units**	**R.L.**						
Dichloropropene 1,3-cis+trans	µg/g	0.02	< 0.02				0.059	0.050
Ethylbenzene	µg/g	0.05	< 0.05				1.1	1.1
Dibromoethane,1,2-(Ethylene Dibromide)	µg/g	0.02	< 0.02				0.05	0.05
Hexane	µg/g	0.02	< 0.02				46	2.8
Methyl Ethyl Ketone	µg/g	0.5	< 0.5				70	16
Methyl Isobutyl Ketone	µg/g	0.5	< 0.5				31	1.7
Methyl-t-butyl Ether	µg/g	0.05	< 0.05				1.6	0.75
Dichloromethane (Methylene Chloride)	µg/g	0.05	< 0.05				1.6	0.10
Styrene	µg/g	0.05	< 0.05				34	0.7
Tetrachloroethane,1,1,1,2-	µg/g	0.02	< 0.02				0.087	0.058
Tetrachloroethane,1,1,2,2-	µg/g	0.05	< 0.05				0.05	0.05
Tetrachloroethylene	µg/g	0.05	< 0.05				1.9	0.28
Toluene	µg/g	0.2	< 0.2				6.4	2.3
Trichloroethane,1,1,1-	µg/g	0.02	< 0.02				6.1	0.38
Trichloroethane,1,1,2-	µg/g	0.02	< 0.02				0.05	0.05
Trichloroethylene	µg/g	0.05	< 0.05				0.55	0.061
Trichlorofluoromethane	µg/g	0.02	< 0.02				4	4.0
Vinyl Chloride	µg/g	0.02	< 0.02				0.032	0.020
Xylene, m,p-	µg/g	0.03	< 0.03					
Xylene, o-	µg/g	0.03	< 0.03					

O. Reg. 153 - Soil, Ground Water and Sediment Standards
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Tbl. 2 - RPI Soil - Table 2 - Res./Parkland/Institutional Soil Std

Christine Burke
Lab Manager

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DATE RECEIVED: 07-Jun-19
DATE REPORTED: 19-Jun-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D. / Sample I.D. / Date Collected		BH 404c-3-1 B19-16616-12 06-Jun-19				O. Reg. 153 Tbl. 2 - ICC Soil	O. Reg. 153 Tbl. 2 - RPI Soil
Parameter	**Units**	**R.L.**						
Xylene, m,p,o-	µg/g	0.03	< 0.03				26	3.1
PHC F1 (C6-C10)	µg/g	10	< 10				55	55
PHC F1 - BTEX	µg/g	10	< 10				55	55
PHC F2 (>C10-C16)	µg/g	5	< 5				230	98
PHC F3 (>C16-C34)	µg/g	10	< 10				1700	300
PHC F4 (>C34-C50)	µg/g	10	< 10				3300	2800
% moisture	%		12.7					

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
Tbl. 2 - RPI Soil - Table 2 - Res./Parkland/Institutional Soil Std

Christine Burke
Lab Manager

R.L. = Reporting Limit
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Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G75707-8 **REPORT No. B19-16616 (ii)**

Report To:

Azimuth Environmental
642 Welham Rd,
Barrie ON L4N9A1 Canada
Attention: Ian Acheson

Caduceon Environmental Laboratories
112 Commerce Park Drive
Barrie ON L4N 8W8
Tel: 705-252-5743
Fax: 705-252-5746

DATE RECEIVED: 07-Jun-19
DATE REPORTED: 19-Jun-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Summary of Exceedances

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
Tbl. 2 - RPI Soil - Table 2 - Res./Parkland/Institutional Soil Std

Christine Burke
Lab Manager

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DATE REPORTED: 19-Jun-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Parameter	Qty	Site Analyzed	Analyst Initials	Date Analyzed	Lab Method	Reference Method
SVOC	9	Kingston	sge	13-Jun-19	C-NAB-S-001 (k)	EPA 8270

µg/g = micrograms per gram (parts per million) and is equal to mg/Kg
F1 C6-C10 hydrocarbons in µg/g, (F1-btex if requested)
F2 C10-C16 hydrocarbons in µg/g, (F2-napth if requested)
F3 C16-C34 hydrocarbons in µg/g, (F3-pah if requested)
F4 C34-C50 hydrocarbons in µg/g
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
Any deviations from the method are noted and reported for any particular sample.
nC6 and nC10 response factor is 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:
Linearity is within 15%:
All results expressed on a dry weight basis.
Unless otherwise noted all chromatograms returned to baseline by the retention time of nC50.

Unless otherwise noted all extraction, analysis, QC requirements and limits for holding time were met.
If analyzed for F4 and F4G they are not to be summed but the greater of the two numbers are to be used in application to the CWS PHC
QC will be made available upon request.

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
Tbl. 2 - RPI Soil - Table 2 - Res./Parkland/Institutional Soil Std

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DATE RECEIVED: 07-Jun-19
DATE REPORTED: 19-Jun-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		BH 406a-4	BH 406a-5	BH 406b-4	BH 406b-5	O. Reg. 153	
	Sample I.D.		B19-16616-1	B19-16616-2	B19-16616-3	B19-16616-4	Tbl. 2 - ICC	Tbl. 2 - RPI
	Date Collected		06-Jun-19	06-Jun-19	06-Jun-19	06-Jun-19	Soil	Soil
Parameter	**Units**	**R.L.**						
Acenaphthene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	21	7.9
Acenaphthylene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.15	0.15
Anthracene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.67	0.67
Benzo(a)anthracene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.96	0.50
Benzo(a)pyrene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.3	0.3
Benzo(b)fluoranthene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.96	0.78
Benzo(b+k)fluoranthene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Benzo(g,h,i)perylene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	9.6	6.6
Benzo(k)fluoranthene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.96	0.78
Chrysene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	9.6	7.0
Dibenzo(a,h)anthracene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.1	0.1
Fluoranthene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	9.6	0.69
Fluorene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	62	62
Indeno(1,2,3,-cd)pyrene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.76	0.38
Methylnaphthalene,1-	µg/g	0.05	< 0.05	0.09	< 0.05	< 0.05	30	0.99
Methylnaphthalene,2-	µg/g	0.05	< 0.05	0.08	< 0.05	< 0.05	30	0.99
Methylnaphthalene 2-(1-)	µg/g	0.05	< 0.05	0.17	< 0.05	< 0.05	30	0.99
Naphthalene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	9.6	0.60
Phenanthrene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	12	6.2
Pyrene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	96	78

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
Tbl. 2 - RPI Soil - Table 2 - Res./Parkland/Institutional Soil Std



Christine Burke
Lab Manager

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Final Report

C.O.C.: G75707-8 **REPORT No. B19-16616 (iii)**

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Tel: 705-252-5743
Fax: 705-252-5746

DATE RECEIVED: 07-Jun-19
DATE REPORTED: 19-Jun-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		BH 406c-4	BH 404a-4	BH 404b-3	BH 404c-3	O. Reg. 153	
	Sample I.D.		B19-16616-5	B19-16616-8	B19-16616-9	B19-16616-11	Tbl. 2 - ICC	Tbl. 2 - RPI
	Date Collected		06-Jun-19	06-Jun-19	06-Jun-19	06-Jun-19	Soil	Soil
Parameter	**Units**	**R.L.**						
Acenaphthene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	21	7.9
Acenaphthylene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.15	0.15
Anthracene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.67	0.67
Benzo(a)anthracene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.96	0.50
Benzo(a)pyrene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.3	0.3
Benzo(b)fluoranthene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.96	0.78
Benzo(b+k)fluoranthene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Benzo(g,h,i)perylene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	9.6	6.6
Benzo(k)fluoranthene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.96	0.78
Chrysene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	9.6	7.0
Dibenzo(a,h)anthracene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.1	0.1
Fluoranthene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	9.6	0.69
Fluorene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	62	62
Indeno(1,2,3,-cd)pyrene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.76	0.38
Methylnaphthalene,1-	µg/g	0.05	0.06	< 0.05	< 0.05	< 0.05	30	0.99
Methylnaphthalene,2-	µg/g	0.05	0.11	< 0.05	< 0.05	< 0.05	30	0.99
Methylnaphthalene 2-(1-)	µg/g	0.05	0.16	< 0.05	< 0.05	< 0.05	30	0.99
Naphthalene	µg/g	0.05	0.08	< 0.05	< 0.05	< 0.05	9.6	0.60
Phenanthrene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	12	6.2
Pyrene	µg/g	0.05	< 0.05	< 0.05	< 0.05	< 0.05	96	78

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
Tbl. 2 - RPI Soil - Table 2 - Res./Parkland/Institutional Soil Std

Christine Burke
Lab Manager

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Final Report

C.O.C.: G75707-8 **REPORT No. B19-16616 (iii)**

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Attention: Ian Acheson

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112 Commerce Park Drive
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Tel: 705-252-5743
Fax: 705-252-5746

DATE RECEIVED: 07-Jun-19
DATE REPORTED: 19-Jun-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		BH 404c-3-1				O. Reg. 153	
	Sample I.D.		B19-16616-12				Tbl. 2 - ICC Soil	Tbl. 2 - RPI Soil
	Date Collected		06-Jun-19					
Parameter	**Units**	**R.L.**						
Acenaphthene	µg/g	0.05	< 0.05				21	7.9
Acenaphthylene	µg/g	0.05	< 0.05				0.15	0.15
Anthracene	µg/g	0.05	< 0.05				0.67	0.67
Benzo(a)anthracene	µg/g	0.05	< 0.05				0.96	0.50
Benzo(a)pyrene	µg/g	0.05	< 0.05				0.3	0.3
Benzo(b)fluoranthene	µg/g	0.05	< 0.05				0.96	0.78
Benzo(b+k)fluoranthene	µg/g	0.05	< 0.05					
Benzo(g,h,i)perylene	µg/g	0.05	< 0.05				9.6	6.6
Benzo(k)fluoranthene	µg/g	0.05	< 0.05				0.96	0.78
Chrysene	µg/g	0.05	< 0.05				9.6	7.0
Dibenzo(a,h)anthracene	µg/g	0.05	< 0.05				0.1	0.1
Fluoranthene	µg/g	0.05	< 0.05				9.6	0.69
Fluorene	µg/g	0.05	< 0.05				62	62
Indeno(1,2,3,-cd)pyrene	µg/g	0.05	< 0.05				0.76	0.38
Methylnaphthalene,1-	µg/g	0.05	< 0.05				30	0.99
Methylnaphthalene,2-	µg/g	0.05	< 0.05				30	0.99
Methylnaphthalene 2-(1-)	µg/g	0.05	< 0.05				30	0.99
Naphthalene	µg/g	0.05	< 0.05				9.6	0.60
Phenanthrene	µg/g	0.05	< 0.05				12	6.2
Pyrene	µg/g	0.05	< 0.05				96	78

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
Tbl. 2 - RPI Soil - Table 2 - Res./Parkland/Institutional Soil Std

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Christine Burke
Lab Manager

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DATE RECEIVED: 07-Jun-19
DATE REPORTED: 19-Jun-19
SAMPLE MATRIX: Soil

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Summary of Exceedances

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - ICC Soil - Table 2 - Ind./Commercial/Community Soil Std
Tbl. 2 - RPI Soil - Table 2 - Res./Parkland/Institutional Soil Std

Christine Burke
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DATE RECEIVED: 07-Jun-19
DATE REPORTED: 17-Jun-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Parameter	Qty	Site Analyzed	Analyst Initials	Date Analyzed	Lab Method	Reference Method
Cyanide	7	Kingston	US	13-Jun-19	A-CN-001 (k)	SM 4500CN
Conductivity	7	Holly Lane	SYL	11-Jun-19	A-COND-02 (o)	SM 2510B
pH	7	Holly Lane	SYL	11-Jun-19	A-PH-01 (o)	SM 4500H
Chromium (VI)	7	Holly Lane	LMG	17-Jun-19	D-CRVI-01 (o)	MOE E3056
Mercury	7	Holly Lane	PBK	12-Jun-19	D-HG-02 (o)	SM 3112 B
Metals - ICP-OES	7	Holly Lane	AHM	13-Jun-19	D-ICP-01 (o)	SM 3120
Metals - ICP-MS	7	Holly Lane	TPR	12-Jun-19	D-ICPMS-01 (o)	EPA 200.8

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

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Lab Manager

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DATE REPORTED: 17-Jun-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		MW 406a	MW 406b	MW 406c	MW 404a	O. Reg. 153	
	Sample I.D.		B19-16618-1	B19-16618-2	B19-16618-3	B19-16618-4	Tbl. 2 - PGW	
	Date Collected		07-Jun-19	07-Jun-19	07-Jun-19	07-Jun-19		
Parameter	**Units**	**R.L.**						
pH @25°C	pH Units		7.75	7.70	7.70	7.67		
Conductivity @25°C	mS/cm	0.001	1.83	1.84	1.88	2.66		
Cyanide (Free)	µg/L	5	< 5	< 5	< 5	< 5	66	
Sodium	µg/L	200	236000	204000	149000	326000	490000	
Antimony	µg/L	0.1	0.2	0.3	0.7	0.2	6	
Arsenic	µg/L	0.1	0.9	1.2	0.6	0.6	25	
Barium	µg/L	1	193	165	106	343	1000	
Beryllium	µg/L	0.1	< 0.1	< 0.1	< 0.1	< 0.1	4	
Boron	µg/L	5	49	64	89	44	5000	
Cadmium	µg/L	0.015	0.021	0.019	0.076	< 0.015	2.7	
Chromium	µg/L	2	< 2	< 2	< 2	< 2	50	
Chromium (VI)	µg/L	10	< 10 [1]	< 10 [1]	< 10 [1]	< 10 [1]	25	
Cobalt	µg/L	0.1	**5.1**	1.0	1.5	**4.3**	3.8	
Copper	µg/L	2	< 2	< 2	< 2	< 2	87	
Lead	µg/L	0.02	0.40	3.09	6.86	0.35	10	
Mercury	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.29	
Molybdenum	µg/L	0.1	12.6	11.9	37.7	7.2	70	
Nickel	µg/L	0.2	5.5	4.9	7.8	3.3	100	
Selenium	µg/L	1	1	< 1	< 1	< 1	10	
Silver	µg/L	0.1	< 0.1	< 0.1	< 0.1	< 0.1	1.5	
Thallium	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	2	
Uranium	µg/L	0.05	0.82	0.38	0.32	0.69	20	
Vanadium	µg/L	0.1	0.3	0.4	0.6	0.2	6.2	
Zinc	µg/L	5	< 5	< 5	< 5	< 5	1100	

1 . Chromium (VI) result is based on total chromium

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

Christine Burke
Lab Manager

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DATE RECEIVED: 07-Jun-19
DATE REPORTED: 17-Jun-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		MW 404b	MW 404c	MW 406a-1		O. Reg. 153	
	Sample I.D.		B19-16618-5	B19-16618-6	B19-16618-7		Tbl. 2 - PGW	
	Date Collected		07-Jun-19	07-Jun-19	07-Jun-19			
Parameter	**Units**	**R.L.**						
pH @25°C	pH Units		7.65	7.74	7.85			
Conductivity @25°C	mS/cm	0.001	2.65	2.12	1.86			
Cyanide (Free)	µg/L	5	< 5	< 5	< 5		66	
Sodium	µg/L	200	249000	303000	236000		490000	
Antimony	µg/L	0.1	0.7	0.8	0.2		6	
Arsenic	µg/L	0.1	1.1	2.0	0.9		25	
Barium	µg/L	1	399	176	186		1000	
Beryllium	µg/L	0.1	< 0.1	< 0.1	< 0.1		4	
Boron	µg/L	5	42	70	49		5000	
Cadmium	µg/L	0.015	0.044	0.114	0.024		2.7	
Chromium	µg/L	2	< 2	< 2	< 2		50	
Chromium (VI)	µg/L	10	< 10 [1]	< 10 [1]	< 10 [1]		25	
Cobalt	µg/L	0.1	1.3	**4.4**	**5.2**		3.8	
Copper	µg/L	2	< 2	< 2	< 2		87	
Lead	µg/L	0.02	1.91	4.84	0.44		10	
Mercury	µg/L	0.02	< 0.02	< 0.02	< 0.02		0.29	
Molybdenum	µg/L	0.1	26.0	67.9	13.5		70	
Nickel	µg/L	0.2	5.8	20.0	5.3		100	
Selenium	µg/L	1	1	< 1	< 1		10	
Silver	µg/L	0.1	< 0.1	< 0.1	< 0.1		1.5	
Thallium	µg/L	0.05	< 0.05	< 0.05	< 0.05		2	
Uranium	µg/L	0.05	0.57	0.17	0.79		20	
Vanadium	µg/L	0.1	0.3	0.5	0.3		6.2	
Zinc	µg/L	5	< 5	< 5	< 5		1100	

1 . Chromium (VI) result is based on total chromium

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

Christine Burke
Lab Manager

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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G75707 **REPORT No. B19-16618 (i)**

Report To:

Azimuth Environmental
647 Welham Rd,
Barrie ON L4N9A1 Canada
Attention: Ian Acheson

Caduceon Environmental Laboratories
112 Commerce Park Drive
Barrie ON L4N 8W8
Tel: 705-252-5743
Fax: 705-252-5746

DATE RECEIVED: 07-Jun-19
DATE REPORTED: 17-Jun-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Summary of Exceedances

Table 2 - Potable Ground Water		
MW 406a	Found Value	Limit
Cobalt (µg/L)	5.1	3.8
MW 404a	Found Value	Limit
Cobalt (µg/L)	4.3	3.8
MW 404c	Found Value	Limit
Cobalt (µg/L)	4.4	3.8
MW 406a-1	Found Value	Limit
Cobalt (µg/L)	5.2	3.8

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

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Lab Manager

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Parameter	Qty	Site Analyzed	Analyst Initials	Date Analyzed	Lab Method	Reference Method
PHC(F2-F4)	7	Kingston	KPR	12-Jun-19	C-PHC-W-001 (k)	MOE E3421
VOC's	7	Richmond Hill	JE	13-Jun-19	C-VOC-02 (rh)	EPA 8260
PHC(F1)	7	Richmond Hill	JE	13-Jun-19	C-VPHW-01 (rh)	MOE E3421

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

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SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		MW 406a	MW 406b	MW 406c	MW 404a	O. Reg. 153	
	Sample I.D.		B19-16618-1	B19-16618-2	B19-16618-3	B19-16618-4	Tbl. 2 - PGW	
	Date Collected		07-Jun-19	07-Jun-19	07-Jun-19	07-Jun-19		
Parameter	**Units**	**R.L.**						
Acetone	µg/L	30	< 30	< 30	< 30	< 30	2700	
Benzene	µg/L	0.5	< 0.5	1.1	1.9	< 0.5	5	
Bromodichloromethane	µg/L	2	< 2	< 2	< 2	< 2	16	
Bromoform	µg/L	5	< 5	< 5	< 5	< 5	25	
Bromomethane	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.89	
Carbon Tetrachloride	µg/L	0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.79	
Monochlorobenzene (Chlorobenzene)	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	30	
Chloroform	µg/L	1	< 1	< 1	< 1	< 1	2.4	
Dibromochloromethane	µg/L	2	< 2	< 2	< 2	< 2	25	
Dichlorobenzene,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	3	
Dichlorobenzene,1,3-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	59	
Dichlorobenzene,1,4-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1	
Dichlorodifluoromethane	µg/L	2	< 2	< 2	< 2	< 2	590	
Dichloroethane,1,1-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	5	
Dichloroethane,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Dichloroethylene,1,1-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Dichloroethene, cis-1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Dichloroethene, trans-1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Dichloropropane,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	5	
Dichloropropene, cis-1,3-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5		
Dichloropropene, trans-1,3-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5		
Dichloropropene 1,3-cis+trans	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.5	

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

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Christine Burke
Lab Manager

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SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		MW 406a	MW 406b	MW 406c	MW 404a	O. Reg. 153	
	Sample I.D.		B19-16618-1	B19-16618-2	B19-16618-3	B19-16618-4	Tbl. 2 - PGW	
	Date Collected		07-Jun-19	07-Jun-19	07-Jun-19	07-Jun-19		
Parameter	**Units**	**R.L.**						
Ethylbenzene	µg/L	0.5	1.3	**132**	**105**	**585**	2.4	
Dibromoethane,1,2-(Ethylene Dibromide)	µg/L	0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.2	
Hexane	µg/L	5	6	35	< 5	5	51	
Methyl Ethyl Ketone	µg/L	20	< 20	30	< 20	< 20	1800	
Methyl Isobutyl Ketone	µg/L	20	< 20	< 20	< 20	< 20	640	
Methyl-t-butyl Ether	µg/L	2	< 2	< 2	< 2	< 2	15	
Dichloromethane (Methylene Chloride)	µg/L	5	< 5	< 5	< 5	< 5	50	
Styrene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	5.4	
Tetrachloroethane,1,1,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	**2960**	1.1	
Tetrachloroethane,1,1,2,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1	
Tetrachloroethylene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Toluene	µg/L	0.5	1.2	4.8	2.4	**876**	24	
Trichloroethane,1,1,1-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	200	
Trichloroethane,1,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	4.7	
Trichloroethylene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Trichlorofluoromethane	µg/L	5	< 5	< 5	< 5	< 5	150	
Vinyl Chloride	µg/L	0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.5	
Xylene, m,p-	µg/L	1.0	33.3	632	222	738		
Xylene, o-	µg/L	0.5	< 0.5	53.6	57.9	12.4		
Xylene, m,p,o-	µg/L	1.1	33.3	**685**	280	**750**	300	
PHC F1 (C6-C10)	µg/L	50	**2780**	**12500**	**7250**	**8050**	750	

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

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JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		MW 406a	MW 406b	MW 406c	MW 404a	O. Reg. 153	
	Sample I.D.		B19-16618-1	B19-16618-2	B19-16618-3	B19-16618-4	Tbl. 2 - PGW	
	Date Collected		07-Jun-19	07-Jun-19	07-Jun-19	07-Jun-19		
Parameter	**Units**	**R.L.**						
PHC F1 - BTEX	µg/L	50	**2740**	**11700**	**6860**	**5840**	750	
PHC F2 (>C10-C16)	µg/L	50	**1620**	**3940**	**600**	**320**	150	
PHC F3 (>C16-C34)	µg/L	400	< 400	< 400	< 400	< 400	500	
PHC F4 (>C34-C50)	µg/L	400	< 400	< 400	< 400	< 400	500	

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SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		MW 404b	MW 404c	MW 406a-1		O. Reg. 153 Tbl. 2 - PGW	
	Sample I.D.		B19-16618-5	B19-16618-6	B19-16618-7			
	Date Collected		07-Jun-19	07-Jun-19	07-Jun-19			
Parameter	**Units**	**R.L.**						
Acetone	µg/L	30	< 30	< 30	< 30		2700	
Benzene	µg/L	0.5	2.7	4.0	< 0.5		5	
Bromodichloromethane	µg/L	2	< 2	< 2	< 2		16	
Bromoform	µg/L	5	< 5	< 5	< 5		25	
Bromomethane	µg/L	0.5	< 0.5	< 0.5	< 0.5		0.89	
Carbon Tetrachloride	µg/L	0.2	< 0.2	< 0.2	< 0.2		0.79	
Monochlorobenzene (Chlorobenzene)	µg/L	0.5	< 0.5	< 0.5	< 0.5		30	
Chloroform	µg/L	1	< 1	< 1	< 1		2.4	
Dibromochloromethane	µg/L	2	< 2	< 2	< 2		25	
Dichlorobenzene,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5		3	
Dichlorobenzene,1,3-	µg/L	0.5	< 0.5	< 0.5	< 0.5		59	
Dichlorobenzene,1,4-	µg/L	0.5	< 0.5	< 0.5	< 0.5		1	
Dichlorodifluoromethane	µg/L	2	< 2	< 2	< 2		590	
Dichloroethane,1,1-	µg/L	0.5	< 0.5	< 0.5	< 0.5		5	
Dichloroethane,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5		1.6	
Dichloroethylene,1,1-	µg/L	0.5	< 0.5	< 0.5	< 0.5		1.6	
Dichloroethene, cis-1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5		1.6	
Dichloroethene, trans-1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5		1.6	
Dichloropropane,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5		5	
Dichloropropene, cis-1,3-	µg/L	0.5	< 0.5	< 0.5	< 0.5			
Dichloropropene, trans-1,3-	µg/L	0.5	< 0.5	< 0.5	< 0.5			
Dichloropropene 1,3-cis+trans	µg/L	0.5	< 0.5	< 0.5	< 0.5		0.5	

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water



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JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		MW 404b	MW 404c	MW 406a-1		O. Reg. 153	
	Sample I.D.		B19-16618-5	B19-16618-6	B19-16618-7		Tbl. 2 - PGW	
	Date Collected		07-Jun-19	07-Jun-19	07-Jun-19			
Parameter	**Units**	**R.L.**						
Ethylbenzene	µg/L	0.5	**1210**	**447**	2.2		2.4	
Dibromoethane,1,2-(Ethylene Dibromide)	µg/L	0.2	< 0.2	< 0.2	< 0.2		0.2	
Hexane	µg/L	5	16	< 5	5		51	
Methyl Ethyl Ketone	µg/L	20	< 20	< 20	< 20		1800	
Methyl Isobutyl Ketone	µg/L	20	< 20	< 20	< 20		640	
Methyl-t-butyl Ether	µg/L	2	< 2	< 2	< 2		15	
Dichloromethane (Methylene Chloride)	µg/L	5	< 5	< 5	< 5		50	
Styrene	µg/L	0.5	< 0.5	**6.0**	< 0.5		5.4	
Tetrachloroethane,1,1,1,2-	µg/L	0.5	**6980**	< 0.5	< 0.5		1.1	
Tetrachloroethane,1,1,2,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5		1	
Tetrachloroethylene	µg/L	0.5	< 0.5	< 0.5	< 0.5		1.6	
Toluene	µg/L	0.5	**1190**	**881**	1.8		24	
Trichloroethane,1,1,1-	µg/L	0.5	< 0.5	< 0.5	< 0.5		200	
Trichloroethane,1,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5		4.7	
Trichloroethylene	µg/L	0.5	< 0.5	< 0.5	< 0.5		1.6	
Trichlorofluoromethane	µg/L	5	< 5	< 5	< 5		150	
Vinyl Chloride	µg/L	0.2	< 0.2	< 0.2	< 0.2		0.5	
Xylene, m,p-	µg/L	1.0	1460	2370	36.2			
Xylene, o-	µg/L	0.5	26.9	708	1.2			
Xylene, m,p,o-	µg/L	1.1	**1490**	**3080**	37.4		300	
PHC F1 (C6-C10)	µg/L	50	**21500**	**10200**	**2700**		750	

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

Christine Burke
Lab Manager

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JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D. / Sample I.D. / Date Collected		MW 404b B19-16618-5 07-Jun-19	MW 404c B19-16618-6 07-Jun-19	MW 406a-1 B19-16618-7 07-Jun-19		O. Reg. 153 Tbl. 2 - PGW	
Parameter	**Units**	**R.L.**						
PHC F1 - BTEX	µg/L	50	**17700**	**5810**	**2650**		750	
PHC F2 (>C10-C16)	µg/L	50	**1760**	**1810**	**2270**		150	
PHC F3 (>C16-C34)	µg/L	400	< 400	< 400	< 400		500	
PHC F4 (>C34-C50)	µg/L	400	< 400	< 400	< 400		500	

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Summary of Exceedances

Table 2 - Potable Ground Water

MW 406a	Found Value	Limit
PHC F1 (C6-C10) (µg/L)	2780	750
PHC F1 - BTEX (µg/L)	2740	750
PHC F2 (>C10-C16) (µg/L)	1620	150
MW 406b	Found Value	Limit
Xylene, m,p,o- (µg/L)	685	300
PHC F1 (C6-C10) (µg/L)	12500	750
Ethylbenzene (µg/L)	132	2.4
PHC F1 - BTEX (µg/L)	11700	750
PHC F2 (>C10-C16) (µg/L)	3940	150
MW 406c	Found Value	Limit
PHC F2 (>C10-C16) (µg/L)	600	150
PHC F1 - BTEX (µg/L)	6860	750
Ethylbenzene (µg/L)	105	2.4
PHC F1 (C6-C10) (µg/L)	7250	750
MW 404a	Found Value	Limit
PHC F1 - BTEX (µg/L)	5840	750
PHC F1 (C6-C10) (µg/L)	8050	750
PHC F2 (>C10-C16) (µg/L)	320	150
Ethylbenzene (µg/L)	585	2.4
Tetrachloroethane,1,1,1,2- (µg/L)	2960	1.1

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water



Christine Burke
Lab Manager

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C.O.C.: G75707 **REPORT No. B19-16618 (ii)**

Report To:
Azimuth Environmental
647 Welham Rd,
Barrie ON L4N9A1 Canada
Attention: Ian Acheson

Caduceon Environmental Laboratories
112 Commerce Park Drive
Barrie ON L4N 8W8
Tel: 705-252-5743
Fax: 705-252-5746

DATE RECEIVED: 07-Jun-19
DATE REPORTED: 17-Jun-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Table 2 - Potable Ground Water

MW 404a	Found Value	Limit
Toluene (µg/L)	876	24
Xylene, m,p,o- (µg/L)	750	300
MW 404b	Found Value	Limit
PHC F1 - BTEX (µg/L)	17700	750
PHC F1 (C6-C10) (µg/L)	21500	750
Ethylbenzene (µg/L)	1210	2.4
Tetrachloroethane,1,1,1,2- (µg/L)	6980	1.1
Toluene (µg/L)	1190	24
Xylene, m,p,o- (µg/L)	1490	300
PHC F2 (>C10-C16) (µg/L)	1760	150
MW 404c	Found Value	Limit
Ethylbenzene (µg/L)	447	2.4
PHC F1 - BTEX (µg/L)	5810	750
PHC F1 (C6-C10) (µg/L)	10200	750
Xylene, m,p,o- (µg/L)	3080	300
PHC F2 (>C10-C16) (µg/L)	1810	150
Styrene (µg/L)	6.0	5.4
Toluene (µg/L)	881	24
MW 406a-1	Found Value	Limit
PHC F1 - BTEX (µg/L)	2650	750
PHC F2 (>C10-C16) (µg/L)	2270	150

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water



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DATE REPORTED: 17-Jun-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Table 2 - Potable Ground Water

MW 406a-1	Found Value	Limit
PHC F1 (C6-C10) (µg/L)	2700	750

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

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DATE REPORTED: 17-Jun-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Parameter	Qty	Site Analyzed	Analyst Initials	Date Analyzed	Lab Method	Reference Method
SVOC	7	Kingston	sge	14-Jun-19	C-NAB-W-001 (k)	EPA 8270

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

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DATE RECEIVED: 07-Jun-19
DATE REPORTED: 17-Jun-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		MW 406a	MW 406b	MW 406c	MW 404a	O. Reg. 153	
	Sample I.D.		B19-16618-1	B19-16618-2	B19-16618-3	B19-16618-4	Tbl. 2 - PGW	
	Date Collected		07-Jun-19	07-Jun-19	07-Jun-19	07-Jun-19		
Parameter	**Units**	**R.L.**						
Acenaphthene	µg/L	0.05	< 0.05	1.97	0.81	< 0.05	4.1	
Acenaphthylene	µg/L	0.05	< 0.05	< 0.09	< 0.05	< 0.05	1	
Anthracene	µg/L	0.05	< 0.05	< 0.09	0.08	< 0.05	2.4	
Benzo(a)anthracene	µg/L	0.05	< 0.05	< 0.09	< 0.05	< 0.05	1	
Benzo(a)pyrene	µg/L	0.01	< 0.01	**< 0.02**	< 0.01	< 0.01	0.01	
Benzo(b)fluoranthene	µg/L	0.05	< 0.05	< 0.09	< 0.05	< 0.05	0.1	
Benzo(b+k)fluoranthene	µg/L	0.1	< 0.1	< 0.2	< 0.1	< 0.1		
Benzo(g,h,i)perylene	µg/L	0.05	< 0.05	< 0.09	< 0.05	< 0.05	0.2	
Benzo(k)fluoranthene	µg/L	0.05	< 0.05	< 0.09	< 0.05	< 0.05	0.1	
Chrysene	µg/L	0.05	< 0.05	< 0.09	< 0.05	< 0.05	0.1	
Dibenzo(a,h)anthracene	µg/L	0.05	< 0.05	< 0.09	< 0.05	< 0.05	0.2	
Fluoranthene	µg/L	0.05	< 0.05	< 0.09	0.07	< 0.05	0.41	
Fluorene	µg/L	0.05	0.08	2.77	1.48	< 0.05	120	
Indeno(1,2,3,-cd)pyrene	µg/L	0.05	< 0.05	< 0.09	< 0.05	< 0.05	0.2	
Methylnaphthalene,1-	µg/L	0.05	**5.52**	**81.9**	**129**	0.68	3.2	
Methylnaphthalene,2-	µg/L	0.08	**10.9**	**119**	**259**	1.29	3.2	
Methylnaphthalene 2-(1-)	µg/L	1	**16.4**	**201**	**388**	2.0	3.2	
Naphthalene	µg/L	0.05	**23.3**	**175**	**559**	10.0	11	
Phenanthrene	µg/L	0.05	0.09	**1.40**	**1.14**	< 0.05	1	
Pyrene	µg/L	0.05	< 0.05	< 0.09	0.11	< 0.05	4.1	

1 Elevated RL due to sample matrix

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

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Christine Burke
Lab Manager

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DATE RECEIVED: 07-Jun-19
DATE REPORTED: 17-Jun-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		MW 404b	MW 404c	MW 406a-1		O. Reg. 153 Tbl. 2 - PGW	
	Sample I.D.		B19-16618-5	B19-16618-6	B19-16618-7			
	Date Collected		07-Jun-19	07-Jun-19	07-Jun-19			
Parameter	**Units**	**R.L.**						
Acenaphthene	µg/L	0.05	0.15	0.28	0.08		4.1	
Acenaphthylene	µg/L	0.05	< 0.09	< 0.09	< 0.05		1	
Anthracene	µg/L	0.05	< 0.09	< 0.09	< 0.05		2.4	
Benzo(a)anthracene	µg/L	0.05	< 0.09	< 0.09	< 0.05		1	
Benzo(a)pyrene	µg/L	0.01	**< 0.02**	**< 0.02**	< 0.01		0.01	
Benzo(b)fluoranthene	µg/L	0.05	< 0.09	< 0.09	< 0.05		0.1	
Benzo(b+k)fluoranthene	µg/L	0.1	< 0.2	< 0.2	< 0.1			
Benzo(g,h,i)perylene	µg/L	0.05	< 0.09	< 0.09	< 0.05		0.2	
Benzo(k)fluoranthene	µg/L	0.05	< 0.09	< 0.09	< 0.05		0.1	
Chrysene	µg/L	0.05	< 0.09	< 0.09	< 0.05		0.1	
Dibenzo(a,h)anthracene	µg/L	0.05	< 0.09	< 0.09	< 0.05		0.2	
Fluoranthene	µg/L	0.05	< 0.09	< 0.09	< 0.05		0.41	
Fluorene	µg/L	0.05	0.39	0.64	0.19		120	
Indeno(1,2,3,-cd)pyrene	µg/L	0.05	< 0.09	< 0.09	< 0.05		0.2	
Methylnaphthalene,1-	µg/L	0.05	**72.1**	**76.8**	**7.89**		3.2	
Methylnaphthalene,2-	µg/L	0.08	**144**	**156**	**15.9**		3.2	
Methylnaphthalene 2-(1-)	µg/L	1	**216**	**233**	**23.8**		3.2	
Naphthalene	µg/L	0.05	**515**	**280**	**18.0**		11	
Phenanthrene	µg/L	0.05	0.24	0.33	0.23		1	
Pyrene	µg/L	0.05	< 0.09	< 0.09	< 0.05		4.1	

1 Elevated RL due to sample matrix

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

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Lab Manager

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DATE REPORTED: 17-Jun-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Summary of Exceedances

Table 2 - Potable Ground Water

MW 406a	Found Value	Limit
Methylnaphthalene,1- (µg/L)	5.52	3.2
Naphthalene (µg/L)	23.3	11
Methylnaphthalene 2-(1-) (µg/L)	16.4	3.2
Methylnaphthalene,2- (µg/L)	10.9	3.2
MW 406b	Found Value	Limit
Methylnaphthalene 2-(1-) (µg/L)	201	3.2
Phenanthrene (µg/L)	1.40	1
Methylnaphthalene,1- (µg/L)	81.9	3.2
Benzo(a)pyrene (µg/L)	< 0.02	0.01
Naphthalene (µg/L)	175	11
Methylnaphthalene,2- (µg/L)	119	3.2
MW 406c	Found Value	Limit
Methylnaphthalene,1- (µg/L)	129	3.2
Methylnaphthalene 2-(1-) (µg/L)	388	3.2
Phenanthrene (µg/L)	1.14	1
Methylnaphthalene,2- (µg/L)	259	3.2
Naphthalene (µg/L)	559	11
MW 404b	Found Value	Limit
Methylnaphthalene 2-(1-) (µg/L)	216	3.2
Methylnaphthalene,1- (µg/L)	72.1	3.2

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water



Christine Burke
Lab Manager

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P.O. NUMBER: 18-175
WATERWORKS NO.

Table 2 - Potable Ground Water

MW 404b	Found Value	Limit
Naphthalene (µg/L)	515	11
Benzo(a)pyrene (µg/L)	< 0.02	0.01
Methylnaphthalene,2- (µg/L)	144	3.2
MW 404c	Found Value	Limit
Benzo(a)pyrene (µg/L)	< 0.02	0.01
Methylnaphthalene 2-(1-) (µg/L)	233	3.2
Methylnaphthalene,1- (µg/L)	76.8	3.2
Methylnaphthalene,2- (µg/L)	156	3.2
Naphthalene (µg/L)	280	11
MW 406a-1	Found Value	Limit
Methylnaphthalene 2-(1-) (µg/L)	23.8	3.2
Methylnaphthalene,2- (µg/L)	15.9	3.2
Naphthalene (µg/L)	18.0	11
Methylnaphthalene,1- (µg/L)	7.89	3.2

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Tbl. 2 - PGW - Table 2 - Potable Ground Water

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Final Report

C.O.C.: G85557-9 **REPORT No. B19-38402 (i)**

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DATE RECEIVED: 27-Nov-19
DATE REPORTED: 05-Dec-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Parameter	Qty	Site Analyzed	Analyst Initials	Date Analyzed	Lab Method	Reference Method
Cyanide	26	Kingston	US	28-Nov-19	A-CN-001 (k)	SM 4500CN
Conductivity	26	Holly Lane	SYL	28-Nov-19	A-COND-02 (o)	SM 2510B
Nitrogen - Ammonia (N)	7	Kingston	SHU	28-Nov-19	A-NH3-001 (k)	SM4500-NH3-H
pH	26	Holly Lane	SYL	28-Nov-19	A-PH-01 (o)	SM 4500H
Chromium (VI)	26	Holly Lane	LMG	02-Dec-19	D-CRVI-01 (o)	MOE E3056
Mercury	26	Holly Lane	PBK	03-Dec-19	D-HG-02 (o)	SM 3112 B
Metals - ICP-OES	26	Holly Lane	AHM	03-Dec-19	D-ICP-01 (o)	SM 3120
Metals - ICP-MS	26	Holly Lane	TPR	29-Nov-19	D-ICPMS-01 (o)	EPA 200.8

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

Christine Burke
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DATE REPORTED: 05-Dec-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		101	101-II	304	308	O. Reg. 153	
	Sample I.D.		B19-38402-1	B19-38402-2	B19-38402-3	B19-38402-4	Tbl. 2 - PGW	
	Date Collected		26-Nov-19	26-Nov-19	26-Nov-19	26-Nov-19		
Parameter	**Units**	**R.L.**						
pH @25°C	pH Units		7.82	7.87	7.97	8.01		
Conductivity @25°C	mS/cm	0.001	2.11	1.99	3.01	2.93		
Cyanide (Free)	µg/L	5	< 5	< 5	< 5	< 5	66	
Sodium	µg/L	200	208000	210000	477000	436000	490000	
Ammonia (N)-Total	mg/L	0.01	23.9	21.9	0.09			
Antimony	µg/L	0.1	< 0.2	< 0.1	< 0.5	< 0.5	6	
Arsenic	µg/L	0.1	< 0.2	0.1	< 0.5	< 0.5	25	
Barium	µg/L	1	389	383	297	313	1000	
Beryllium	µg/L	0.1	< 0.2	< 0.1	< 0.5	< 0.5	4	
Boron	µg/L	5	74	75	38	46	5000	
Cadmium	µg/L	0.015	< 0.028	< 0.015	< 0.070	< 0.070	2.7	
Chromium	µg/L	2	< 2	< 2	< 2	< 2	50	
Chromium (VI)	µg/L	10	< 10 [1]	< 10 [1]	< 10 [1]	< 10 [1]	25	
Cobalt	µg/L	0.1	0.4	0.4	< 0.5	< 0.5	3.8	
Copper	µg/L	2	< 2	< 2	< 2	< 2	87	
Lead	µg/L	0.02	< 0.04	< 0.02	< 0.1	< 0.1	10	
Mercury	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.29	
Molybdenum	µg/L	0.1	0.2	0.2	1.4	1.4	70	
Nickel	µg/L	10	< 10	< 10	< 10	< 10	100	
Selenium	µg/L	1	< 2	< 1	< 5	< 5	10	
Silver	µg/L	0.1	< 0.1	< 0.1	< 0.1	< 0.1	1.5	
Thallium	µg/L	0.05	< 0.1	< 0.05	< 0.3	< 0.3	2	
Uranium	µg/L	0.05	0.40	0.35	1.66	1.75	20	
Vanadium	µg/L	0.1	0.3	0.4	< 0.5	< 0.5	6.2	

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

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DATE RECEIVED: 27-Nov-19
DATE REPORTED: 05-Dec-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		101	101-II	304	308	O. Reg. 153	
	Sample I.D.		B19-38402-1	B19-38402-2	B19-38402-3	B19-38402-4	Tbl. 2 - PGW	
	Date Collected		26-Nov-19	26-Nov-19	26-Nov-19	26-Nov-19		
Parameter	**Units**	**R.L.**						
Zinc	µg/L	5	< 5	< 5	< 5	< 5	1100	

1 . Chromium (VI) result is based on total chromium

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

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Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

Christine Burke
Lab Manager

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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G85557-9 **REPORT No. B19-38402 (i)**

Report To:

Azimuth Environmental
642 Welham Rd,
Barrie ON L4N9A1 Canada
Attention: Ian Acheson

Caduceon Environmental Laboratories
112 Commerce Park Drive
Barrie ON L4N 8W8
Tel: 705-252-5743
Fax: 705-252-5746

DATE RECEIVED: 27-Nov-19
DATE REPORTED: 05-Dec-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		308-II	401a	401b	401c	O. Reg. 153	
	Sample I.D.		B19-38402-5	B19-38402-6	B19-38402-7	B19-38402-8	Tbl. 2 - PGW	
	Date Collected		26-Nov-19	27-Nov-19	27-Nov-19	27-Nov-19		
Parameter	**Units**	**R.L.**						
pH @25°C	pH Units		7.97	7.90	8.09	7.89		
Conductivity @25°C	mS/cm	0.001	2.9	2.57	2.34	3.57		
Cyanide (Free)	µg/L	5	< 5	< 5	< 5	< 5	66	
Sodium	µg/L	200	431000	320000	420000	482000	490000	
Ammonia (N)-Total	mg/L	0.01		0.17	0.08	0.08		
Antimony	µg/L	0.1	< 0.5	< 0.5	< 0.2	< 0.5	6	
Arsenic	µg/L	0.1	< 0.5	< 0.5	< 0.2	< 0.5	25	
Barium	µg/L	1	313	372	123	262	1000	
Beryllium	µg/L	0.1	< 0.5	< 0.5	< 0.2	< 0.5	4	
Boron	µg/L	5	45	40	49	44	5000	
Cadmium	µg/L	0.015	< 0.070	< 0.070	< 0.028	< 0.070	2.7	
Chromium	µg/L	2	< 2	2	< 2	< 2	50	
Chromium (VI)	µg/L	10	< 10 [1]	< 10 [1]	< 10 [1]	< 10 [1]	25	
Cobalt	µg/L	0.1	< 0.5	< 0.5	< 0.2	< 0.5	3.8	
Copper	µg/L	2	< 2	< 2	< 2	< 2	87	
Lead	µg/L	0.02	< 0.1	< 0.1	0.06	< 0.1	10	
Mercury	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.29	
Molybdenum	µg/L	0.1	1.2	< 0.5	5.7	3.0	70	
Nickel	µg/L	10	< 10	< 10	< 10	< 10	100	
Selenium	µg/L	1	< 5	< 5	< 2	< 5	10	
Silver	µg/L	0.1	< 0.1	< 0.1	< 0.1	< 0.1	1.5	
Thallium	µg/L	0.05	< 0.3	< 0.3	< 0.1	< 0.3	2	
Uranium	µg/L	0.05	1.72	1.07	1.62	2.01	20	
Vanadium	µg/L	0.1	< 0.5	< 0.5	0.6	< 0.5	6.2	

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water



Christine Burke
Lab Manager

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JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		308-II	401a	401b	401c	O. Reg. 153	
	Sample I.D.		B19-38402-5	B19-38402-6	B19-38402-7	B19-38402-8	Tbl. 2 - PGW	
	Date Collected		26-Nov-19	27-Nov-19	27-Nov-19	27-Nov-19		
Parameter	**Units**	**R.L.**						
Zinc	µg/L	5	< 5	< 5	< 5	< 5	1100	

1 . Chromium (VI) result is based on total chromium

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

Christine Burke
Lab Manager

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SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		402a	402b	402c	403a	O. Reg. 153	
	Sample I.D.		B19-38402-9	B19-38402-10	B19-38402-11	B19-38402-12	Tbl. 2 - PGW	
	Date Collected		27-Nov-19	27-Nov-19	27-Nov-19	27-Nov-19		
Parameter	**Units**	**R.L.**						
pH @25°C	pH Units		7.97	7.95	7.89	8.00		
Conductivity @25°C	mS/cm	0.001	2.22	3.66	3.66	2.23		
Cyanide (Free)	µg/L	5	< 5	< 5	< 5	< 5	66	
Sodium	µg/L	200	279000	**568000**	450000	278000	490000	
Ammonia (N)-Total	mg/L	0.01						
Antimony	µg/L	0.1	< 0.2	< 0.5	< 0.5	< 0.2	6	
Arsenic	µg/L	0.1	< 0.2	< 0.5	< 0.5	< 0.2	25	
Barium	µg/L	1	352	493	490	259	1000	
Beryllium	µg/L	0.1	< 0.2	< 0.5	< 0.5	< 0.2	4	
Boron	µg/L	5	36	53	49	39	5000	
Cadmium	µg/L	0.015	< 0.028	< 0.070	< 0.070	< 0.028	2.7	
Chromium	µg/L	2	< 2	< 2	< 2	< 2	50	
Chromium (VI)	µg/L	10	< 10 [1]	< 10 [1]	< 10 [1]	< 10 [1]	25	
Cobalt	µg/L	0.1	< 0.2	< 0.5	< 0.5	< 0.2	3.8	
Copper	µg/L	2	< 2	< 2	< 2	< 2	87	
Lead	µg/L	0.02	< 0.04	0.22	< 0.1	< 0.04	10	
Mercury	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.29	
Molybdenum	µg/L	0.1	< 0.2	2.9	0.8	0.2	70	
Nickel	µg/L	10	< 10	< 10	< 10	< 10	100	
Selenium	µg/L	1	< 2	< 5	< 5	< 2	10	
Silver	µg/L	0.1	< 0.1	< 0.1	< 0.1	< 0.1	1.5	
Thallium	µg/L	0.05	< 0.1	< 0.3	< 0.3	< 0.1	2	
Uranium	µg/L	0.05	1.33	1.95	2.20	1.24	20	
Vanadium	µg/L	0.1	0.3	< 0.5	< 0.5	0.3	6.2	

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water



Christine Burke
Lab Manager

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JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		402a	402b	402c	403a	O. Reg. 153	
	Sample I.D.		B19-38402-9	B19-38402-10	B19-38402-11	B19-38402-12	Tbl. 2 - PGW	
	Date Collected		27-Nov-19	27-Nov-19	27-Nov-19	27-Nov-19		
Parameter	**Units**	**R.L.**						
Zinc	µg/L	5	< 5	< 5	20	< 5	1100	

1 . Chromium (VI) result is based on total chromium

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

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SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		403b	403c	404a	404b	O. Reg. 153	
	Sample I.D.		B19-38402-13	B19-38402-14	B19-38402-15	B19-38402-16	Tbl. 2 - PGW	
	Date Collected		27-Nov-19	27-Nov-19	26-Nov-19	26-Nov-19		
Parameter	**Units**	**R.L.**						
pH @25°C	pH Units		7.95	7.99	8.04	7.86		
Conductivity @25°C	mS/cm	0.001	2.87	2.38	2.37	2.24		
Cyanide (Free)	µg/L	5	< 5	< 5	< 5	< 5	66	
Sodium	µg/L	200	390000	405000	302000	309000	490000	
Ammonia (N)-Total	mg/L	0.01						
Antimony	µg/L	0.1	< 0.5	< 0.5	< 0.5	< 0.2	6	
Arsenic	µg/L	0.1	< 0.5	< 0.5	< 0.5	1.8	25	
Barium	µg/L	1	372	356	221	288	1000	
Beryllium	µg/L	0.1	< 0.5	< 0.5	< 0.5	< 0.2	4	
Boron	µg/L	5	54	56	46	48	5000	
Cadmium	µg/L	0.015	< 0.070	< 0.070	< 0.070	< 0.028	2.7	
Chromium	µg/L	2	< 2	< 2	< 2	< 2	50	
Chromium (VI)	µg/L	10	< 10 [1]	< 10 [1]	< 10 [1]	< 10 [1]	25	
Cobalt	µg/L	0.1	< 0.5	< 0.5	0.9	0.4	3.8	
Copper	µg/L	2	< 2	< 2	< 2	< 2	87	
Lead	µg/L	0.02	0.14	0.12	0.59	1.45	10	
Mercury	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.29	
Molybdenum	µg/L	0.1	< 0.5	1.8	0.7	0.3	70	
Nickel	µg/L	10	< 10	< 10	< 10	< 10	100	
Selenium	µg/L	1	< 5	< 5	< 5	< 2	10	
Silver	µg/L	0.1	< 0.1	< 0.1	< 0.1	< 0.1	1.5	
Thallium	µg/L	0.05	< 0.3	< 0.3	< 0.3	< 0.1	2	
Uranium	µg/L	0.05	2.21	1.98	1.41	1.16	20	
Vanadium	µg/L	0.1	< 0.5	< 0.5	< 0.5	0.4	6.2	

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water



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Lab Manager

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SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		403b	403c	404a	404b	O. Reg. 153	
	Sample I.D.		B19-38402-13	B19-38402-14	B19-38402-15	B19-38402-16	Tbl. 2 - PGW	
	Date Collected		27-Nov-19	27-Nov-19	26-Nov-19	26-Nov-19		
Parameter	**Units**	**R.L.**						
Zinc	µg/L	5	< 5	< 5	< 5	< 5	1100	

1 . Chromium (VI) result is based on total chromium

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

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JOB/PROJECT NO.: 41 Essa
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	Client I.D.		404c	405a	406a	406b	O. Reg. 153	
	Sample I.D.		B19-38402-17	B19-38402-18	B19-38402-19	B19-38402-20	Tbl. 2 - PGW	
	Date Collected		26-Nov-19	26-Nov-19	26-Nov-19	26-Nov-19		
Parameter	**Units**	**R.L.**						
pH @25°C	pH Units		7.85	7.98	7.96	8.08		
Conductivity @25°C	mS/cm	0.001	2.57	2.03	2.4	1.66		
Cyanide (Free)	µg/L	5	< 5	< 5	< 5	< 5	66	
Sodium	µg/L	200	361000	247000	289000	188000	490000	
Ammonia (N)-Total	mg/L	0.01						
Antimony	µg/L	0.1	< 0.5	< 0.2	< 0.5	0.6	6	
Arsenic	µg/L	0.1	1.5	< 0.2	< 0.5	0.2	25	
Barium	µg/L	1	305	246	299	104	1000	
Beryllium	µg/L	0.1	< 0.5	< 0.2	< 0.5	< 0.2	4	
Boron	µg/L	5	80	40	51	135	5000	
Cadmium	µg/L	0.015	< 0.070	< 0.028	< 0.070	< 0.028	2.7	
Chromium	µg/L	2	< 2	< 2	< 2	< 2	50	
Chromium (VI)	µg/L	10	< 10 [1]	< 10 [1]	< 10 [1]	< 10 [1]	25	
Cobalt	µg/L	0.1	1.6	< 0.2	< 0.5	1.1	3.8	
Copper	µg/L	2	< 2	< 2	< 2	< 2	87	
Lead	µg/L	0.02	4.27	< 0.04	0.63	9.81	10	
Mercury	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.29	
Molybdenum	µg/L	0.1	0.7	0.3	0.6	0.5	70	
Nickel	µg/L	10	< 10	< 10	< 10	< 10	100	
Selenium	µg/L	1	< 5	< 2	< 5	< 2	10	
Silver	µg/L	0.1	< 0.1	< 0.1	< 0.1	< 0.1	1.5	
Thallium	µg/L	0.05	< 0.3	< 0.1	< 0.3	< 0.1	2	
Uranium	µg/L	0.05	1.37	2.84	1.57	0.48	20	
Vanadium	µg/L	0.1	0.8	0.3	< 0.5	0.4	6.2	

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

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Lab Manager

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JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		404c	405a	406a	406b	O. Reg. 153	
	Sample I.D.		B19-38402-17	B19-38402-18	B19-38402-19	B19-38402-20	Tbl. 2 - PGW	
	Date Collected		26-Nov-19	26-Nov-19	26-Nov-19	26-Nov-19		
Parameter	**Units**	**R.L.**						
Zinc	µg/L	5	< 5	< 5	< 5	8	1100	

1 . Chromium (VI) result is based on total chromium

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JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		406c	407a	407b	407c	O. Reg. 153	
	Sample I.D.		B19-38402-21	B19-38402-22	B19-38402-23	B19-38402-24	Tbl. 2 - PGW	
	Date Collected		26-Nov-19	27-Nov-19	27-Nov-19	27-Nov-19		
Parameter	**Units**	**R.L.**						
pH @25°C	pH Units		7.89	7.87	7.87	7.76		
Conductivity @25°C	mS/cm	0.001	2.37	2.9	3.26	3.3		
Cyanide (Free)	µg/L	5	< 5	< 5	< 5	< 5	66	
Sodium	µg/L	200	283000	315000	358000	323000	490000	
Ammonia (N)-Total	mg/L	0.01						
Antimony	µg/L	0.1	0.1	< 0.5	< 0.5	< 0.5	6	
Arsenic	µg/L	0.1	1.1	< 0.5	< 0.5	< 0.5	25	
Barium	µg/L	1	188	413	770	963	1000	
Beryllium	µg/L	0.1	< 0.1	< 0.5	< 0.5	< 0.5	4	
Boron	µg/L	5	75	49	63	71	5000	
Cadmium	µg/L	0.015	< 0.015	< 0.070	< 0.070	< 0.070	2.7	
Chromium	µg/L	2	< 2	< 2	< 2	< 2	50	
Chromium (VI)	µg/L	10	< 10 [1]	< 10 [1]	< 10 [1]	< 10 [1]	25	
Cobalt	µg/L	0.1	0.5	< 0.5	< 0.5	< 0.5	3.8	
Copper	µg/L	2	< 2	< 2	< 2	< 2	87	
Lead	µg/L	0.02	3.02	0.16	< 0.1	< 0.1	10	
Mercury	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.29	
Molybdenum	µg/L	0.1	1.1	< 0.5	< 0.5	< 0.5	70	
Nickel	µg/L	10	< 10	< 10	< 10	< 10	100	
Selenium	µg/L	1	< 1	< 5	< 5	< 5	10	
Silver	µg/L	0.1	< 0.1	< 0.1	< 0.1	< 0.1	1.5	
Thallium	µg/L	0.05	< 0.05	< 0.3	< 0.3	< 0.3	2	
Uranium	µg/L	0.05	0.46	2.85	3.69	3.54	20	
Vanadium	µg/L	0.1	0.5	< 0.5	< 0.5	< 0.5	6.2	

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water



Christine Burke
Lab Manager

R.L. = Reporting Limit
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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G85557-9 **REPORT No. B19-38402 (i)**

Report To:

Azimuth Environmental
642 Welham Rd,
Barrie ON L4N9A1 Canada
Attention: Ian Acheson

Caduceon Environmental Laboratories
112 Commerce Park Drive
Barrie ON L4N 8W8
Tel: 705-252-5743
Fax: 705-252-5746

DATE RECEIVED: 27-Nov-19
DATE REPORTED: 05-Dec-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		406c	407a	407b	407c	O. Reg. 153	
	Sample I.D.		B19-38402-21	B19-38402-22	B19-38402-23	B19-38402-24	Tbl. 2 - PGW	
	Date Collected		26-Nov-19	27-Nov-19	27-Nov-19	27-Nov-19		
Parameter	**Units**	**R.L.**						
Zinc	µg/L	5	< 5	< 5	< 5	< 5	1100	

1 . Chromium (VI) result is based on total chromium

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

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SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		408	305			O. Reg. 153	
	Sample I.D.		B19-38402-25	B19-38402-26			Tbl. 2 - PGW	
	Date Collected		26-Nov-19	26-Nov-19				
Parameter	**Units**	**R.L.**						
pH @25°C	pH Units		7.99	7.97				
Conductivity @25°C	mS/cm	0.001	2.08	2.34				
Cyanide (Free)	µg/L	5	< 5	< 5			66	
Sodium	µg/L	200	228000	272000			490000	
Ammonia (N)-Total	mg/L	0.01	0.09					
Antimony	µg/L	0.1	< 0.2	< 0.5			6	
Arsenic	µg/L	0.1	< 0.2	2.3			25	
Barium	µg/L	1	132	161			1000	
Beryllium	µg/L	0.1	< 0.2	< 0.5			4	
Boron	µg/L	5	53	31			5000	
Cadmium	µg/L	0.015	< 0.028	< 0.070			2.7	
Chromium	µg/L	2	< 2	< 2			50	
Chromium (VI)	µg/L	10	< 10 [1]	< 10 [1]			25	
Cobalt	µg/L	0.1	0.3	< 0.5			3.8	
Copper	µg/L	2	< 2	< 2			87	
Lead	µg/L	0.02	< 0.04	0.17			10	
Mercury	µg/L	0.02	< 0.02	< 0.02			0.29	
Molybdenum	µg/L	0.1	0.3	0.7			70	
Nickel	µg/L	10	< 10	< 10			100	
Selenium	µg/L	1	< 2	< 5			10	
Silver	µg/L	0.1	< 0.1	< 0.1			1.5	
Thallium	µg/L	0.05	< 0.1	< 0.3			2	
Uranium	µg/L	0.05	1.93	0.32			20	
Vanadium	µg/L	0.1	0.5	< 0.5			6.2	

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

Christine Burke
Lab Manager

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JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		408	305			O. Reg. 153	
	Sample I.D.		B19-38402-25	B19-38402-26			Tbl. 2 - PGW	
	Date Collected		26-Nov-19	26-Nov-19				
Parameter	**Units**	**R.L.**						
Zinc	µg/L	5	< 5	< 5			1100	

1 . Chromium (VI) result is based on total chromium

O. Reg. 153 - Soil, Ground Water and Sediment Standards
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Summary of Exceedances

Table 2 - Potable Ground Water

402b	Found Value	Limit
Sodium (µg/L)	568000	490000

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Parameter	Qty	Site Analyzed	Analyst Initials	Date Analyzed	Lab Method	Reference Method
PHC(F2-F4)	26	Kingston	KPR	29-Nov-19	C-PHC-W-001 (k)	MOE E3421
VOC's	26	Richmond Hill	JE	02-Dec-19	C-VOC-02 (rh)	EPA 8260
PHC(F1)	26	Richmond Hill	JE	03-Dec-19	C-VPHW-01 (rh)	MOE E3421

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

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JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		101	101-II	304	308	O. Reg. 153	
	Sample I.D.		B19-38402-1	B19-38402-2	B19-38402-3	B19-38402-4	Tbl. 2 - PGW	
	Date Collected		26-Nov-19	26-Nov-19	26-Nov-19	26-Nov-19		
Parameter	**Units**	**R.L.**						
Acetone	µg/L	30	< 30	< 30	< 30	< 30	2700	
Benzene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	5	
Bromodichloromethane	µg/L	2	< 2	< 2	< 2	< 2	16	
Bromoform	µg/L	5	< 5	< 5	< 5	< 5	25	
Bromomethane	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.89	
Carbon Tetrachloride	µg/L	0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.79	
Monochlorobenzene (Chlorobenzene)	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	30	
Chloroform	µg/L	1	< 1	< 1	< 1	< 1	2.4	
Dibromochloromethane	µg/L	2	< 2	< 2	< 2	< 2	25	
Dichlorobenzene,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	3	
Dichlorobenzene,1,3-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	59	
Dichlorobenzene,1,4-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1	
Dichlorodifluoromethane	µg/L	2	< 2	< 2	< 2	< 2	590	
Dichloroethane,1,1-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	5	
Dichloroethane,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Dichloroethylene,1,1-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Dichloroethene, cis-1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Dichloroethene, trans-1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Dichloropropane,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	5	
Dichloropropene, cis-1,3-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5		
Dichloropropene, trans-1,3-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5		

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	Client I.D.		101	101-II	304	308	O. Reg. 153	
	Sample I.D.		B19-38402-1	B19-38402-2	B19-38402-3	B19-38402-4	Tbl. 2 - PGW	
	Date Collected		26-Nov-19	26-Nov-19	26-Nov-19	26-Nov-19		
Parameter	**Units**	**R.L.**						
Dichloropropene 1,3-cis+trans	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.5	
Ethylbenzene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	2.4	
Dibromoethane,1,2-(Ethylene Dibromide)	µg/L	0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.2	
Hexane	µg/L	5	< 5	< 5	< 5	< 5	51	
Methyl Ethyl Ketone	µg/L	20	< 20	< 20	< 20	< 20	1800	
Methyl Isobutyl Ketone	µg/L	20	< 20	< 20	< 20	< 20	640	
Methyl-t-butyl Ether	µg/L	2	< 2	< 2	< 2	< 2	15	
Dichloromethane (Methylene Chloride)	µg/L	5	< 5	< 5	< 5	< 5	50	
Styrene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	5.4	
Tetrachloroethane,1,1,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.1	
Tetrachloroethane,1,1,2,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1	
Tetrachloroethylene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Toluene	µg/L	0.5	< 0.5	0.6	< 0.5	< 0.5	24	
Trichloroethane,1,1,1-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	200	
Trichloroethane,1,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	4.7	
Trichloroethylene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Trichlorofluoromethane	µg/L	5	< 5	< 5	< 5	< 5	150	
Vinyl Chloride	µg/L	0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.5	
Xylene, m,p-	µg/L	1.0	< 1.0	< 1.0	< 1.0	< 1.0		
Xylene, o-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5		

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	Client I.D.		101	101-II	304	308	O. Reg. 153	
	Sample I.D.		B19-38402-1	B19-38402-2	B19-38402-3	B19-38402-4	Tbl. 2 - PGW	
	Date Collected		26-Nov-19	26-Nov-19	26-Nov-19	26-Nov-19		
Parameter	**Units**	**R.L.**						
Xylene, m,p,o-	µg/L	1.1	< 1.1	< 1.1	< 1.1	< 1.1	300	
PHC F1 (C6-C10)	µg/L	50	< 50	< 50	< 50	< 50	750	
PHC F2 (>C10-C16)	µg/L	50	< 50	< 50	< 50	< 50	150	
PHC F3 (>C16-C34)	µg/L	400	< 400	< 400	< 400	**700**	500	
PHC F4 (>C34-C50)	µg/L	400	< 400	< 400	< 400	< 400	500	

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Tbl. 2 - PGW - Table 2 - Potable Ground Water

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	Client I.D.		308-II	401a	401b	401c	O. Reg. 153	
	Sample I.D.		B19-38402-5	B19-38402-6	B19-38402-7	B19-38402-8	Tbl. 2 - PGW	
	Date Collected		26-Nov-19	27-Nov-19	27-Nov-19	27-Nov-19		
Parameter	**Units**	**R.L.**						
Acetone	µg/L	30	< 30	< 30	< 30	< 30	2700	
Benzene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	5	
Bromodichloromethane	µg/L	2	< 2	< 2	< 2	< 2	16	
Bromoform	µg/L	5	< 5	< 5	< 5	< 5	25	
Bromomethane	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.89	
Carbon Tetrachloride	µg/L	0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.79	
Monochlorobenzene (Chlorobenzene)	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	30	
Chloroform	µg/L	1	< 1	< 1	< 1	< 1	2.4	
Dibromochloromethane	µg/L	2	< 2	< 2	< 2	< 2	25	
Dichlorobenzene,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	3	
Dichlorobenzene,1,3-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	59	
Dichlorobenzene,1,4-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1	
Dichlorodifluoromethane	µg/L	2	< 2	< 2	< 2	< 2	590	
Dichloroethane,1,1-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	5	
Dichloroethane,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Dichloroethylene,1,1-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Dichloroethene, cis-1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Dichloroethene, trans-1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Dichloropropane,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	5	
Dichloropropene, cis-1,3-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5		
Dichloropropene, trans-1,3-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5		

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	Sample I.D.		B19-38402-5	B19-38402-6	B19-38402-7	B19-38402-8	Tbl. 2 - PGW	
	Date Collected		26-Nov-19	27-Nov-19	27-Nov-19	27-Nov-19		
Parameter	**Units**	**R.L.**						
Dichloropropene 1,3-cis+trans	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.5	
Ethylbenzene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	2.4	
Dibromoethane,1,2-(Ethylene Dibromide)	µg/L	0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.2	
Hexane	µg/L	5	< 5	< 5	< 5	< 5	51	
Methyl Ethyl Ketone	µg/L	20	< 20	< 20	< 20	< 20	1800	
Methyl Isobutyl Ketone	µg/L	20	< 20	< 20	< 20	< 20	640	
Methyl-t-butyl Ether	µg/L	2	< 2	< 2	< 2	< 2	15	
Dichloromethane (Methylene Chloride)	µg/L	5	< 5	< 5	< 5	< 5	50	
Styrene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	5.4	
Tetrachloroethane,1,1,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.1	
Tetrachloroethane,1,1,2,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1	
Tetrachloroethylene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Toluene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	24	
Trichloroethane,1,1,1-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	200	
Trichloroethane,1,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	4.7	
Trichloroethylene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Trichlorofluoromethane	µg/L	5	< 5	< 5	< 5	< 5	150	
Vinyl Chloride	µg/L	0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.5	
Xylene, m,p-	µg/L	1.0	< 1.0	< 1.0	< 1.0	< 1.0		
Xylene, o-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5		

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

Christine Burke
Lab Manager

R.L. = Reporting Limit
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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G85557-9 **REPORT No. B19-38402 (ii)**

Report To:

Azimuth Environmental
642 Welham Rd,
Barrie ON L4N9A1 Canada
Attention: Ian Acheson

Caduceon Environmental Laboratories
112 Commerce Park Drive
Barrie ON L4N 8W8
Tel: 705-252-5743
Fax: 705-252-5746

DATE RECEIVED: 27-Nov-19
DATE REPORTED: 05-Dec-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		308-II	401a	401b	401c	O. Reg. 153	
	Sample I.D.		B19-38402-5	B19-38402-6	B19-38402-7	B19-38402-8	Tbl. 2 - PGW	
	Date Collected		26-Nov-19	27-Nov-19	27-Nov-19	27-Nov-19		
Parameter	**Units**	**R.L.**						
Xylene, m,p,o-	µg/L	1.1	< 1.1	< 1.1	< 1.1	< 1.1	300	
PHC F1 (C6-C10)	µg/L	50	< 50	< 50	< 50	< 50	750	
PHC F2 (>C10-C16)	µg/L	50	< 50	< 50	< 50	< 50	150	
PHC F3 (>C16-C34)	µg/L	400	< 400	< 400	< 400	< 400	500	
PHC F4 (>C34-C50)	µg/L	400	< 400	< 400	< 400	< 400	500	

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

Christine Burke
Lab Manager

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SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		402a	402b	402c	403a	O. Reg. 153	
	Sample I.D.		B19-38402-9	B19-38402-10	B19-38402-11	B19-38402-12	Tbl. 2 - PGW	
	Date Collected		27-Nov-19	27-Nov-19	27-Nov-19	27-Nov-19		
Parameter	**Units**	**R.L.**						
Acetone	µg/L	30	< 30	< 30	< 30	< 30	2700	
Benzene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	5	
Bromodichloromethane	µg/L	2	< 2	< 2	< 2	< 2	16	
Bromoform	µg/L	5	< 5	< 5	< 5	< 5	25	
Bromomethane	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.89	
Carbon Tetrachloride	µg/L	0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.79	
Monochlorobenzene (Chlorobenzene)	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	30	
Chloroform	µg/L	1	< 1	< 1	< 1	< 1	2.4	
Dibromochloromethane	µg/L	2	< 2	< 2	< 2	< 2	25	
Dichlorobenzene,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	3	
Dichlorobenzene,1,3-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	59	
Dichlorobenzene,1,4-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1	
Dichlorodifluoromethane	µg/L	2	< 2	< 2	< 2	< 2	590	
Dichloroethane,1,1-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	5	
Dichloroethane,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Dichloroethylene,1,1-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Dichloroethene, cis-1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Dichloroethene, trans-1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Dichloropropane,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	5	
Dichloropropene, cis-1,3-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5		
Dichloropropene, trans-1,3-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5		

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Christine Burke
Lab Manager

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SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		402a	402b	402c	403a	O. Reg. 153	
	Sample I.D.		B19-38402-9	B19-38402-10	B19-38402-11	B19-38402-12	Tbl. 2 - PGW	
	Date Collected		27-Nov-19	27-Nov-19	27-Nov-19	27-Nov-19		
Parameter	**Units**	**R.L.**						
Dichloropropene 1,3-cis+trans	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.5	
Ethylbenzene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	2.4	
Dibromoethane,1,2-(Ethylene Dibromide)	µg/L	0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.2	
Hexane	µg/L	5	< 5	< 5	< 5	< 5	51	
Methyl Ethyl Ketone	µg/L	20	< 20	< 20	< 20	< 20	1800	
Methyl Isobutyl Ketone	µg/L	20	< 20	< 20	< 20	< 20	640	
Methyl-t-butyl Ether	µg/L	2	< 2	< 2	< 2	< 2	15	
Dichloromethane (Methylene Chloride)	µg/L	5	< 5	< 5	< 5	< 5	50	
Styrene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	5.4	
Tetrachloroethane,1,1,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.1	
Tetrachloroethane,1,1,2,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1	
Tetrachloroethylene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Toluene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	24	
Trichloroethane,1,1,1-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	200	
Trichloroethane,1,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	4.7	
Trichloroethylene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Trichlorofluoromethane	µg/L	5	< 5	< 5	< 5	< 5	150	
Vinyl Chloride	µg/L	0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.5	
Xylene, m,p-	µg/L	1.0	< 1.0	< 1.0	< 1.0	< 1.0		
Xylene, o-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5		

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

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JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		402a	402b	402c	403a	O. Reg. 153	
	Sample I.D.		B19-38402-9	B19-38402-10	B19-38402-11	B19-38402-12	Tbl. 2 - PGW	
	Date Collected		27-Nov-19	27-Nov-19	27-Nov-19	27-Nov-19		
Parameter	**Units**	**R.L.**						
Xylene, m,p,o-	µg/L	1.1	< 1.1	< 1.1	< 1.1	< 1.1	300	
PHC F1 (C6-C10)	µg/L	50	< 50	< 50	< 50	< 50	750	
PHC F2 (>C10-C16)	µg/L	50	< 50	< 50	< 50	< 50	150	
PHC F3 (>C16-C34)	µg/L	400	< 400	< 400	< 400	< 400	500	
PHC F4 (>C34-C50)	µg/L	400	< 400	< 400	< 400	< 400	500	

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water



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Lab Manager

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SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		403b	403c	404a	404b	O. Reg. 153	
	Sample I.D.		B19-38402-13	B19-38402-14	B19-38402-15	B19-38402-16	Tbl. 2 - PGW	
	Date Collected		27-Nov-19	27-Nov-19	26-Nov-19	26-Nov-19		
Parameter	**Units**	**R.L.**						
Acetone	µg/L	30	< 30	< 30	< 30	< 30	2700	
Benzene	µg/L	0.5	< 0.5	< 0.5	< 0.5	4.0	5	
Bromodichloromethane	µg/L	2	< 2	< 2	< 2	< 2	16	
Bromoform	µg/L	5	< 5	< 5	< 5	< 5	25	
Bromomethane	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.89	
Carbon Tetrachloride	µg/L	0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.79	
Monochlorobenzene (Chlorobenzene)	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	30	
Chloroform	µg/L	1	< 1	< 1	< 1	< 1	2.4	
Dibromochloromethane	µg/L	2	< 2	< 2	< 2	< 2	25	
Dichlorobenzene,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	3	
Dichlorobenzene,1,3-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	59	
Dichlorobenzene,1,4-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1	
Dichlorodifluoromethane	µg/L	2	< 2	< 2	< 2	< 2	590	
Dichloroethane,1,1-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	5	
Dichloroethane,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Dichloroethylene,1,1-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Dichloroethene, cis-1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Dichloroethene, trans-1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Dichloropropane,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	5	
Dichloropropene, cis-1,3-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5		
Dichloropropene, trans-1,3-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5		

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JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		403b	403c	404a	404b	O. Reg. 153	
	Sample I.D.		B19-38402-13	B19-38402-14	B19-38402-15	B19-38402-16	Tbl. 2 - PGW	
	Date Collected		27-Nov-19	27-Nov-19	26-Nov-19	26-Nov-19		
Parameter	**Units**	**R.L.**						
Dichloropropene 1,3-cis+trans	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.5	
Ethylbenzene	µg/L	0.5	< 0.5	< 0.5	**113**	**1890**	2.4	
Dibromoethane,1,2-(Ethylene Dibromide)	µg/L	0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.2	
Hexane	µg/L	5	< 5	< 5	9	**119**	51	
Methyl Ethyl Ketone	µg/L	20	< 20	< 20	< 20	50	1800	
Methyl Isobutyl Ketone	µg/L	20	< 20	< 20	< 20	< 20	640	
Methyl-t-butyl Ether	µg/L	2	< 2	< 2	< 2	< 2	15	
Dichloromethane (Methylene Chloride)	µg/L	5	< 5	< 5	< 5	< 5	50	
Styrene	µg/L	0.5	< 0.5	< 0.5	1.7	**47.3**	5.4	
Tetrachloroethane,1,1,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.1	
Tetrachloroethane,1,1,2,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1	
Tetrachloroethylene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Toluene	µg/L	0.5	< 0.5	< 0.5	18.8	**418**	24	
Trichloroethane,1,1,1-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	200	
Trichloroethane,1,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	4.7	
Trichloroethylene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Trichlorofluoromethane	µg/L	5	< 5	< 5	< 5	< 5	150	
Vinyl Chloride	µg/L	0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.5	
Xylene, m,p-	µg/L	1.0	< 1.0	< 1.0	919	12200		
Xylene, o-	µg/L	0.5	< 0.5	< 0.5	298	3790		

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	Client I.D.		403b	403c	404a	404b	O. Reg. 153	
	Sample I.D.		B19-38402-13	B19-38402-14	B19-38402-15	B19-38402-16	Tbl. 2 - PGW	
	Date Collected		27-Nov-19	27-Nov-19	26-Nov-19	26-Nov-19		
Parameter	**Units**	**R.L.**						
Xylene, m,p,o-	µg/L	1.1	< 1.1	< 1.1	**1220**	**16000**	300	
PHC F1 (C6-C10)	µg/L	50	< 50	< 50	**2280**	**31700**	750	
PHC F2 (>C10-C16)	µg/L	50	< 50	< 50	**180**	**2020**	150	
PHC F3 (>C16-C34)	µg/L	400	< 400	< 400	< 400	< 400	500	
PHC F4 (>C34-C50)	µg/L	400	< 400	< 400	< 400	< 400	500	

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Tbl. 2 - PGW - Table 2 - Potable Ground Water

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SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		404c	405a	406a	406b	O. Reg. 153	
	Sample I.D.		B19-38402-17	B19-38402-18	B19-38402-19	B19-38402-20	Tbl. 2 - PGW	
	Date Collected		26-Nov-19	26-Nov-19	26-Nov-19	26-Nov-19		
Parameter	**Units**	**R.L.**						
Acetone	µg/L	30	< 30	< 30	< 30	< 30	2700	
Benzene	µg/L	0.5	**10.9**	< 0.5	< 0.5	< 0.5	5	
Bromodichloromethane	µg/L	2	< 2	< 2	< 2	< 2	16	
Bromoform	µg/L	5	< 5	< 5	< 5	< 5	25	
Bromomethane	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.89	
Carbon Tetrachloride	µg/L	0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.79	
Monochlorobenzene (Chlorobenzene)	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	30	
Chloroform	µg/L	1	< 1	< 1	< 1	< 1	2.4	
Dibromochloromethane	µg/L	2	< 2	< 2	< 2	< 2	25	
Dichlorobenzene,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	3	
Dichlorobenzene,1,3-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	59	
Dichlorobenzene,1,4-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1	
Dichlorodifluoromethane	µg/L	2	< 2	< 2	< 2	< 2	590	
Dichloroethane,1,1-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	5	
Dichloroethane,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Dichloroethylene,1,1-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Dichloroethene, cis-1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Dichloroethene, trans-1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Dichloropropane,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	5	
Dichloropropene, cis-1,3-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5		
Dichloropropene, trans-1,3-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5		

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

Christine Burke
Lab Manager

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Final Report

C.O.C.: G85557-9 **REPORT No. B19-38402 (ii)**

Report To:

Azimuth Environmental
642 Welham Rd,
Barrie ON L4N9A1 Canada
Attention: Ian Acheson

Caduceon Environmental Laboratories
112 Commerce Park Drive
Barrie ON L4N 8W8
Tel: 705-252-5743
Fax: 705-252-5746

DATE RECEIVED: 27-Nov-19
DATE REPORTED: 05-Dec-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		404c	405a	406a	406b	O. Reg. 153	
	Sample I.D.		B19-38402-17	B19-38402-18	B19-38402-19	B19-38402-20	Tbl. 2 - PGW	
	Date Collected		26-Nov-19	26-Nov-19	26-Nov-19	26-Nov-19		
Parameter	**Units**	**R.L.**						
Dichloropropene 1,3-cis+trans	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.5	
Ethylbenzene	µg/L	0.5	**558**	< 0.5	< 0.5	**5.7**	2.4	
Dibromoethane,1,2-(Ethylene Dibromide)	µg/L	0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.2	
Hexane	µg/L	5	8	< 5	< 5	13	51	
Methyl Ethyl Ketone	µg/L	20	< 20	< 20	< 20	< 20	1800	
Methyl Isobutyl Ketone	µg/L	20	< 20	< 20	< 20	< 20	640	
Methyl-t-butyl Ether	µg/L	2	< 2	< 2	< 2	< 2	15	
Dichloromethane (Methylene Chloride)	µg/L	5	< 5	< 5	< 5	< 5	50	
Styrene	µg/L	0.5	**13.1**	< 0.5	< 0.5	< 0.5	5.4	
Tetrachloroethane,1,1,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.1	
Tetrachloroethane,1,1,2,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1	
Tetrachloroethylene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Toluene	µg/L	0.5	**489**	< 0.5	0.5	< 0.5	24	
Trichloroethane,1,1,1-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	200	
Trichloroethane,1,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	4.7	
Trichloroethylene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Trichlorofluoromethane	µg/L	5	< 5	< 5	< 5	< 5	150	
Vinyl Chloride	µg/L	0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.5	
Xylene, m,p-	µg/L	1.0	3170	< 1.0	1.9	59.8		
Xylene, o-	µg/L	0.5	1090	< 0.5	< 0.5	2.3		

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

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Lab Manager

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SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		404c	405a	406a	406b	O. Reg. 153	
	Sample I.D.		B19-38402-17	B19-38402-18	B19-38402-19	B19-38402-20	Tbl. 2 - PGW	
	Date Collected		26-Nov-19	26-Nov-19	26-Nov-19	26-Nov-19		
Parameter	**Units**	**R.L.**						
Xylene, m,p,o-	µg/L	1.1	**4260**	< 1.1	2.0	62.1	300	
PHC F1 (C6-C10)	µg/L	50	**10600**	< 50	400	**5400**	750	
PHC F2 (>C10-C16)	µg/L	50	**1350**	< 50	**250**	**1390**	150	
PHC F3 (>C16-C34)	µg/L	400	< 400	< 400	< 400	< 400	500	
PHC F4 (>C34-C50)	µg/L	400	< 400	< 400	< 400	< 400	500	

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

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Christine Burke
Lab Manager

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SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		406c	407a	407b	407c	O. Reg. 153	
	Sample I.D.		B19-38402-21	B19-38402-22	B19-38402-23	B19-38402-24	Tbl. 2 - PGW	
	Date Collected		26-Nov-19	27-Nov-19	27-Nov-19	27-Nov-19		
Parameter	**Units**	**R.L.**						
Acetone	µg/L	30	< 30	< 30	< 30	< 30	2700	
Benzene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	5	
Bromodichloromethane	µg/L	2	< 2	< 2	< 2	< 2	16	
Bromoform	µg/L	5	< 5	< 5	< 5	< 5	25	
Bromomethane	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.89	
Carbon Tetrachloride	µg/L	0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.79	
Monochlorobenzene (Chlorobenzene)	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	30	
Chloroform	µg/L	1	< 1	< 1	< 1	< 1	2.4	
Dibromochloromethane	µg/L	2	< 2	< 2	< 2	< 2	25	
Dichlorobenzene,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	3	
Dichlorobenzene,1,3-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	59	
Dichlorobenzene,1,4-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1	
Dichlorodifluoromethane	µg/L	2	< 2	< 2	< 2	< 2	590	
Dichloroethane,1,1-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	5	
Dichloroethane,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Dichloroethylene,1,1-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Dichloroethene, cis-1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Dichloroethene, trans-1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Dichloropropane,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	5	
Dichloropropene, cis-1,3-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5		
Dichloropropene, trans-1,3-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5		

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

Christine Burke
Lab Manager

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Attention: Ian Acheson

Caduceon Environmental Laboratories
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Tel: 705-252-5743
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DATE RECEIVED: 27-Nov-19
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SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		406c	407a	407b	407c	O. Reg. 153	
	Sample I.D.		B19-38402-21	B19-38402-22	B19-38402-23	B19-38402-24	Tbl. 2 - PGW	
	Date Collected		26-Nov-19	27-Nov-19	27-Nov-19	27-Nov-19		
Parameter	**Units**	**R.L.**						
Dichloropropene 1,3-cis+trans	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.5	
Ethylbenzene	µg/L	0.5	**70.7**	< 0.5	< 0.5	< 0.5	2.4	
Dibromoethane,1,2-(Ethylene Dibromide)	µg/L	0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.2	
Hexane	µg/L	5	**67**	< 5	< 5	< 5	51	
Methyl Ethyl Ketone	µg/L	20	30	< 20	< 20	< 20	1800	
Methyl Isobutyl Ketone	µg/L	20	< 20	< 20	< 20	< 20	640	
Methyl-t-butyl Ether	µg/L	2	< 2	< 2	< 2	< 2	15	
Dichloromethane (Methylene Chloride)	µg/L	5	< 5	< 5	< 5	< 5	50	
Styrene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	5.4	
Tetrachloroethane,1,1,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.1	
Tetrachloroethane,1,1,2,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1	
Tetrachloroethylene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Toluene	µg/L	0.5	0.7	< 0.5	< 0.5	< 0.5	24	
Trichloroethane,1,1,1-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	200	
Trichloroethane,1,1,2-	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	4.7	
Trichloroethylene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.6	
Trichlorofluoromethane	µg/L	5	< 5	< 5	< 5	< 5	150	
Vinyl Chloride	µg/L	0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.5	
Xylene, m,p-	µg/L	1.0	453	< 1.0	< 1.0	< 1.0		
Xylene, o-	µg/L	0.5	3.2	< 0.5	< 0.5	< 0.5		

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

Christine Burke
Lab Manager

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SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		406c	407a	407b	407c	O. Reg. 153	
	Sample I.D.		B19-38402-21	B19-38402-22	B19-38402-23	B19-38402-24	Tbl. 2 - PGW	
	Date Collected		26-Nov-19	27-Nov-19	27-Nov-19	27-Nov-19		
Parameter	**Units**	**R.L.**						
Xylene, m,p,o-	µg/L	1.1	**456**	< 1.1	< 1.1	< 1.1	300	
PHC F1 (C6-C10)	µg/L	50	**9370**	< 50	< 50	< 50	750	
PHC F2 (>C10-C16)	µg/L	50	**4790**	< 50	< 50	< 50	150	
PHC F3 (>C16-C34)	µg/L	400	< 400	< 400	< 400	< 400	500	
PHC F4 (>C34-C50)	µg/L	400	< 400	< 400	< 400	< 400	500	

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

Christine Burke
Lab Manager

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SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		408	305			O. Reg. 153	
	Sample I.D.		B19-38402-25	B19-38402-26			Tbl. 2 - PGW	
	Date Collected		26-Nov-19	26-Nov-19				
Parameter	**Units**	**R.L.**						
Acetone	µg/L	30	< 30	< 30			2700	
Benzene	µg/L	0.5	< 0.5	< 0.5			5	
Bromodichloromethane	µg/L	2	< 2	< 2			16	
Bromoform	µg/L	5	< 5	< 5			25	
Bromomethane	µg/L	0.5	< 0.5	< 0.5			0.89	
Carbon Tetrachloride	µg/L	0.2	< 0.2	< 0.2			0.79	
Monochlorobenzene (Chlorobenzene)	µg/L	0.5	< 0.5	< 0.5			30	
Chloroform	µg/L	1	< 1	< 1			2.4	
Dibromochloromethane	µg/L	2	< 2	< 2			25	
Dichlorobenzene,1,2-	µg/L	0.5	< 0.5	< 0.5			3	
Dichlorobenzene,1,3-	µg/L	0.5	< 0.5	< 0.5			59	
Dichlorobenzene,1,4-	µg/L	0.5	< 0.5	< 0.5			1	
Dichlorodifluoromethane	µg/L	2	< 2	< 2			590	
Dichloroethane,1,1-	µg/L	0.5	< 0.5	< 0.5			5	
Dichloroethane,1,2-	µg/L	0.5	< 0.5	< 0.5			1.6	
Dichloroethylene,1,1-	µg/L	0.5	< 0.5	< 0.5			1.6	
Dichloroethene, cis-1,2-	µg/L	0.5	< 0.5	< 0.5			1.6	
Dichloroethene, trans-1,2-	µg/L	0.5	< 0.5	< 0.5			1.6	
Dichloropropane,1,2-	µg/L	0.5	< 0.5	< 0.5			5	
Dichloropropene, cis-1,3-	µg/L	0.5	< 0.5	< 0.5				
Dichloropropene, trans-1,3-	µg/L	0.5	< 0.5	< 0.5				

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

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SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		408	305			O. Reg. 153	
	Sample I.D.		B19-38402-25	B19-38402-26			Tbl. 2 - PGW	
	Date Collected		26-Nov-19	26-Nov-19				
Parameter	**Units**	**R.L.**						
Dichloropropene 1,3-cis+trans	µg/L	0.5	< 0.5	< 0.5			0.5	
Ethylbenzene	µg/L	0.5	< 0.5	< 0.5			2.4	
Dibromoethane,1,2-(Ethylene Dibromide)	µg/L	0.2	< 0.2	< 0.2			0.2	
Hexane	µg/L	5	< 5	< 5			51	
Methyl Ethyl Ketone	µg/L	20	< 20	< 20			1800	
Methyl Isobutyl Ketone	µg/L	20	< 20	< 20			640	
Methyl-t-butyl Ether	µg/L	2	< 2	< 2			15	
Dichloromethane (Methylene Chloride)	µg/L	5	< 5	< 5			50	
Styrene	µg/L	0.5	< 0.5	< 0.5			5.4	
Tetrachloroethane,1,1,1,2-	µg/L	0.5	< 0.5	< 0.5			1.1	
Tetrachloroethane,1,1,2,2-	µg/L	0.5	< 0.5	< 0.5			1	
Tetrachloroethylene	µg/L	0.5	< 0.5	< 0.5			1.6	
Toluene	µg/L	0.5	0.5	< 0.5			24	
Trichloroethane,1,1,1-	µg/L	0.5	< 0.5	< 0.5			200	
Trichloroethane,1,1,2-	µg/L	0.5	< 0.5	< 0.5			4.7	
Trichloroethylene	µg/L	0.5	< 0.5	< 0.5			1.6	
Trichlorofluoromethane	µg/L	5	< 5	< 5			150	
Vinyl Chloride	µg/L	0.2	< 0.2	< 0.2			0.5	
Xylene, m,p-	µg/L	1.0	< 1.0	< 1.0				
Xylene, o-	µg/L	0.5	< 0.5	< 0.5				

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water



Christine Burke
Lab Manager

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CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G85557-9 **REPORT No. B19-38402 (ii)**

Report To:

Azimuth Environmental
642 Welham Rd,
Barrie ON L4N9A1 Canada
Attention: Ian Acheson

Caduceon Environmental Laboratories
112 Commerce Park Drive
Barrie ON L4N 8W8
Tel: 705-252-5743
Fax: 705-252-5746

DATE RECEIVED: 27-Nov-19
DATE REPORTED: 05-Dec-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		408	305			O. Reg. 153	
	Sample I.D.		B19-38402-25	B19-38402-26			Tbl. 2 - PGW	
	Date Collected		26-Nov-19	26-Nov-19				
Parameter	**Units**	**R.L.**						
Xylene, m,p,o-	µg/L	1.1	< 1.1	< 1.1			300	
PHC F1 (C6-C10)	µg/L	50	< 50	< 50			750	
PHC F2 (>C10-C16)	µg/L	50	< 50	< 50			150	
PHC F3 (>C16-C34)	µg/L	400	< 400	**1200**			500	
PHC F4 (>C34-C50)	µg/L	400	< 400	< 400			500	

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

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Christine Burke
Lab Manager

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SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Summary of Exceedances

Table 2 - Potable Ground Water

308	Found Value	Limit
PHC F3 (>C16-C34) (µg/L)	700	500
404a	Found Value	Limit
Xylene, m,p,o- (µg/L)	1220	300
PHC F1 (C6-C10) (µg/L)	2280	750
PHC F2 (>C10-C16) (µg/L)	180	150
Ethylbenzene (µg/L)	113	2.4
404b	Found Value	Limit
PHC F2 (>C10-C16) (µg/L)	2020	150
Ethylbenzene (µg/L)	1890	2.4
Xylene, m,p,o- (µg/L)	16000	300
Hexane (µg/L)	119	51
Toluene (µg/L)	418	24
Styrene (µg/L)	47.3	5.4
PHC F1 (C6-C10) (µg/L)	31700	750
404c	Found Value	Limit
Ethylbenzene (µg/L)	558	2.4
PHC F1 (C6-C10) (µg/L)	10600	750
PHC F2 (>C10-C16) (µg/L)	1350	150
Benzene (µg/L)	10.9	5

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

Christine Burke
Lab Manager

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JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Table 2 - Potable Ground Water

404c	Found Value	Limit
Styrene (µg/L)	13.1	5.4
Toluene (µg/L)	489	24
Xylene, m,p,o- (µg/L)	4260	300
406a	Found Value	Limit
PHC F2 (>C10-C16) (µg/L)	250	150
406b	Found Value	Limit
PHC F2 (>C10-C16) (µg/L)	1390	150
PHC F1 (C6-C10) (µg/L)	5400	750
Ethylbenzene (µg/L)	5.7	2.4
406c	Found Value	Limit
PHC F1 (C6-C10) (µg/L)	9370	750
PHC F2 (>C10-C16) (µg/L)	4790	150
Hexane (µg/L)	67	51
Ethylbenzene (µg/L)	70.7	2.4
Xylene, m,p,o- (µg/L)	456	300
305	Found Value	Limit
PHC F3 (>C16-C34) (µg/L)	1200	500

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

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Lab Manager

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SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Parameter	Qty	Site Analyzed	Analyst Initials	Date Analyzed	Lab Method	Reference Method
SVOC	24	Kingston	sge	05-Dec-19	C-NAB-W-001 (k)	EPA 8270

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

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DATE REPORTED: 05-Dec-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		304	308	308-II	401a	O. Reg. 153	
	Sample I.D.		B19-38402-3	B19-38402-4	B19-38402-5	B19-38402-6	Tbl. 2 - PGW	
	Date Collected		26-Nov-19	26-Nov-19	26-Nov-19	27-Nov-19		
Parameter	**Units**	**R.L.**						
Acenaphthene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	4.1	
Acenaphthylene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	1	
Anthracene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	2.4	
Benzo(a)anthracene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	1	
Benzo(a)pyrene	µg/L	0.01	< 0.01	**0.032**	**0.029**	< 0.01	0.01	
Benzo(b)fluoranthene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.1	
Benzo(b+k)fluoranthene	µg/L	0.1	< 0.1	< 0.1	< 0.1	< 0.1		
Benzo(g,h,i)perylene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.2	
Benzo(k)fluoranthene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.1	
Chrysene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.1	
Dibenzo(a,h)anthracene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.2	
Fluoranthene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.41	
Fluorene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	120	
Indeno(1,2,3,-cd)pyrene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.2	
Methylnaphthalene,1-	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	3.2	
Methylnaphthalene,2-	µg/L	0.08	< 0.08	< 0.08	< 0.08	< 0.08	3.2	
Methylnaphthalene 2-(1-)	µg/L	1	< 1	< 1	< 1	< 1	3.2	
Naphthalene	µg/L	0.05	0.08	< 0.05	< 0.05	< 0.05	11	
Phenanthrene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	1	
Pyrene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	4.1	

1 . Elevated RL due to sample matrix interference

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water



Christine Burke
Lab Manager

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DATE RECEIVED: 27-Nov-19
DATE REPORTED: 05-Dec-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		401b	401c	402a	402b	O. Reg. 153	
	Sample I.D.		B19-38402-7	B19-38402-8	B19-38402-9	B19-38402-10	Tbl. 2 - PGW	
	Date Collected		27-Nov-19	27-Nov-19	27-Nov-19	27-Nov-19		
Parameter	**Units**	**R.L.**						
Acenaphthene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	4.1	
Acenaphthylene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	1	
Anthracene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	2.4	
Benzo(a)anthracene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	1	
Benzo(a)pyrene	µg/L	0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	
Benzo(b)fluoranthene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.1	
Benzo(b+k)fluoranthene	µg/L	0.1	< 0.1	< 0.1	< 0.1	< 0.1		
Benzo(g,h,i)perylene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.2	
Benzo(k)fluoranthene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.1	
Chrysene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.1	
Dibenzo(a,h)anthracene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.2	
Fluoranthene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.41	
Fluorene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	120	
Indeno(1,2,3,-cd)pyrene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.2	
Methylnaphthalene,1-	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	3.2	
Methylnaphthalene,2-	µg/L	0.08	< 0.08	< 0.08	< 0.08	< 0.08	3.2	
Methylnaphthalene 2-(1-)	µg/L	1	< 1	< 1	< 1	< 1	3.2	
Naphthalene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	11	
Phenanthrene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	1	
Pyrene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	4.1	

1 . Elevated RL due to sample matrix interference

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Tbl. 2 - PGW - Table 2 - Potable Ground Water

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SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		402c	403a	403b	403c	O. Reg. 153	
	Sample I.D.		B19-38402-11	B19-38402-12	B19-38402-13	B19-38402-14	Tbl. 2 - PGW	
	Date Collected		27-Nov-19	27-Nov-19	27-Nov-19	27-Nov-19		
Parameter	**Units**	**R.L.**						
Acenaphthene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	4.1	
Acenaphthylene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	1	
Anthracene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	2.4	
Benzo(a)anthracene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	1	
Benzo(a)pyrene	µg/L	0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	
Benzo(b)fluoranthene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.1	
Benzo(b+k)fluoranthene	µg/L	0.1	< 0.1	< 0.1	< 0.1	< 0.1		
Benzo(g,h,i)perylene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.2	
Benzo(k)fluoranthene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.1	
Chrysene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.1	
Dibenzo(a,h)anthracene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.2	
Fluoranthene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.41	
Fluorene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	120	
Indeno(1,2,3,-cd)pyrene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.2	
Methylnaphthalene,1-	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	3.2	
Methylnaphthalene,2-	µg/L	0.08	< 0.08	< 0.08	< 0.08	< 0.08	3.2	
Methylnaphthalene 2-(1-)	µg/L	1	< 1	< 1	< 1	< 1	3.2	
Naphthalene	µg/L	0.05	< 0.05	< 0.05	< 0.05	0.06	11	
Phenanthrene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	1	
Pyrene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	4.1	

1 . Elevated RL due to sample matrix interference

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water



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JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		404a	404b	404c	405a	O. Reg. 153	
	Sample I.D.		B19-38402-15	B19-38402-16	B19-38402-17	B19-38402-18	Tbl. 2 - PGW	
	Date Collected		26-Nov-19	26-Nov-19	26-Nov-19	26-Nov-19		
Parameter	**Units**	**R.L.**						
Acenaphthene	µg/L	0.05	< 0.05	0.27	0.33	< 0.05	4.1	
Acenaphthylene	µg/L	0.05	< 0.05	< 0.2	< 0.3	< 0.05	1	
Anthracene	µg/L	0.05	< 0.05	< 0.2	< 0.3	< 0.05	2.4	
Benzo(a)anthracene	µg/L	0.05	< 0.05	< 0.2	< 0.3	< 0.05	1	
Benzo(a)pyrene	µg/L	0.01	< 0.01	**< 0.05**	**< 0.06**	< 0.01	0.01	
Benzo(b)fluoranthene	µg/L	0.05	< 0.05	**< 0.2**	**< 0.3**	< 0.05	0.1	
Benzo(b+k)fluoranthene	µg/L	0.1	< 0.1	< 0.5	< 0.6	< 0.1		
Benzo(g,h,i)perylene	µg/L	0.05	< 0.05	< 0.2	**< 0.3**	< 0.05	0.2	
Benzo(k)fluoranthene	µg/L	0.05	< 0.05	**< 0.2**	**< 0.3**	< 0.05	0.1	
Chrysene	µg/L	0.05	< 0.05	**< 0.2**	**< 0.3**	< 0.05	0.1	
Dibenzo(a,h)anthracene	µg/L	0.05	< 0.05	< 0.2	**< 0.3**	< 0.05	0.2	
Fluoranthene	µg/L	0.05	< 0.05	< 0.2	< 0.3	< 0.05	0.41	
Fluorene	µg/L	0.05	< 0.05	0.45	0.44	< 0.05	120	
Indeno(1,2,3,-cd)pyrene	µg/L	0.05	< 0.05	< 0.2	**< 0.3**	< 0.05	0.2	
Methylnaphthalene,1-	µg/L	0.05	**4.37**	**78.4**	**74.4**	< 0.05	3.2	
Methylnaphthalene,2-	µg/L	0.08	**6.65**	**170**	**150**	< 0.08	3.2	
Methylnaphthalene 2-(1-)	µg/L	1	**11.0**	**248**	**224**	< 1	3.2	
Naphthalene	µg/L	0.05	**49.9**	**648**	**360**	< 0.05	11	
Phenanthrene	µg/L	0.05	< 0.05	0.36	0.50	< 0.05	1	
Pyrene	µg/L	0.05	< 0.05	< 0.2	< 0.3	< 0.05	4.1	

1 . Elevated RL due to sample matrix interference

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water



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Lab Manager

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SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		406a	406b	406c	407a	O. Reg. 153	
	Sample I.D.		B19-38402-19	B19-38402-20	B19-38402-21	B19-38402-22	Tbl. 2 - PGW	
	Date Collected		26-Nov-19	26-Nov-19	26-Nov-19	27-Nov-19		
Parameter	**Units**	**R.L.**						
Acenaphthene	µg/L	0.05	< 0.05	1.18	0.63	< 0.05	4.1	
Acenaphthylene	µg/L	0.05	< 0.05	0.24	0.23	< 0.05	1	
Anthracene	µg/L	0.05	< 0.05	0.06	0.09	< 0.05	2.4	
Benzo(a)anthracene	µg/L	0.05	< 0.05	< 0.05	0.05	< 0.05	1	
Benzo(a)pyrene	µg/L	0.01	< 0.01	< 0.01	0.010	< 0.01	0.01	
Benzo(b)fluoranthene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.1	
Benzo(b+k)fluoranthene	µg/L	0.1	< 0.1	< 0.1	< 0.1	< 0.1		
Benzo(g,h,i)perylene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.2	
Benzo(k)fluoranthene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.1	
Chrysene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.1	
Dibenzo(a,h)anthracene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.2	
Fluoranthene	µg/L	0.05	< 0.05	< 0.05	0.07	< 0.05	0.41	
Fluorene	µg/L	0.05	< 0.05	1.78	1.25	< 0.05	120	
Indeno(1,2,3,-cd)pyrene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.2	
Methylnaphthalene,1-	µg/L	0.05	1.11	**84.5**	**140**	< 0.05	3.2	
Methylnaphthalene,2-	µg/L	0.08	1.06	**130**	**281**	< 0.08	3.2	
Methylnaphthalene 2-(1-)	µg/L	1	2.2	**214**	**421**	< 1	3.2	
Naphthalene	µg/L	0.05	7.73	**546**	**770**	0.07	11	
Phenanthrene	µg/L	0.05	< 0.05	0.99	**1.02**	< 0.05	1	
Pyrene	µg/L	0.05	< 0.05	< 0.05	0.09	< 0.05	4.1	

1 . Elevated RL due to sample matrix interference

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water



Christine Burke
Lab Manager

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Final Report

C.O.C.: G85557-9 **REPORT No. B19-38402 (iii)**

Report To:

Azimuth Environmental
642 Welham Rd,
Barrie ON L4N9A1 Canada
Attention: Ian Acheson

Caduceon Environmental Laboratories
112 Commerce Park Drive
Barrie ON L4N 8W8
Tel: 705-252-5743
Fax: 705-252-5746

DATE RECEIVED: 27-Nov-19
DATE REPORTED: 05-Dec-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		407b	407c	408	305	O. Reg. 153	
	Sample I.D.		B19-38402-23	B19-38402-24	B19-38402-25	B19-38402-26	Tbl. 2 - PGW	
	Date Collected		27-Nov-19	27-Nov-19	26-Nov-19	26-Nov-19		
Parameter	**Units**	**R.L.**						
Acenaphthene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	4.1	
Acenaphthylene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	1	
Anthracene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	2.4	
Benzo(a)anthracene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	1	
Benzo(a)pyrene	µg/L	0.01	0.010	< 0.01	< 0.01	< 0.01	0.01	
Benzo(b)fluoranthene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.1	
Benzo(b+k)fluoranthene	µg/L	0.1	< 0.1	< 0.1	< 0.1	< 0.1		
Benzo(g,h,i)perylene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.2	
Benzo(k)fluoranthene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.1	
Chrysene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.1	
Dibenzo(a,h)anthracene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.2	
Fluoranthene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.41	
Fluorene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	120	
Indeno(1,2,3,-cd)pyrene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.2	
Methylnaphthalene,1-	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	3.2	
Methylnaphthalene,2-	µg/L	0.08	< 0.08	< 0.08	< 0.08	< 0.08	3.2	
Methylnaphthalene 2-(1-)	µg/L	1	< 1	< 1	< 1	< 1	3.2	
Naphthalene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	11	
Phenanthrene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	1	
Pyrene	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	4.1	

1 . Elevated RL due to sample matrix interference

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water



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JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Summary of Exceedances

Table 2 - Potable Ground Water

308	Found Value	Limit
Benzo(a)pyrene (µg/L)	0.032	0.01
308-II	Found Value	Limit
Benzo(a)pyrene (µg/L)	0.029	0.01
404a	Found Value	Limit
Naphthalene (µg/L)	49.9	11
Methylnaphthalene 2-(1-) (µg/L)	11.0	3.2
Methylnaphthalene,1- (µg/L)	4.37	3.2
Methylnaphthalene,2- (µg/L)	6.65	3.2
404b	Found Value	Limit
Methylnaphthalene 2-(1-) (µg/L)	248	3.2
Methylnaphthalene,1- (µg/L)	78.4	3.2
Methylnaphthalene,2- (µg/L)	170	3.2
Naphthalene (µg/L)	648	11
Chrysene (µg/L)	< 0.2	0.1
Benzo(k)fluoranthene (µg/L)	< 0.2	0.1
Benzo(b)fluoranthene (µg/L)	< 0.2	0.1
Benzo(a)pyrene (µg/L)	< 0.05	0.01
404c	Found Value	Limit

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water



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Lab Manager

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WATERWORKS NO.

Table 2 - Potable Ground Water

404c	Found Value	Limit
Benzo(b)fluoranthene (µg/L)	< 0.3	0.1
Chrysene (µg/L)	< 0.3	0.1
Methylnaphthalene 2-(1-) (µg/L)	224	3.2
Benzo(k)fluoranthene (µg/L)	< 0.3	0.1
Methylnaphthalene,1- (µg/L)	74.4	3.2
Benzo(g,h,i)perylene (µg/L)	< 0.3	0.2
Methylnaphthalene,2- (µg/L)	150	3.2
Indeno(1,2,3,-cd)pyrene (µg/L)	< 0.3	0.2
Dibenzo(a,h)anthracene (µg/L)	< 0.3	0.2
Naphthalene (µg/L)	360	11
Benzo(a)pyrene (µg/L)	< 0.06	0.01
406b	Found Value	Limit
Methylnaphthalene,2- (µg/L)	130	3.2
Methylnaphthalene,1- (µg/L)	84.5	3.2
Naphthalene (µg/L)	546	11
Methylnaphthalene 2-(1-) (µg/L)	214	3.2
406c	Found Value	Limit
Methylnaphthalene,2- (µg/L)	281	3.2
Methylnaphthalene 2-(1-) (µg/L)	421	3.2
Naphthalene (µg/L)	770	11
Phenanthrene (µg/L)	1.02	1
Methylnaphthalene,1- (µg/L)	140	3.2

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water



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JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Parameter	Qty	Site Analyzed	Analyst Initials	Date Analyzed	Lab Method	Reference Method
OC Pesticides	7	Kingston	CS	05-Dec-19	C-PESTCL-01 K	EPA 8080

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

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SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		101	101-II	304	401a	O. Reg. 153	
	Sample I.D.		B19-38402-1	B19-38402-2	B19-38402-3	B19-38402-6	Tbl. 2 - PGW	
	Date Collected		26-Nov-19	26-Nov-19	26-Nov-19	27-Nov-19		
Parameter	**Units**	**R.L.**						
Aldrin	µg/L	0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.35	
Chlordane (alpha)	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Chlordane (Gamma)	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Chlordane Total (alpha+gamma)	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	7	
DDD, 2,4-	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05		
DDD, 4,4-	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05		
DDD Total Water	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	10	
DDE, 2,4-	µg/L	0.01	< 0.01	< 0.01	< 0.01	< 0.01		
DDE, 4,4-	µg/L	0.01	< 0.01	< 0.01	< 0.01	< 0.01		
DDE Total water	µg/L	0.01	< 0.01	< 0.01	< 0.01	< 0.01	10	
DDT, 2,4-	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05		
DDT, 4,4-	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05		
DDT Total water	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	2.8	
Dieldrin	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.35	
Lindane (Hexachlorocyclohexane, Gamma)	µg/L	0.01	< 0.01	< 0.01	< 0.01	< 0.01	1.2	
Endosulfan I	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Endosulfan II	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05		
Endosulfan I/II	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	1.5	
Endrin	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.48	
Heptachlor	µg/L	0.01	< 0.01	< 0.01	< 0.01	< 0.01	1.5	
Heptachlor Epoxide	µg/L	0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.048	

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water



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Lab Manager

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JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		101	101-II	304	401a	O. Reg. 153	
	Sample I.D.		B19-38402-1	B19-38402-2	B19-38402-3	B19-38402-6	Tbl. 2 - PGW	
	Date Collected		26-Nov-19	26-Nov-19	26-Nov-19	27-Nov-19		
Parameter	**Units**	**R.L.**						
Hexachlorobenzene	µg/L	0.01	< 0.01	< 0.01	< 0.01	< 0.01	1	
Hexachlorobutadiene	µg/L	0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.44	
Hexachloroethane	µg/L	0.02	< 0.02	< 0.02	< 0.02	< 0.02	2.1	
Methoxychlor	µg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	6.5	

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

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Lab Manager

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	Client I.D. / Sample I.D. / Date Collected		401b B19-38402-7 27-Nov-19	401c B19-38402-8 27-Nov-19	408 B19-38402-25 26-Nov-19		O. Reg. 153 Tbl. 2 - PGW	
Parameter	**Units**	**R.L.**						
Aldrin	µg/L	0.01	< 0.01	< 0.01	< 0.01		0.35	
Chlordane (alpha)	µg/L	0.05	< 0.05	< 0.05	< 0.05			
Chlordane (Gamma)	µg/L	0.05	< 0.05	< 0.05	< 0.05			
Chlordane Total (alpha+gamma)	µg/L	0.05	< 0.05	< 0.05	< 0.05		7	
DDD, 2,4-	µg/L	0.05	< 0.05	< 0.05	< 0.05			
DDD, 4,4-	µg/L	0.05	< 0.05	< 0.05	< 0.05			
DDD Total Water	µg/L	0.05	< 0.05	< 0.05	< 0.05		10	
DDE, 2,4-	µg/L	0.01	< 0.01	< 0.01	< 0.01			
DDE, 4,4-	µg/L	0.01	< 0.01	< 0.01	< 0.01			
DDE Total water	µg/L	0.01	< 0.01	< 0.01	< 0.01		10	
DDT, 2,4-	µg/L	0.05	< 0.05	< 0.05	< 0.05			
DDT, 4,4-	µg/L	0.05	< 0.05	< 0.05	< 0.05			
DDT Total water	µg/L	0.05	< 0.05	< 0.05	< 0.05		2.8	
Dieldrin	µg/L	0.05	< 0.05	< 0.05	< 0.05		0.35	
Lindane (Hexachlorocyclohexane, Gamma)	µg/L	0.01	< 0.01	< 0.01	< 0.01		1.2	
Endosulfan I	µg/L	0.05	< 0.05	< 0.05	< 0.05			
Endosulfan II	µg/L	0.05	< 0.05	< 0.05	< 0.05			
Endosulfan I/II	µg/L	0.05	< 0.05	< 0.05	< 0.05		1.5	
Endrin	µg/L	0.05	< 0.05	< 0.05	< 0.05		0.48	
Heptachlor	µg/L	0.01	< 0.01	< 0.01	< 0.01		1.5	
Heptachlor Epoxide	µg/L	0.01	< 0.01	< 0.01	< 0.01		0.048	

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

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	Client I.D.		401b	401c	408		O. Reg. 153	
	Sample I.D.		B19-38402-7	B19-38402-8	B19-38402-25		Tbl. 2 - PGW	
	Date Collected		27-Nov-19	27-Nov-19	26-Nov-19			
Parameter	**Units**	**R.L.**						
Hexachlorobenzene	µg/L	0.01	< 0.01	< 0.01	< 0.01		1	
Hexachlorobutadiene	µg/L	0.01	< 0.01	< 0.01	< 0.01		0.44	
Hexachloroethane	µg/L	0.02	< 0.02	< 0.02	< 0.02		2.1	
Methoxychlor	µg/L	0.05	< 0.05	< 0.05	< 0.05		6.5	

O. Reg. 153 - Soil, Ground Water and Sediment Standards
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Christine Burke
Lab Manager

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Client committed. Quality assured.

CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G85567 **REPORT No. B19-38572**

Report To:

Azimuth Environmental
642 Welham Rd,
Barrie ON L4N9A1 Canada
Attention: Ian Acheson

Caduceon Environmental Laboratories
112 Commerce Park Drive
Barrie ON L4N 8W8
Tel: 705-252-5743
Fax: 705-252-5746

DATE RECEIVED: 28-Nov-19
DATE REPORTED: 09-Dec-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Parameter	Qty	Site Analyzed	Analyst Initials	Date Analyzed	Lab Method	Reference Method
SVOC	2	Kingston	sge	09-Dec-19	C-NAB-W-001 (k)	EPA 8270

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

Christine Burke
Lab Manager

R.L. = Reporting Limit
Test methods may be modified from specified reference method unless indicated by an *
Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

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DATE REPORTED: 09-Dec-19
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

	Client I.D.		101	101-II			O. Reg. 153	
	Sample I.D.		B19-38572-1	B19-38572-2			Tbl. 2 - PGW	
	Date Collected		28-Nov-19	28-Nov-19				
Parameter	**Units**	**R.L.**						
Acenaphthene	µg/L	0.05	< 0.05	< 0.05			4.1	
Acenaphthylene	µg/L	0.05	< 0.05	< 0.05			1	
Anthracene	µg/L	0.05	< 0.05	< 0.05			2.4	
Benzo(a)anthracene	µg/L	0.05	< 0.05	< 0.05			1	
Benzo(a)pyrene	µg/L	0.01	< 0.01	< 0.01			0.01	
Benzo(b)fluoranthene	µg/L	0.05	< 0.05	< 0.05			0.1	
Benzo(b+k)fluoranthene	µg/L	0.1	< 0.1	< 0.1				
Benzo(g,h,i)perylene	µg/L	0.05	< 0.05	< 0.05			0.2	
Benzo(k)fluoranthene	µg/L	0.05	< 0.05	< 0.05			0.1	
Chrysene	µg/L	0.05	< 0.05	< 0.05			0.1	
Dibenzo(a,h)anthracene	µg/L	0.05	< 0.05	< 0.05			0.2	
Fluoranthene	µg/L	0.05	< 0.05	< 0.05			0.41	
Fluorene	µg/L	0.05	< 0.05	< 0.05			120	
Indeno(1,2,3,-cd)pyrene	µg/L	0.05	< 0.05	< 0.05			0.2	
Methylnaphthalene,1-	µg/L	0.05	< 0.05	< 0.05			3.2	
Methylnaphthalene,2-	µg/L	0.08	< 0.08	< 0.08			3.2	
Methylnaphthalene 2-(1-)	µg/L	1	< 1	< 1			3.2	
Naphthalene	µg/L	0.05	< 0.05	< 0.05			11	
Phenanthrene	µg/L	0.05	< 0.05	< 0.05			1	
Pyrene	µg/L	0.05	< 0.05	< 0.05			4.1	

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

Christine Burke
Lab Manager

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Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

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SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.: 41 Essa
P.O. NUMBER: 18-175
WATERWORKS NO.

Summary of Exceedances

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 2 - PGW - Table 2 - Potable Ground Water

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Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

Christine Burke
Lab Manager

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APPENDIX H

Site Elevation Survey

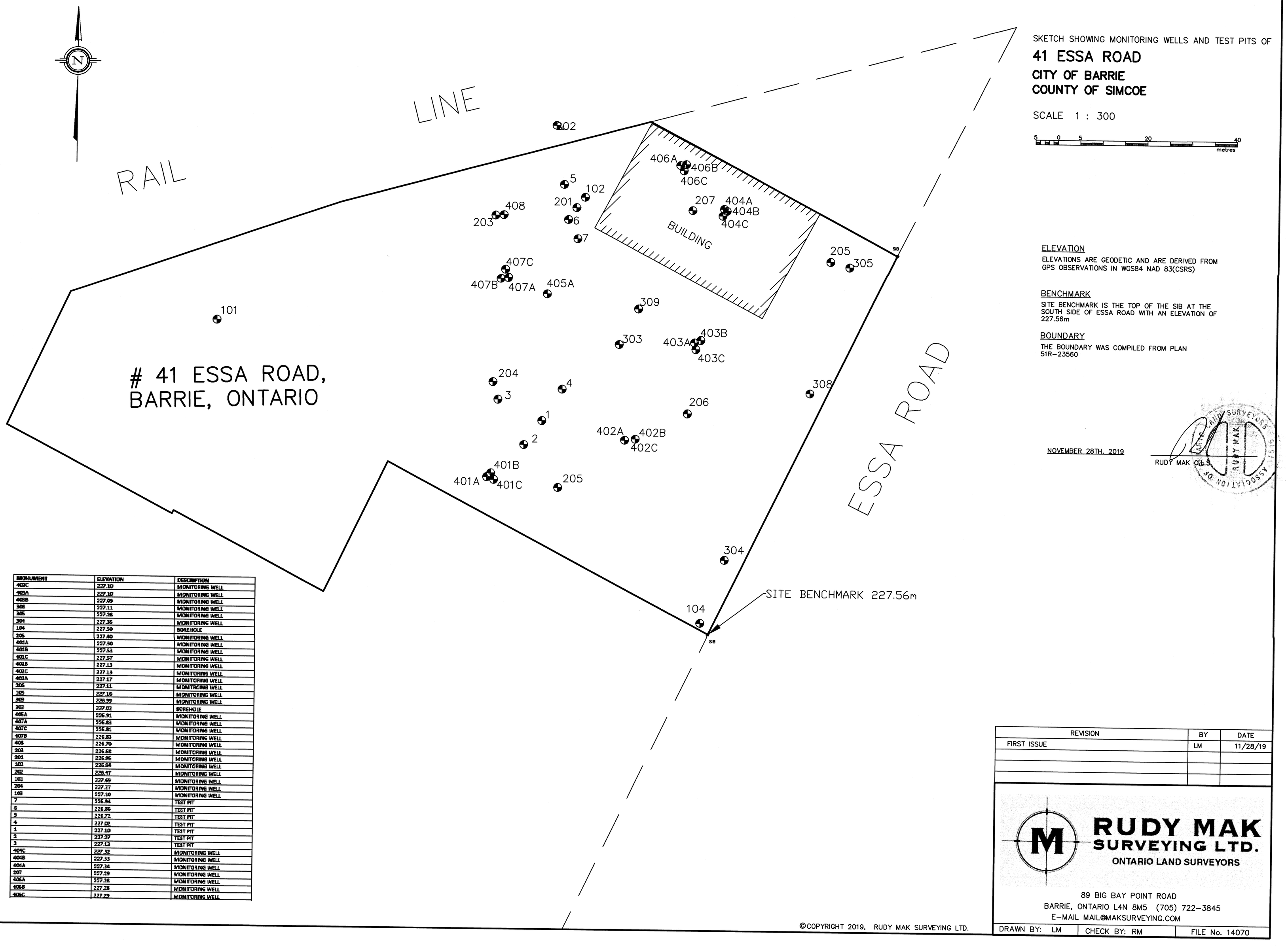
SKETCH SHOWING MONITORING WELLS AND TEST PITS OF

41 ESSA ROAD

CITY OF BARRIE
COUNTY OF SIMCOE

SCALE 1 : 300

5 0 5 20 40
metres



MONUMENT	ELEVATION	DESCRIPTION
408C	227.19	MONITORING WELL
408A	227.19	MONITORING WELL
408B	227.09	MONITORING WELL
308	227.11	MONITORING WELL
305	227.28	MONITORING WELL
304	227.35	MONITORING WELL
104	227.50	BOREHOLE
205	227.40	MONITORING WELL
401A	227.50	MONITORING WELL
401B	227.53	MONITORING WELL
401C	227.57	MONITORING WELL
402B	227.13	MONITORING WELL
402C	227.13	MONITORING WELL
402A	227.17	MONITORING WELL
206	227.11	MONITORING WELL
105	227.16	MONITORING WELL
309	226.99	MONITORING WELL
303	227.02	BOREHOLE
405A	226.91	MONITORING WELL
407A	226.83	MONITORING WELL
407C	226.81	MONITORING WELL
407B	226.83	MONITORING WELL
408	226.70	MONITORING WELL
203	226.68	MONITORING WELL
201	226.96	MONITORING WELL
101	226.94	MONITORING WELL
202	226.47	MONITORING WELL
101	227.69	MONITORING WELL
204	227.27	MONITORING WELL
103	227.10	MONITORING WELL
7	226.94	TEST PIT
6	226.86	TEST PIT
5	226.72	TEST PIT
4	227.02	TEST PIT
1	227.10	TEST PIT
2	227.27	TEST PIT
3	227.13	TEST PIT
401C	227.32	MONITORING WELL
401B	227.33	MONITORING WELL
401A	227.34	MONITORING WELL
207	227.29	MONITORING WELL
405A	227.28	MONITORING WELL
406B	227.28	MONITORING WELL
406C	227.29	MONITORING WELL

ELEVATION

ELEVATIONS ARE GEODETIC AND ARE DERIVED FROM GPS OBSERVATIONS IN WGS84 NAD 83(CSRS)

BENCHMARK

SITE BENCHMARK IS THE TOP OF THE SIB AT THE SOUTH SIDE OF ESSA ROAD WITH AN ELEVATION OF 227.56m

BOUNDARY

THE BOUNDARY WAS COMPILED FROM PLAN 51R-23560

NOVEMBER 28TH, 2019

RUDY MAK O.L.S.

ONTARIO LAND SURVEYORS RUDY MAK

REVISION	BY	DATE
FIRST ISSUE	LM	11/28/19

RUDY MAK SURVEYING LTD.
ONTARIO LAND SURVEYORS

89 BIG BAY POINT ROAD
BARRIE, ONTARIO L4N 8M5 (705) 722-3845
E-MAIL MAIL@MAKSURVEYING.COM

DRAWN BY: LM	CHECK BY: RM	FILE No. 14070

©COPYRIGHT 2019, RUDY MAK SURVEYING LTD.

MONUMENT	ELEVATION	DESCRIPTION
403C	227.10	MONITORING WELL
403A	227.10	MONITORING WELL
403B	227.09	MONITORING WELL
308	227.11	MONITORING WELL
305	227.28	MONITORING WELL
304	227.35	MONITORING WELL
104	227.50	BOREHOLE
205	227.40	MONITORING WELL
401A	227.50	MONITORING WELL
401B	227.53	MONITORING WELL
401C	227.57	MONITORING WELL
402B	227.13	MONITORING WELL
402C	227.13	MONITORING WELL
402A	227.17	MONITORING WELL
206	227.11	MONITROING WELL
105	227.16	MONITORING WELL
309	226.99	MONITORING WELL
303	227.02	BOREHOLE
405A	226.91	MONITORING WELL
407A	226.83	MONITORING WELL
407C	226.81	MONITORING WELL
407B	226.83	MONITORING WELL
408	226.70	MONITORING WELL
203	226.68	MONITORING WELL
201	226.95	MONITORING WELL
102	226.94	MONITORING WELL
202	226.47	MONITORING WELL
101	227.69	MONITORING WELL
204	227.27	MONITORING WELL
103	227.10	MONITORING WELL
7	226.94	TEST PIT
6	226.86	TEST PIT
5	226.72	TEST PIT
4	227.02	TEST PIT
1	227.10	TEST PIT
2	227.27	TEST PIT
3	227.13	TEST PIT
404C	227.32	MONITORING WELL
404B	227.33	MONITORING WELL
404A	227.34	MONITORING WELL
207	227.29	MONITORING WELL
406A	227.28	MONITORING WELL
406B	227.28	MONITORING WELL
406C	227.29	MONITORING WELL

APPENDIX I

City of Barrie Municipal As-Builts

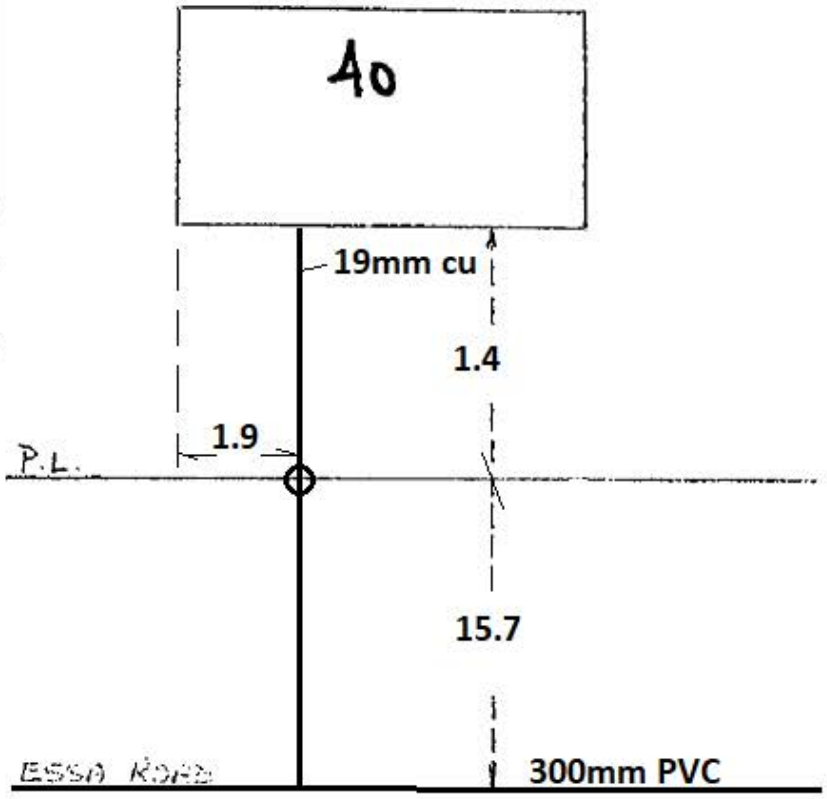
ADDRESS 40 ESSA ROAD

NAME

DATE (5-130)

SIZE

2017-water service replaced main to p/l with 25mm cu

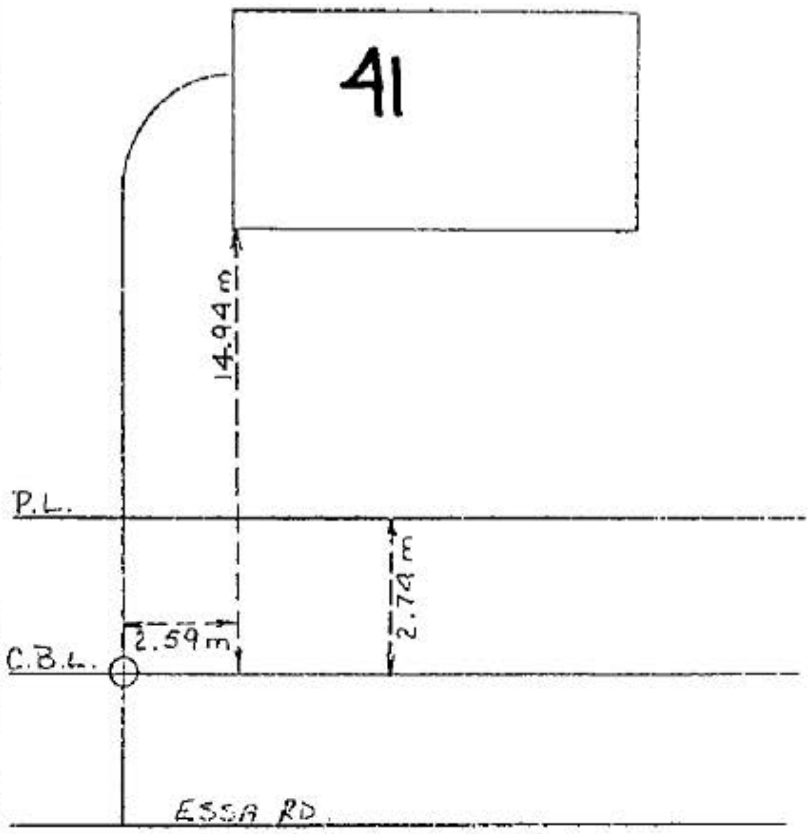


ADDRESS 41 ESSA ROAD

NAME A & M Super Discount Mart

DATE July 6, 1965 (15-16)

SIZE 25mm copper

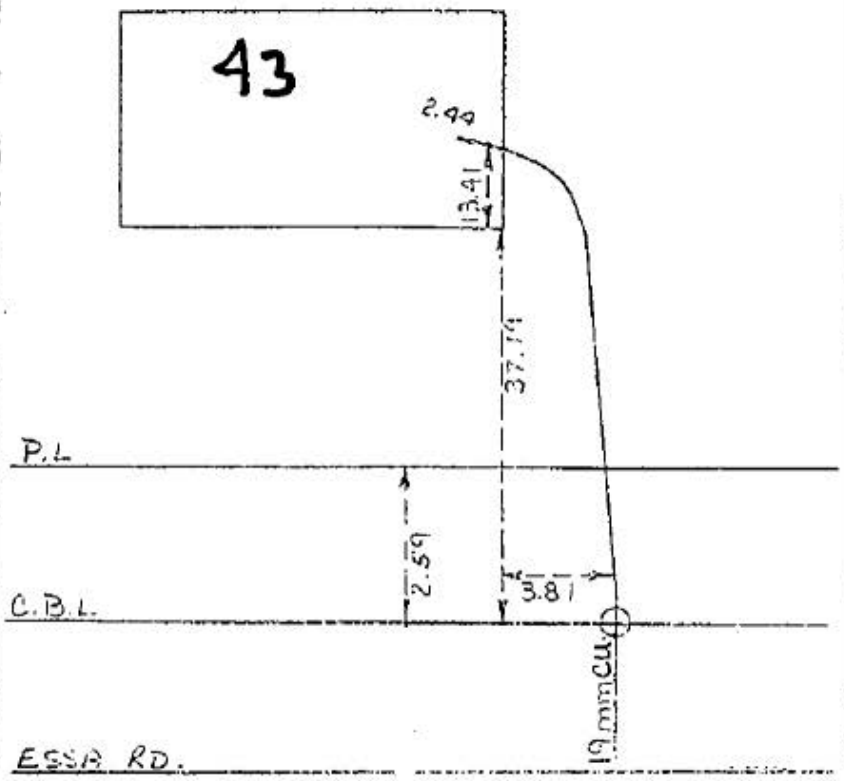


ADDRESS 43 ESSA ROAD

NAME Hertz Car Rent All

DATE 1914 - Galv. Renewed (5-182)

SIZE July 12, 1977 - 19mm copper



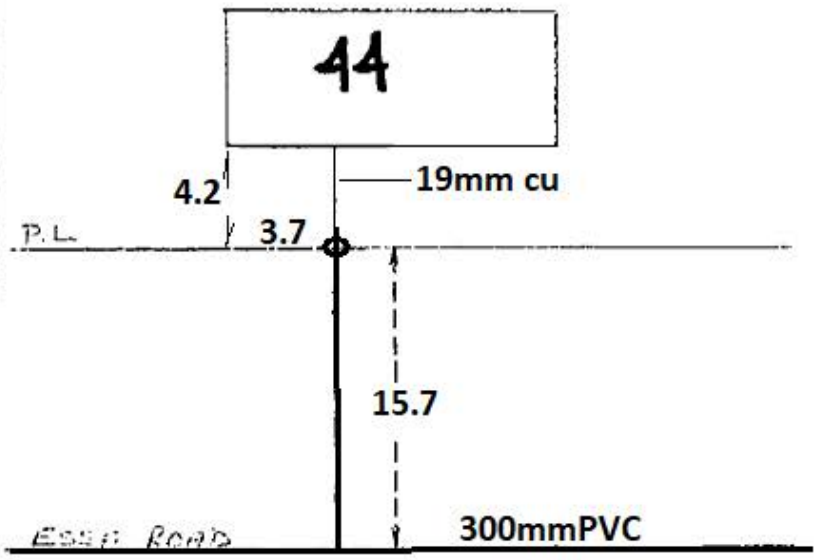
ADDRESS 44 ESSA ROAD

NAME Mrs. Herrington

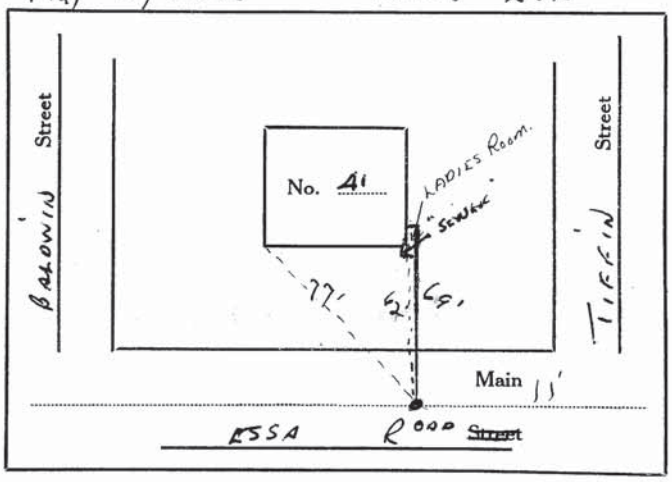
DATE 20/11/57 (8-150)

SIZE

2017-water service replaced main to p/l with 25mm cu.



May 19, 1952 Record # 2310



.....	Feet	6"	@ $.....	$.....
69'	Feet	4"	@ 2.00	138.00
.....	Bends	6"	@	.....
.....	Bends	6"	@	.....
.....	Sweeps	6"	@	.....
.....	Sweeps	4"	@	.....
.....	Adaptors	6"	@	.....
.....	Adaptors	4"	@	.....
.....	'Ys		@	.....
.....	'Ts		@	.....
.....	Hrs. Compressor		@	.....
.....	Hrs. Shovel		@	.....
.....	Hrs. Labour		@	.....
.....	Hrs. Truck & Equip. ...		@	.....
.....	Hrs. Misc.		@	.....
TOTAL COST				$285.50

SEWER:
69' of 6" @ $2.00 = $138.00

PAVEMENT:
20 x 5 @ 1.25 = 125.00

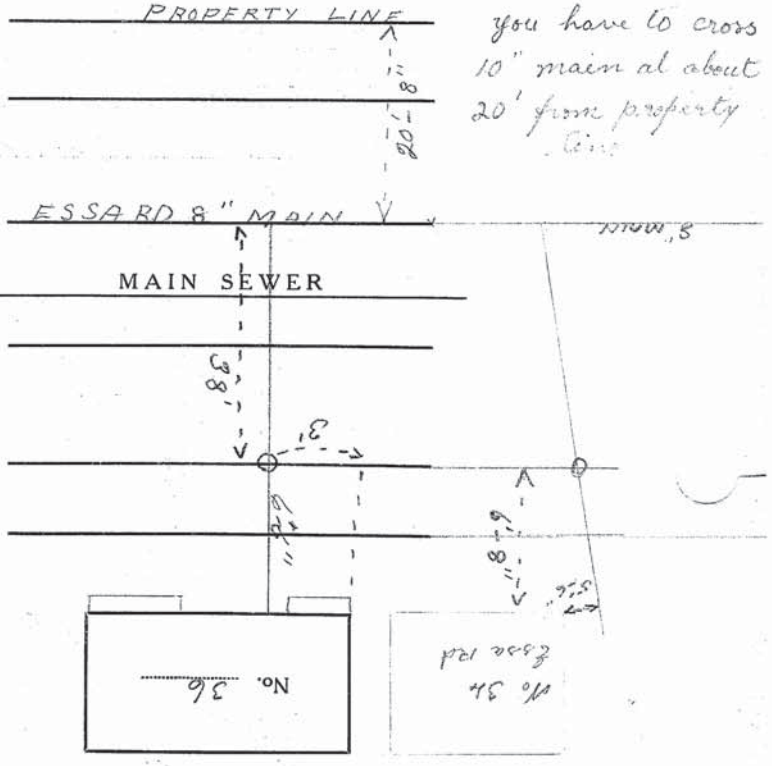
CURB BREAKING:

COMPRESSOR — 22.50

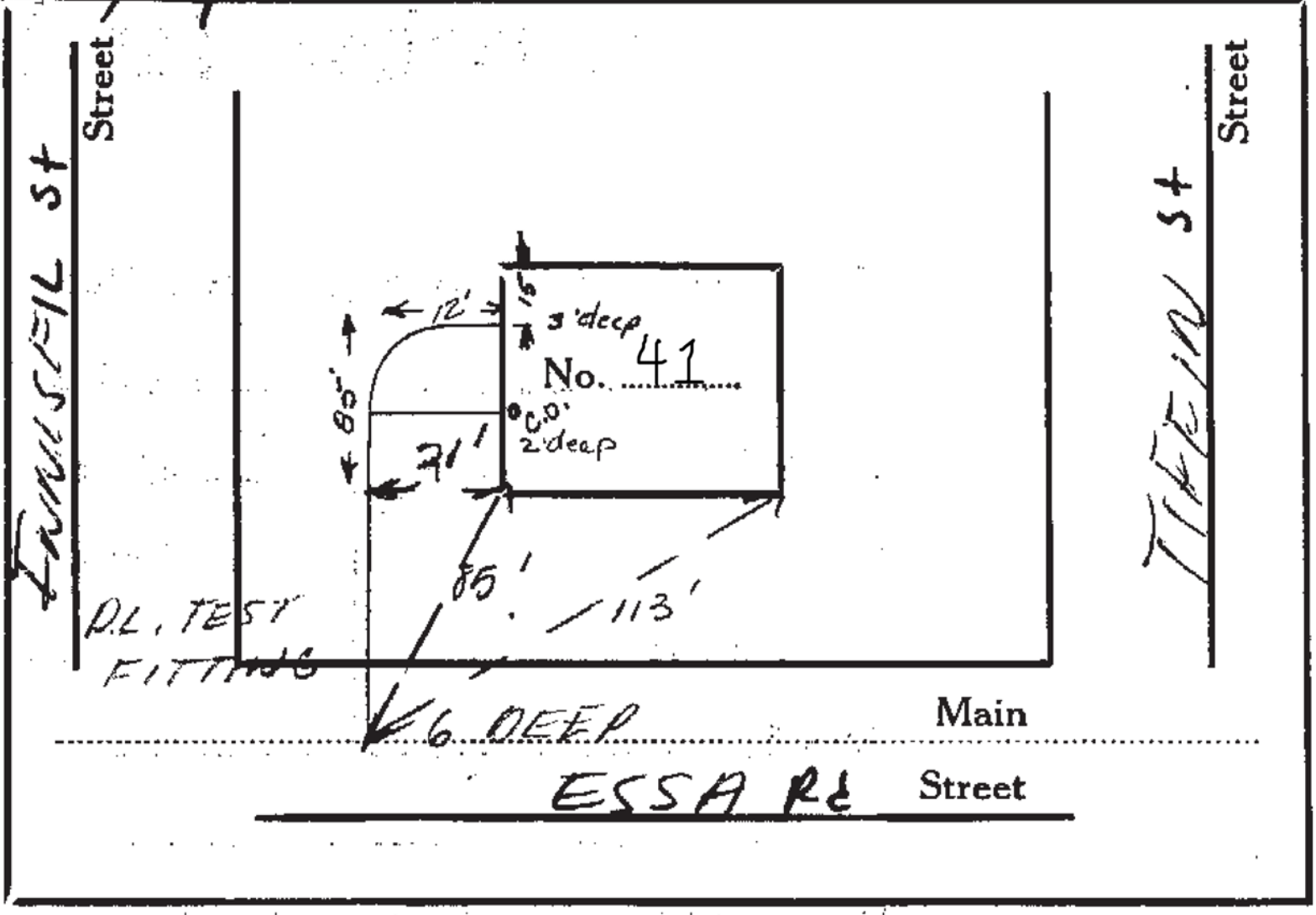
$285.50

WATER CONNECTIONS

No. 41



July 6, 1965 Record S216



BUILDING SANITARY SEWER CONNECTION RECORD

RECORD NO.: _____

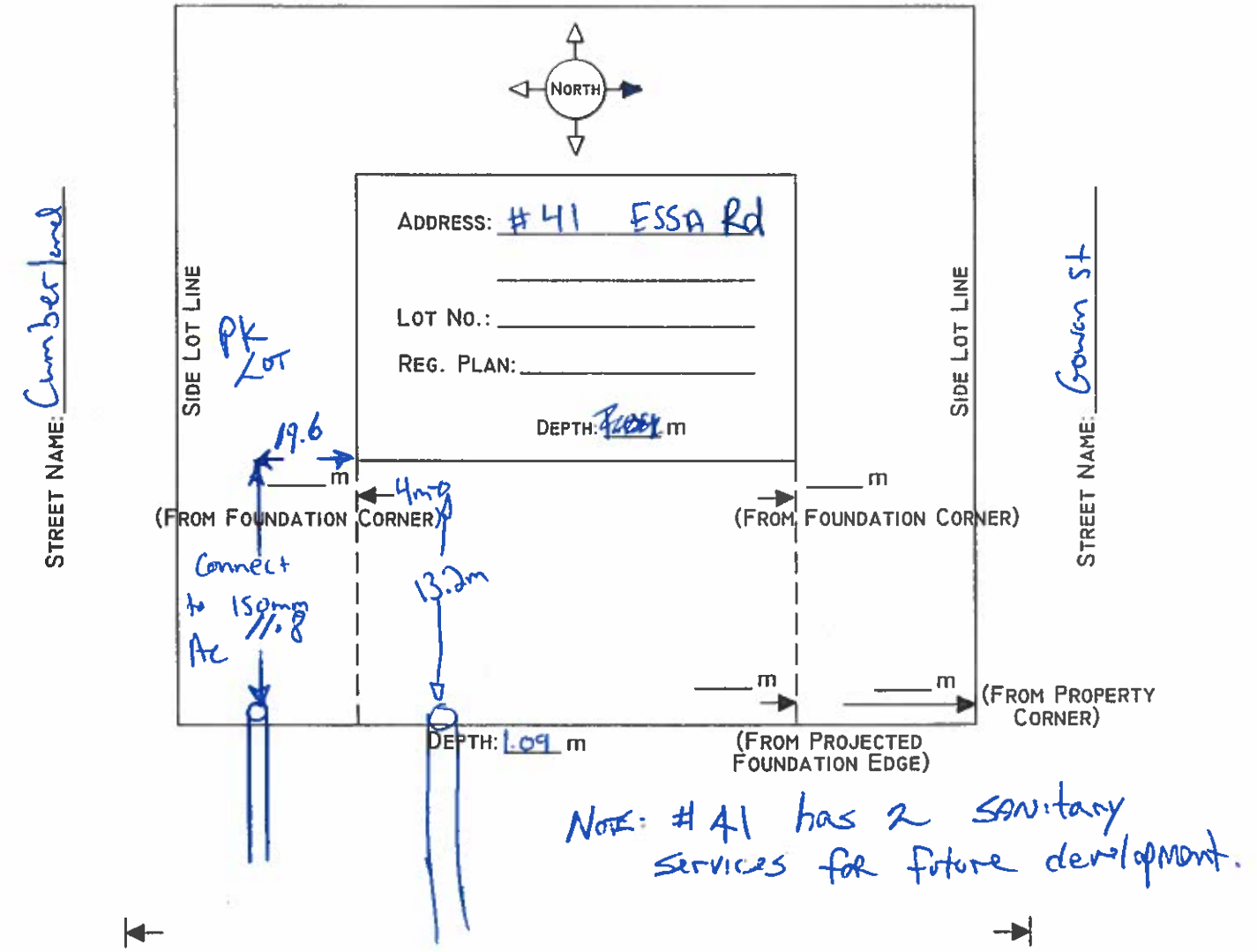
INSTALLED BY: Arnott SIZE: 150mm MATERIAL: PVC

INSPECTED BUILDING TO PROPERTY LINE BY: _____ DATE: _____

INSPECTED PROPERTY LINE TO MAIN BY: B Zilotto DATE: Aug 09 2017

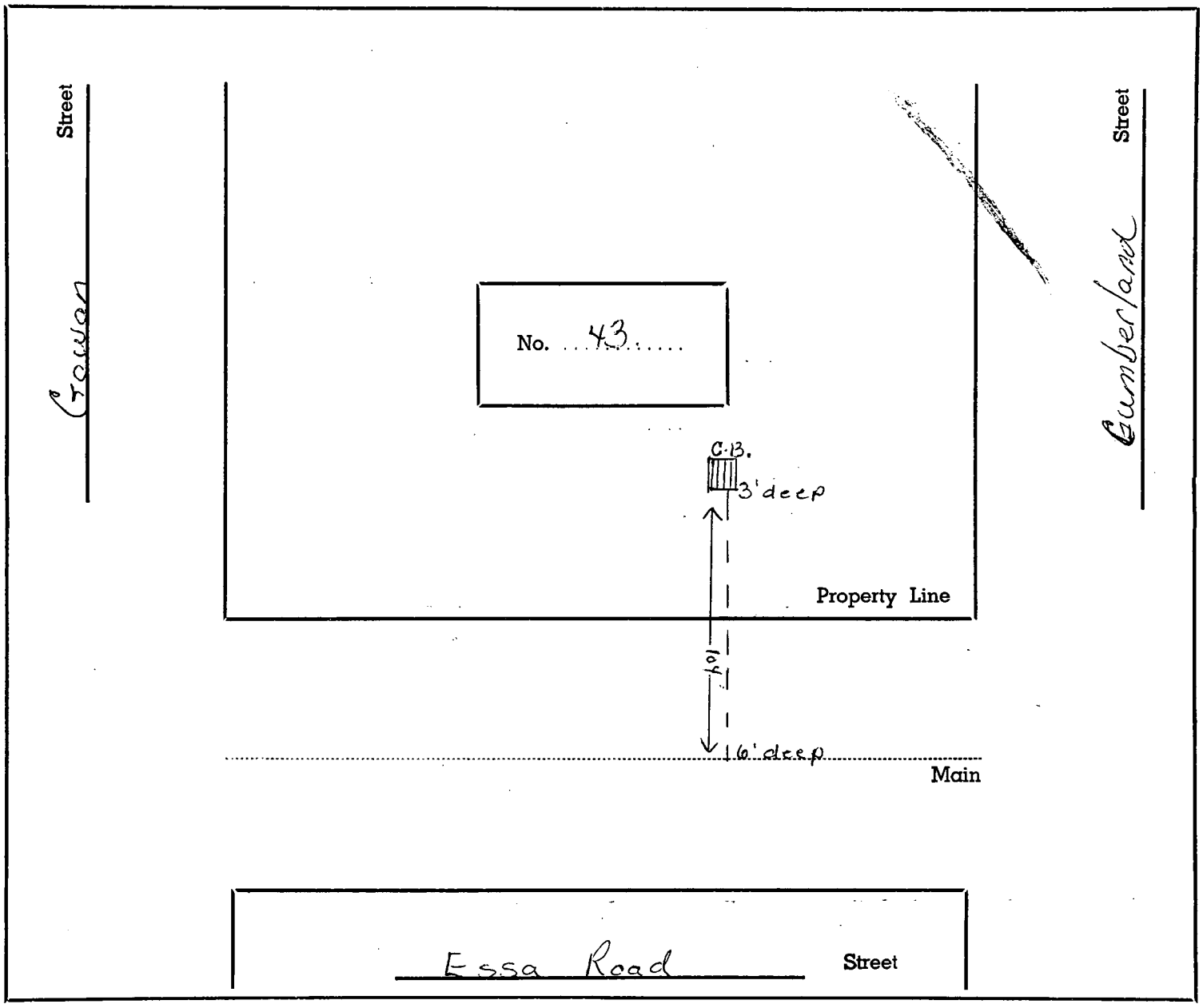
DATE SUBMITTED TO ENGINEERING DEPT.: April 04, 2018

DRAWN BY: Kady Hopson



STREET NAME: Essa Road

INSTRUCTIONS: SHOW ALL PIPE LENGTHS, DIMENSIONS & BENDS. SHOW MEASUREMENTS WITH ARROWHEADS. INDICATE NORTH BY SHADING DIRECTION.


Street
Crowson
Street
Gumberlane
No. 43
C.B.
3' deep
Property Line
10'
6' deep
Main
Essa Road
Street

REMARKS: