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Phase Two Environmental Site Assessment
Kizell Lands
5618 Hazeldean Road
Ottawa, Ontario

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Submitted to:

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Phase Two Environmental Site Assessment
Kizell Lands
5618 Hazeldean Road
Ottawa, Ontario

July 17, 2019
Project: 64153.50

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EXECUTIVE SUMMARY

The Phase One Environmental Site Assessment (ESA) report previously carried out for the subject property recommended that a Phase Two ESA be carried out for the property located at 5618 Hazeldean Road in Ottawa, Ontario (hereafter referred to as “the subject property”).

The Phase Two ESA investigated the three Areas of Potential Environmental Concern (APECs) identified in the Phase One ESA:

- APEC 1: Location of former farm house and auxiliary buildings (east side);
- APEC 2: Location of former farm house and auxiliary buildings (west side); and,
- APEC 3: Area adjacent to western property line.

The Phase Two ESA investigation was carried out from November 2017 to July 2019. The components of the Phase Two ESA investigation consisted of assessing soil and groundwater conditions, selecting applicable soil and groundwater standards, and comparing soil and groundwater sample analytical results with the selected standards.

Depth to groundwater ranged from approximately 0.5 to 5.5 metres below the ground surface. Groundwater flow is typically eastward towards the Carp River with minor deviations reflecting local topography.

The Phase Two ESA investigated the APECs identified in the Phase One ESA and the results of the investigation for each APEC are summarized below:

APEC 1: Location of former farmhouse and auxiliary buildings (east side)

Soil and groundwater samples submitted from the site, soil samples BH17-1 SA-2, BH17-2 SA-2, BH17-3 SA-2 and groundwater sample MW17-3, met the applicable Ministry of Environment, Conservation and Parks (MECP) Site Condition Standards (SCS) for metals, petroleum hydrocarbons (PHCs), polycyclic aromatic hydrocarbons (PAHs), and organochlorine (OC) pesticides.

The drilling program was based on the approximate location of former buildings as determined from historical aerial photographs. The is uncertainty regarding the exact location of petroleum storage / use and other possible chemical storage locations on the property.

APEC 2: Location of farmhouse and former auxiliary buildings (west side)

Soil and groundwater samples submitted from the site, soil samples BH17-4 SA-2 and BH17-5 SA-1 and groundwater sample MW17-5, met the applicable MECP SCS for metals, PHCs, PAHs, and OC pesticides.

Similar to APEC 1, the current drilling program was based on the approximate location of former buildings as determined from historical aerial photos. The drilling program was based on the approximate location of former buildings as determined from historical aerial photographs. The is uncertainty regarding the exact location of petroleum storage / use and other possible chemical storage locations on the property.

APEC 3: Area adjacent the west subject property line

Soil samples BH17-6 SA-2, BH17-7 SA-1, BH17-8 SA1, BH17-8 SA8, MW18-9 SA2, MW18-10 SA1 and MW18-10 SA4, met the applicable MECP SCS for metals, PHCs, PAHs, OC pesticides and volatile organic compounds (VOCs). Two exceedances included native clay samples, BH17-6 SA-2 and BH17-8 SA-1, which contained barium and vanadium concentrations in excess of the MECP SCS. However, the concentrations are well within ranges encountered in native clay soils in the Ottawa area and are not considered to represent anthropogenic contaminants but rather naturally occurring elevated concentrations.

Groundwater samples, MW17-6, MW17-8, MW18-9, MW18-10S, MW18-10D, BH18-11, BH18-12 and BH18-13, met the applicable MECP SCS for metals, PHCs, and VOCs. The exception was benzene at two monitoring well locations, BH18-11 and BH18-12. However, levels decreased in follow-up samples and concentrations were below the laboratory reporting limits in the final samples.

Discussion

Barium and vanadium levels in the native clay soils exceeded the standards at two locations; however, concentrations are within background levels for native clay soils in the Ottawa area and the average concentration in the clay soils across the site meets applicable MECP SCS.

Based on the available information, no offsite source of the groundwater impacts was identified. The final monitoring round(s) from the wells were all non-detect.

Based on the results of the current investigation, no further work is recommended at this time.

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1.0 INTRODUCTION

GEMTEC Consulting Engineers and Scientists Ltd. (GEMTEC) was retained by Novatech Engineering Consultants (Novatech) to carry out a Phase Two Environmental Site Assessment (ESA) for the property located 5618 Hazeldean Road in Ottawa, Ontario (hereafter referred to as "the subject property"). The general location of the subject property is illustrated on the Key Plan, Figure 1.

The purpose of the Phase Two ESA was to investigate the areas of potential environmental concern identified in the Phase One ESA dated August 2017, and to assess the potential for environmental impacts at the subject property. This Phase Two ESA was completed in general accordance with Ontario Regulation 153/04.

1.1 Phase Two Property Description

The subject property is approximately 39 hectares (97 acres) in size. The legal description for 5618 Hazeldean Road is 'Part of Lot 28, Concession 11, being Parts 1, 2, and 3 on Plan 4R-24157, except Parts 1, 2, and 3 on Plan 4R-27840, subject to easements, Geographic Township of Goulbourn, City of Ottawa, PIN 04450-2601

1.2 Phase Two Property Ownership

The subject property is presently owned by Kizell Management Corporation. The contact person for the subject property is Mr. Stephen Upton, Director of Special Projects at Tridel.

1.3 Current and Future Land Uses

The current land use is agricultural and has generally been used for agricultural purposes since its patent in 1824. Currently plans are being prepared to develop lands in the area to residential.

In accordance with Section 168.3.1 of the Environmental Protection Act (Ministry of Environment, 2019) a Record of Site Condition is not required to be filed for the subject property.

2.0 BACKGROUND INFORMATION

2.1 Physical Setting

The subject property was patented in 1824, with first development for agriculture sometime prior to 1932. Services including hydro, water, natural gas, and sanitary and storm sewer are available to the site.

The topography of the subject property slopes downward from west to east and is at an approximate elevation of between 104 and 100 metres above sea level. Surrounding topography generally slopes gradually downwards towards the Carp River, which is located approximately 800 metres to the east of the subject property.

2.2 Past Investigations

A Phase One ESA was conducted by GEMTEC, formerly Houle Chevrier Engineering Ltd., for the subject property in August 2016 and is provided in their report titled “Phase One Environmental Site Assessment, Kizell Lands, 5618 Hazeldean Road, Ottawa, Ontario”. The Phase One ESA was carried out by or under the supervision of the qualified person in general accordance with Ontario Regulation 153/04 made under the Environmental Protection Act.

The following Areas of Potential Environmental Concern (APECs) were determined through the Phase One ESA to exist for the subject property:

APEC 1: Location of former farmhouse and auxiliary buildings (east side)

From the time of first development, it appears the subject property has been utilized for agricultural purposes. Originally, it appears the property, although legally one parcel, was divided into two halves along its north to south centerline, and each half contained a separate farm house. The former farm house and auxiliary farm buildings which did exist on the east half were situated near the north end of the property along Hazeldean Road. Given the age of the farm house, it may have been heated with furnace oil although the former heating source is presently unknown. Moreover, the location was used for farming for several years, as such, it is likely that fuel, oils, and other chemicals have been stored and handled at this location. There is some debris on the surface in this area, including: a large metal storage tank, hydraulic oil pails, and rusted metal containers.

APEC 2: Location of farmhouse and former auxiliary buildings (west side)

As previously indicated, the subject property was divided into two portions for farming purposes. The west side also contained a farm house (which still exists however is now known as 5654 Hazeldean Road) and former farming auxiliary buildings (of which remnants remain on the subject site). Given the age of the farm house, it may have been heated with furnace oil although the former heating source is presently unknown. Moreover, the location was used for farming for

several years, as such, it is likely that fuel, oils, and other chemicals have been stored and handled at this location. As well, building and operation remnants are currently present in the area, and include metal refuse piles, as well as empty drums and containers.

APEC 3: Area adjacent the west subject property line

The light industrial/commercial properties along Iber Road were first developed around the late 1970s or early 1980s. By the late 1990s to early 2000s, the majority of the properties were occupied. Several of the past and current tenants are registered as waste generators (producing or storing chemicals such as oils, lubricants and solvents) and/or manufacturers. During the site reconnaissance, several empty product containers were observed on the subject property throughout this area.

Based on the results from the Phase One ESA, a Phase Two Environmental Site Assessment was recommended for the subject property in order to investigate the APECs identified.

2.3 Freedom of Information Request

Following completion of the first round of Phase II ESA sampling work, additional records were requested from the Ministry of Environment, Conservation and Parks (MECP) due to the presence of low levels of a chlorinated solvent that was detected in a groundwater sample from a monitoring well installed near the properties along Iber Road, well BH18-9. A Freedom of Information (FOI) request was filed for civic addresses 109,113,139 119 and 135 Iber Road. These properties adjoin the area of interest. The FOI records are included in Appendix E and a summary is provided in Section 3.3 of this report.

3.0 SCOPE OF INVESTIGATION

3.1 Overview of Site Investigation

The objectives of the Phase Two ESA were based on the results of the Phase One ESA and are as follows:

- To document the presence or absence of contaminants in the soil or groundwater on, in or under the subject property, specifically within the areas of the APECs;
- To identify the locations of and concentrations of contaminants in the soil or groundwater on, in or under the subject property, if applicable; and,
- To assess if the subject property meets the applicable MECP Site Condition Standards (SCS).

It is noted that, the presence or absence of contaminants was investigated at discrete sampling locations using a limited number of samples.

The following tasks were completed during the Phase Two ESA:

- A sampling and analysis plan was prepared based on the results of the Phase One ESA;
- In 2017, 10 boreholes were advanced on the site, where eight were completed as monitoring wells;
- In 2018, six additional boreholes completed as monitoring wells were advanced on the site, where five were installed in the bedrock;
- 14 soil samples, including two duplicate samples, were collected and submitted for analysis;
- 31 groundwater samples, including four duplicate samples and one trip blank, were collected and submitted for analysis;
- Soil and groundwater samples were submitted to a CALA-accredited laboratory for analysis of contaminants of concern;
- The analytical results were compared with the applicable MECP SCS; and,
- A Phase Two ESA report was prepared.

3.2 Media Investigated

This Phase Two ESA included sampling and analysis of soil and groundwater. No sediment sampling was conducted as no surface water bodies are present on the subject property. The rationale for sampling the soil and groundwater was to investigate the potential for contamination at each APEC identified in the Phase One ESA.

The soil quality at discrete locations on the subject property was assessed by collecting soil samples from the boreholes advanced as part of this field program. All soil samples were field

preserved in methanol, as appropriate, and submitted for laboratory analysis of the identified contaminants of concern. The locations of the sampling locations are provided on Figure 2.

Groundwater quality at the subject property was assessed by collecting groundwater samples from 14 monitoring well locations. Groundwater samples were collected in laboratory supplied bottles using dedicated sampling equipment.

3.2.1 Potentially Contaminating Activities

The following potentially contaminating activities were identified in the Phase One to create APECs on-site:

- Former farm house and auxiliary buildings (west and east sides); and,
- Light industrial/commercial properties along Iber Road adjacent west to the subject property.

The Phase One indicated that private septic systems on some properties along Iber Road as a possible contaminating activity; however, additional discussions with municipal consultants familiar with the area suggests that the properties along Iber Road were likely always serviced with sanitary sewer. The ERIS Report, included in the Phase One, lists some of the properties as containing private sewage works, but this likely refers to storm water. Nevertheless, the presence of light industrial operations registered as waste generators and manufacturers is enough to warrant including this area as an APEC.

3.2.2 Areas of Potential Environmental Concern

The APECs on the subject property are summarized in the following table:

Table 3.1: Areas of Potential Environmental Concern

APEC	Location of APEC on Phase One Property	PCA	Location of PCA	Contaminants of Potential Concern	Media Potentially Impacted
APEC 1	Area of former farm house and auxiliary buildings (east side).	Potential fuel storage and handling, potential chemical storage and handling.	On site	• PHCs[1] • BTEX[2] • PAHs[3]	Soil Groundwater
APEC 2	Area of former farm house and auxiliary buildings (west side)	Potential fuel storage and handling, potential chemical storage and handling.	On site	• PHCs • BTEX • PAHs[3] • Organochloride Pesticides	Soil Groundwater

APEC	Location of APEC on Phase One Property	PCA	Location of PCA	Contaminants of Potential Concern	Media Potentially Impacted
APEC 3	Area along western property boundary	Presence of light industrial operations registered as waste generators and manufacturers at properties adjacent to the west side of the subject property.	On site	• PHCs • BTEX • PAHs • VOCs[4]	Soil Groundwater

1 PHCs – Petroleum hydrocarbons
2 BTEX – Benzene, toluene, ethylbenzene and xylene
3 PAHs – Polycyclic aromatic hydrocarbons
4 VOCs – Volatile organic compounds

3.3 Results of the FOI Request

The results of the Freedom of Information (FOI) request as summarized in Table 3.2 below.

Table 3.2: Summarized FOI

Address	Summarized FOI Information
109 Iber Road	No FIO information returned
113 Iber Road	Surface water pollution: occurrence report identified oil spill in ditch, and duel odours in the area. Suspected source is nearby division of allied VanLines.
139 Iber Road	Business: LD Tool and Die Listed in hazardous waste information network (hwin) as producer of miscellaneous waste organic chemicals, waste oils & sludges, waste crankcase oils/ lubricants, and emulsified oils.
119 Iber Road	Listed in hwin as producer of waste crankcase oils/ lubricants, and emulsified oils.
135 Iber Road	Business: Ottawa Power Coating Listed in hwin as producer of aliphatic solvents and residues, and organic acids. Registered in 1991 for waste naptha petroleum. Installed liquid waste holding tank in 2008, prior to that disposed in municipal sewer.

No specific incident or report was identified as the source of the groundwater impacts in the shallow wells along the western property boundary.

3.4 Deviations from Sampling and Analysis Plan

Due to site constraints, boreholes and monitoring wells advanced in the southwest portion of the site were drilled separately. Due to shallow bedrock identified during the field program, additional boreholes and monitoring wells were advanced to delineate the bedrock profile and investigate both the overburden and bedrock aquifers. No other deviations from the sampling and analysis plan were required.

3.5 Impediments

Three of the proposed locations for boreholes on site were not accessible during the initial phase of drilling along the south portion of the western property boundary. After coordination with a landowner from Iber Road, drilling resumed in February 2018.

4.0 INVESTIGATION METHODS

4.1 General

Eleven soil samples were collected on November 24, 2017. Four groundwater samples were collected on December 19, 2017. Additional soil and groundwater samples were collected on February 9, 2018 and February 15, 2018, respectively. Additional groundwater samples were collected from select monitoring wells on May 10 and 11, 2018, July 26, 2018, August 10, 2018 and March 1, 2019.

Soil and groundwater samples were submitted to a CALA-accredited laboratory for chemical analyses of selected parameters.

4.2 Borehole Drilling

The boreholes were advanced at the subject property using rotary and geoprobe drill rigs supplied and operated by George Downing Estate Drilling and Strata Environmental Drilling, respectively.

4.3 Soil Sampling

Soil samples were collected following the Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario (MOE, 1996). Soil samples were collected from the subsurface and placed directly into sample jars and resealable zipper bags using nitrile gloves. Approximately 5 gram soil samples were also obtained using laboratory supplied disposable syringes and placed into methanol preserved vials for analysis.

4.4 Groundwater Field Measurements

A Heron Instruments oil/water interface meter was used to measure groundwater levels. Free petroleum products were not detected in the site monitoring wells at the time of the field investigation.

4.5 Groundwater Sampling

Groundwater samples were collected following the Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario (MOE, 1996). All groundwater samples were collected in laboratory supplied bottles, using a low-flow pump with dedicated tubing. Prior to sampling, the monitoring wells were developed by purging the wells a minimum of three well volumes and/or until dry. All groundwater samples were stored in a cooler within an accepted temperature range.

4.6 Sediment Sampling

No sediments were sampled as part of the Phase Two ESA work program as there are no surface water bodies present on the site.

4.7 Analytical Testing

Laboratory analysis of soil samples and groundwater samples was carried out by AGAT Laboratories located in Mississauga, Ontario and Paracel Laboratories Ltd located in Ottawa, Ontario.

4.8 Residue Management Procedures

No excess soil cuttings were produced as a result of soil sampling.

4.9 Elevation Surveying

The ground surface elevations at the location of the boreholes were determined using a Trimble R10 global positioning system. The coordinates of the boreholes are referenced to NAD83 (CSRS) Epoch 2010, vertical network CGVD28 and are considered to be accurate within the tolerance of the instrument. The ground surface elevations are provided on the Borehole Location Plan, Figure 2.

4.10 Quality Assurance and Quality Control Measures

Soil Samples

Soil samples were collected in clear glass jars and vials containing methanol preservative supplied by the laboratory. In the field, a pen or permanent marker was used to record the client (GEMTEC), project number, date of sampling and sample number. A chain of custody was completed to include the information for each sample collected and was attached to the cooler storing the samples while the samples were transferred to the analytical laboratory for chemical testing.

A new pair of nitrile gloves was worn for collecting each of the soil samples to minimize cross contamination between samples and to protect staff from exposure to contaminants. The samples were collected directly into laboratory supplied jars. The samples for the vials containing the methanol preservative were collected using new plastic syringes supplied by the laboratory.

The soil samples collected in the laboratory supplied containers were immediately preserved in the field by placing the samples in a laboratory supplied cooler. Soil samples were submitted within the maximum allowable holding time.

Groundwater

Groundwater samples were collected in laboratory supplied bottles and vials specific to the requested analysis. In the field, a pen or permanent marker was used to record the client (GEMTEC), project number, date of sampling and sample number.

A new pair of nitrile gloves was worn during the collection of each of the groundwater samples to minimize cross contamination between samples and to protect staff from exposure to contaminants. Groundwater was sampled from the wells using dedicated sampling equipment for each well. No cleaning procedures were required as the gloves and dedicated sampling equipment were disposed of following sample collection.

The groundwater samples collected in the laboratory supplied containers were immediately cooled in the field by placing the samples in a laboratory supplied cooler with ice packs. Groundwater samples were submitted to the laboratory the day after collection for analysis, well within the maximum allowable holding time.

5.0 REVIEW AND EVALUATION OF INFORMATION

5.1 Geology

Based on surficial geology maps of the Ottawa area, it is expected that the overburden at the site is characterized primarily by deposits of silty clay of marine origin over glacial till. There is a localized area in the west part of the site that is characterized by exposed bedrock and/or bedrock at shallow depth.

The overburden thickness is indicated to range from 0 to 3 metres within the southwest part of the site, increasing to between 5 and 10 metres to the north and east. Geological descriptions of the collected soil samples were grey to brown silty clay, with some being clayey silt.

The bedrock is mapped as interbedded silty dolostone, lithographic to fine crystalline limestone, oolitic limestone, shale and fine grained calcareous quartz sandstone of the Gull River formation. There are no bedrock faults mapped at the site.

Figure 3 provides an illustration of bedrock outcroppings and surficial soil depths across the site.

5.2 Groundwater Elevations

The groundwater depths were measured in the monitoring wells prior to each sampling event. No free product was detected by the Heron Instruments oil/water interface meter. The groundwater depths and corresponding elevations are provided in Table F1 in Appendix F.

Depth to groundwater ranges from approximately 0.5 to 5.5 metres below the ground surface. Based on groundwater elevations at all of the well locations, groundwater flow is north to northeast across the site, except in the area of the BH18-11 where groundwater flow in the bedrock is in a south to southeast direction, possibly reflecting a local topographic bedrock high. It is important to note that groundwater levels may vary seasonally across the site, following precipitation events, and in areas of surface drains and underground infrastructure.

5.3 Applicable Site Condition Standard

Site condition standards were selected for this site in accordance with the requirements of Ontario Regulation 153/04, Record of Site Condition – Part XV.1 of the Environmental Protection Act (O. Reg. 153/04, Ministry of Environment, 2011). Soil and groundwater results for the current investigation were be compared to the MECP SCS as outlined below.

Two site condition standards were selected for the subject property due to an area with less than 2 metres of soil, including bedrock outcrops.

The following information was considered in selecting the applicable MECP SCS:

- The subject property, and properties within 100 metres, are serviced with municipal water;
- The overburden thickness for most of subject property is greater than 2 metres but a 3.8 hectare area contains bedrock out crops and thin soils (<2 m);
- The current property use is agricultural land use, with proposed residential land use; and,
- No sensitive sites, such areas of natural or scientific interest, were identified on the subject property.

Based on the above, two Site Condition Standards were selected for the subject property to reflect the two areas of overburden thickness:

- Table 3 Full Depth (>2 m of overburden) Generic Site Condition standards in a Non-Potable Groundwater Condition for Residential/ Parkland/ Institutional use (coarse grained soils).
- Table 7 Generic Site Condition Standards for Shallow Soils (<2 m of overburden) in a Non-Potable Ground Water Condition for Residential/ Parkland/ Institutional use (coarse grained soils).

5.4 Soil Quality

The soil results were compared to the applicable SCS for residential land use and are presented in Table B1, in Appendix B. The laboratory certificates of analysis for the soil samples analyzed are included in Appendix D.

As shown in Table B1 in Appendix B, the soil sample results exceed the applicable MECP Table 3 and Table 7 SCS for barium (sample BH17-8 SA-1) and vanadium (sample BH17-6 SA-2 and BH17-8 SA-1). The vanadium concentration in sample BH17-8 SA-1 only exceeds the SCS when averaged with the duplicate sample concentration, but only slightly, 87 µg/g compared to a SCS of 86 µg/g.

The locations and depths of the selected soil samples submitted for laboratory analysis are summarized in Table 5.1 below.

Table 5.1: Summary of Analytical Soil Samples

Borehole / Monitoring Well ID	Sample ID	Sample Description	Depth Interval (m bgs[1])	Parameters Analyzed
BH17-1	SA-2	Silty clay	0.61 – 1.22	Metals and inorganics, BTEX, OC Pesticides, PAHs, and PHCs
BH17-2	SA-1	Topsoil/ Silty clay	0 – 0.61	Metals and inorganics, BTEX, OC Pesticides, PAHs, and PHCs
BH17-3	SA-2	Silty clay	0.61 – 1.22	Metals and inorganics, BTEX, OC Pesticides, PAHs, and PHCs
BH17-4	SA-2	Silty clay	0.61 – 1.22	Metals and inorganics, BTEX, OC Pesticides, PAHs, and PHCs
BH17-5	SA-1	Fill/ Silty clay	0 – 0.61	Metals and inorganics, BTEX, OC Pesticides, PAHs, and PHCs
BH17-6	SA-2	Silty clay	0.61 – 1.22	Metals and inorganics, PHCs, and VOCs
BH17-7	SA-1	Topsoil/ Till	0 – 0.71	Metals and inorganics, PHCs, and VOCs
BH17-8 & BH18-108	SA-1	Topsoil/ Silty Clay	0 – 0.61	Metals and inorganics, PHCs, and VOCs
BH17-8 & BH18-108[1]	SA-8	Till	4.27 – 4.88	PHCs, and VOCs
BH18-9	SA-2	Silty clay to Clayey silt	0.76 – 2.28	Metals and inorganics, BTEX, OC Pesticides, PAHs, and PHCs
BH18-10S	SA-1	Topsoil	0 – 0.76	Metals and inorganics, BTEX, OC Pesticides, PAHs, and PHCs
BH18-10S	SA-4	Till	2.29 – 3.35	Metals and inorganics, PHCs, and VOCs

Notes:

1. BH18-108 is a duplicate of borehole BH18-8

5.5 Groundwater Quality

The laboratory certificates of analysis for the groundwater samples are presented in Appendix D. The location, date and parameters analysed are summarized in the following table:

Table 5.2: Summary of Groundwater Analytical Samples

Well ID	Screened Interval	Water Level (m bgs)	Groundwater Elevation (mASL)	Parameters Analysed
BH17-3	overburden	1.81	98.40	19/12/2017: Metals, OC Pesticides, PAHs, and PHCs
BH17-5	overburden	0.70	101.01	19/12/2017: Metals, OC Pesticides, PAHs, and PHCs
BH17-6	overburden	1.04	101.32	19/12/2017: Metals, PHCs, and VOCs
BH17-8	overburden	1.34	101.82	19/12/2017: Metals, PHCs, and VOCs
BH18-9	bedrock	3.15	102.89	15/02/2018: Metals, PHCs, and VOCs 11/05/2018 & 26/07/2018 & 10/08/2018 & 01/03/2019 : VOCs
BH18-10S	overburden /bedrock	2.32	102.81	15/02/2018: Metals, PHCs, and VOCs 11/05/2018 & 26/07/2018 & 10/08/2018 & 01/03/2019 : VOCs
BH18-10D	bedrock	2.37	102.67	26/07/2018 & 20/08/2018 & 12/06/2018 & 01/03/2019: VOCs
BH18-11	bedrock	1.63	104.31	26/07/2018 & 20/08/2018 & 12/06/2018 & 01/03/2019: VOCs
BH18-12	bedrock	1.35	102.62	26/07/2018 & 20/08/2018 & 12/06/2018 & 01/03/2019: VOCs
BH18-13	bedrock	5.17	101.23	26/07/2018 & 20/08/2018 & 12/06/2018 & 05/03/2019: VOCs

Notes:

1. m ASL – metres above sea level

The analytical results from the laboratory certificates of analysis were compared with the applicable MECP Table 3 and 7 SCSs (MOE, 2011). The results are summarized in Table C1, Appendix C and illustrated in Figure 4.

Low levels of the chlorinated solvent trichloroethylene (TCE) were detected in groundwater samples recovered from monitoring wells MW18-9 on February 15, 2018, and May 11, 2018, and MW18-10S on February 15, 2018 but none of the sampling rounds identified concentrations in excess of the applicable SCS. TCE was not detected in the last three sample rounds from MW18-9 (July 26, 2018, August 10, 2018 and March 1, 2019) and was non-detect in the last sample round from MW18-11.

Benzene concentrations were detected in excess of the applicable Table 7 SCS in the initial groundwater samples from MW18-11 on July 26, 2018, and August 20, 2018, and MW18-12 on July 26, 2018, but concentrations decreased in subsequent sampling rounds and were non-detect in the final sampling round.

5.6 Sediment Quality

No sediments were investigated as part of the Phase Two ESA as there are no surface water bodies present on the site.

5.7 Quality Assurance and Quality Control Results

The following QA/QC measures were employed during the Phase Two ESA field investigation activities to maintain sample integrity:

- Sampling and monitoring equipment (e.g. oil/water interface meter) were cleaned between sampling points (e.g. monitoring wells) using an Alconox® and a distilled water mixture followed by a distilled water rinse;
- All soil and groundwater samples collected for laboratory analysis were collected in appropriate new sample containers provided by the laboratory;
- Groundwater samples analysed for PHCs and VOCs were collected with no headspace to minimize potential loss of volatile compounds;
- Samples were stored in coolers until submission to the laboratory; and
- Samples submitted to the laboratory were accompanied by a signed and dated Chain of Custody form and were packaged in custody sealed cooler(s).

Soil Samples

Two duplicate soil samples were submitted for analysis of selected parameters. The soil sample BH 17-801 SA1 is a duplicate of sample BH 17-8 SA1, and BH 17-801 SA8 is a duplicate of sample BH 17-8 SA8.

Relative Standards Deviations (RPDs) were calculated for all parameters where the original and duplicate sample concentrations exceeded five times the reportable detection limits (RDL). All of the QA/QC RPDs (with sample values greater than five times the RDL) for the duplicate samples were within the acceptable limit for soils (MOE, 2011) with the exception of the duplicate for conductivity and sodium abortion ration between MW17-108 SA1 and MW17-8 SA1.

The Laboratory QA/QC results for the soil analyses are included with the laboratory analytical data provided in Appendix D. Soil sample holding times were met, and the laboratory quality control blanks, duplicates, spikes, and surrogate compound recoveries met applicable industry criteria for almost all parameters, all batch samples were accepted by the lab.

Groundwater Samples

Duplicate groundwater samples were submitted approximately once per sampling event for analysis of selected parameters. The groundwater sample BH17-103 is a duplicate of BH17-3, MW18-109 SA2 is a duplicate of MW18-9 SA2, BH18-9 GW101 is a duplicate of BH18-9 GW1, BH18-9 GW102 is a duplicate of BH18-9 GW2, and MW18-112 GS2 is a duplicate of MW18-12 GS2.

RPDs were calculated for all parameters where the original and duplicate sample concentrations exceeded five times the reportable detection limits (RDL). All of the QA/QC RPDs (with sample values greater than five times the RDL) for the duplicate samples were within the acceptable limit for soils (MOE, 2016) with the exception of the duplicate for vanadium between BH17-103 and BH17-3.

The Laboratory QA/QC results for the groundwater analyses are included with the groundwater laboratory analytical data provided in Appendix D. Groundwater sample holding times were met, and most laboratory quality control blanks, duplicates and spikes and surrogate compound recoveries met applicable industry criteria.

In general, the laboratory and field duplicate samples agree closely with the parent samples, and both samples either exceeded, or both samples met the applicable guidelines. Two exceptions were noted as follows: one duplicate soil sample slightly exceeded the standard for vanadium (88 µg/g compared to a standard of 86 µg/g), but the concentration in the original sample was the same as the standard; and, the concentration of one groundwater duplicate was less than the laboratory reporting limit of 0.2 µg/L, but the original sample contained a concentration of 0.22 µg/L. In-house quality checks performed by the lab are summarized in the laboratory certificates (Appendix D) and are within the acceptable ranges.

Based on the measures discussed above, sample collection and handling protocols are considered acceptable and associated analytical results reproducible. The quality of the data from the investigation was sufficient in that decision making was not affected, and the overall objectives of the investigation and assessment were met.

5.8 Phase Two Conceptual Site Model

5.8.1 Potentially Contaminating Activities

The Phase One ESA identified the following potentially contaminating activities on the subject property:

- Former presence of a farmhouse and auxiliary farm buildings on what is referred to as the east half of the subject property. Based on the age of the original home and common practices associated with farming (i.e. storing and handling petroleum and other chemicals).
- Former presence of auxiliary farm buildings on what is referred to as the west half of the subject property (and the original farm house now located at 5654 Hazeldean Road). Similar contaminating activities to the east half of the property but also includes a debris pile (possible former farm dump).
- Light industrial use sites along the western boundary of the site. Several of the past and current tenants have been registered as waste generators and manufactures. Empty container of potentially contaminating product were observed on the subject property adjacent the industrial sites.

5.8.2 Areas of Potential Environmental Concern (APECs)

A description and assessment of areas where potentially contaminating activities have occurred and areas of potential environmental concern are summarized in the following table:

Table 5.3: Areas of Potential Environmental Concern

APEC	Location of APEC on Phase One Property	PCA	Location of PCA	Contaminants of Potential Concern	Media Potentially Impacted
APEC 1	Area of former farm house and auxiliary buildings (east side).	Potential fuel storage and handling, potential chemical storage and handling.	On site	• PHCs[1] • BTEX[2] • PAHs[3]	Soil Groundwater
APEC 2	Area of former farm house and auxiliary buildings (west side)	Potential fuel storage and handling, potential chemical storage and handling.	On site	• PHCs • BTEX • PAHs[3] • Pesticides	Soil Groundwater
APEC 3	Area along western property boundary	Presence of light industrial operations registered as waste generators and manufacturers at properties adjacent to the west side of the subject property.	On site	• PHCs • BTEX • PAHs • VOCs[4]	Soil Groundwater

5.8.3 Subsurface Structures

There is potential for underground utilities to affect contaminant transport on or to the subject property, if contaminants are present. It is understood that the subject site is not currently serviced (lateral connections) by the existing infrastructure along Hazeldean Road.

5.8.4 Physical Settings and Hydrogeological Characteristics of the Subject Property

Shallow soil conditions (<2 metres) are present along the western property boundary where bedrock is present at the ground surface. The overburden thickness increases eastward across the property and based on available mapping it is in excess of 10 metres near the eastern property boundary. The overburden consists primarily of fine-grained silt and clay soils.

The bedrock is mapped as Paleozoic limestone and dolostone of the Gull River Formation.

Depth to groundwater ranged from approximately 0.5 to 5.5 metres below the ground surface. Based on the topography of the area, it is expected that the local shallow groundwater flow is towards the east. Measured water levels indicate that groundwater flow directions are influenced by local topographic features on the site.

5.8.5 Selection of Site Condition Standards

Site condition standards were selected for this site in accordance with the requirements of Ontario Regulation 153/04, Record of Site Condition – Part XV.1 of the Environmental Protection Act (O. Reg. 153/04, Ministry of Environment, October 31, 2011). Due to thin soils in areas of the site, the following standards are applied:

- Table 3 Full Depth (>2 m of overburden) Generic Site Condition Standards in a Non-Potable Groundwater Condition for Residential/ Parkland/ Institutional use (coarse grained soils).
- Table 7 Generic Site Condition Standards for Shallow Soils (<2 m of overburden) in a Non-Potable Ground Water Condition for Residential/ Parkland/ Institutional use (coarse grained soils).

5.8.6 Identified Contamination and Impacted Medium on the Subject Property

The Phase Two ESA investigated the APECs identified in the Phase One ESA and the results of the investigation for each APEC are summarized below:

APEC 1: Location of former farm house and auxiliary buildings (east side)

Soil and groundwater samples submitted from the site, soil samples BH17-1 SA-2, BH17-2 SA-2, BH17-3 SA-2 and groundwater sample MW17-3, met the applicable MECP SCS for metals, PHCs, PAHs, and OC pesticides.

APEC 2: Location of farm house and former auxiliary buildings (west side)

Soil and groundwater samples submitted from the site, soil samples BH17-4 SA-2 and BH17-5 SA-1 and groundwater sample MW17-5, met the applicable MECP SCS for metals, PHCs, PAHs, and OC pesticides.

APEC 3: Area adjacent the west subject property line

Soil samples BH17-6 SA-2, BH17-7 SA-1, BH17-8 SA1, BH17-8 SA8, MW18-9 SA2, MW18-10 SA1 and MW18-10 SA4, met the applicable MECP SCS for metals, PHCs, PAHs, OC pesticides and VOCs. Two exceedances included native clay samples, BH17-6 SA-2 and BH17-8 SA-1, which contained barium and vanadium concentrations in excess of the MECP SCS. However, the concentrations are well within ranges encountered in native clay soils in the Ottawa area and are not considered to represent anthropogenic contaminants but rather naturally occurring elevated concentrations.

Groundwater samples, MW17-6, MW17-8, MW18-9, MW18-10S, MW18-10D, BH18-11, BH18-12 and BH18-13, met the applicable MECP SCS for metals, PHCs, and VOCs. The two exceptions were for benzene at well locations BH18-11 and BH18-12. However, levels decreased in follow-up samples and concentrations were below the laboratory reporting limits in the final samples.

5.8.7 Summary of Identified Impacts

The following MECP exceedances were identified in soil and groundwater, summarized in Figure 4:

- Soil: barium and vanadium concentrations exceeded the standards in samples BH17-6 SA-2 and BH17-8 SA-1. Both samples were native clay soils and concentrations are well within ranges encountered in native clay soils in the Ottawa area. Average barium concentrations in the clay across the site do not exceed the standards.

- Groundwater: benzene concentrations in samples from monitoring wells BH18-11 and BH18-12 exceeded the standards. However, concentrations decreased in follow up samples and were non-detect in the final sampling round.

  Low levels of trichloroethylene (TCE) were detected in groundwater samples from monitoring wells MW18-9, MW18-10S and MW11. Although levels did not exceed applicable standards, additional sampling was performed due to the proximity of the well with the maximum exceedance, MW18-9, to an area of thin soils where more stringent Table 7 SCS would apply. Levels decreased in subsequent sampling rounds and were non-detect in the last three sample rounds from MW18-9.

6.0 CONCLUSIONS

The Phase One ESA report previously carried out for the subject property recommended that a Phase Two ESA investigation be carried out for the property located at 5618 Hazeldean Road in Ottawa, Ontario (hereafter referred to as "the subject property"). The Phase Two ESA investigated the three APECs identified in the Phase One ESA and the results of the investigation for each APEC are summarized below:

APEC 1: Location of former farm house and auxiliary buildings (east side)

Soil and groundwater samples submitted from the site met the MECP SCS for metals, PHCs, PAHs, and OC pesticides.

APEC 2: Location of farm house and former auxiliary buildings (west side)

Soil and groundwater samples submitted from the site met the applicable MECP SCS for metals, PHCs, PAHs, and OC pesticides.

APEC 3: Area adjacent the west subject property line

Barium and vanadium concentrations were detected in excess of the MECP SCS in two native clay samples, BH17-6 SA-2 and BH17-8 SA-1. However, the concentrations are well within ranges encountered in native clay soils in the Ottawa area and average concentrations in the native clay across the site do not exceed the standards.

Benzene concentrations at well locations BH18-11 and BH18-12 exceeded the applicable standards. However, levels decreased in follow-up samples and concentrations were below the laboratory reporting limits in the final samples.

Discussion

Soil and groundwater samples from APEC 1 and APEC 2 did not exceed the applicable standards. However, there is uncertainty regarding the location of the original infrastructure at these locations.

Based on the available information, no offsite source of the groundwater impacts near the western property boundary were identified. The origins of low-level contamination initially identified in shallow groundwater could be related to runoff and infiltration into the exposed bedrock from any of the properties along Iber Road.

Based on the results of the current investigation no further work is recommended at this time.

7.0 LIMITATION OF LIABILITY

This report and the work referred to within it have been undertaken by GEMTEC Consulting Engineers and Scientists Ltd (GEMTEC), formerly Houle Chevrier Engineering Ltd, and prepared for the Novatech and is intended for the exclusive use of the Novatech. This report may not be relied upon by any other person or entity without the express written consent of GEMTEC and the Novatech. Nothing in this report is intended to provide a legal opinion.

The investigation undertaken by GEMTEC with respect to this report and any conclusions or recommendations made in this report reflect the best judgements of GEMTEC based on the site conditions observed during the investigations undertaken at the date(s) identified in the report and on the information available at the time the report was prepared.

This report has been prepared for the application noted and it is based, in part, on visual observations made at the site, subsurface investigations at discrete locations and depths and laboratory analyses of specific chemical parameters and material during a specific time interval, all as described in the report. Unless otherwise stated, the findings contained in this report cannot be extrapolated or extended to previous or future site conditions, portions of the site that were unavailable for direct investigation, subsurface locations on the site that were not investigated directly, or chemical parameters, materials or analysis which were not addressed. Chemical parameters other than those addressed by the investigation described in this report may exist in soil and groundwater elsewhere on the site, the chemical parameters addressed in the report may exist in soil and groundwater at other locations at the site that were not investigated and concentrations of the chemical parameters addressed which are different than those reported may exist at other locations on the site than those from where the samples were taken.

Should new information become available during future work, including excavations, borings or other studies, GEMTEC should be requested to review the information and, if necessary, re-assess the conclusions presented herein.

8.0 REFERENCES

Canadian Standards Association (CSA) Standard. CSA Z768-01, Phase I Environmental Site Assessment, Canadian Standards Association International. November 2001, reaffirmed in 2016

Environmental Systems Research Institute (ESRI). 2011. ArcGIS Desktop: Release 10. Redlands, CA: Environmental Systems Research Institute.

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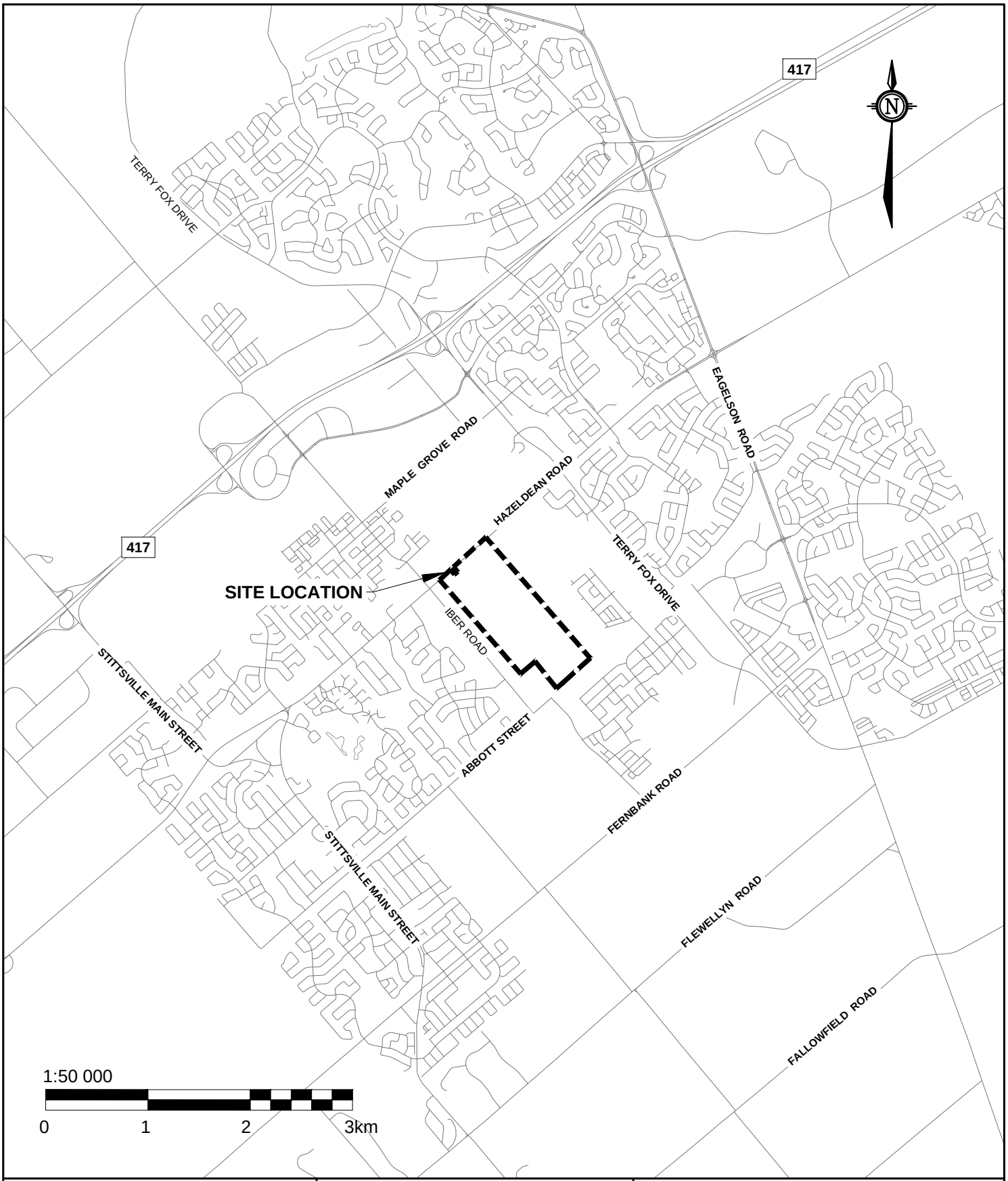
Ontario Ministry of the Environment (MOE). Soil, Groundwater and Sediment Standards for use under part XV.1 of the Environmental Protection Act. April 15, 2011.

Ontario Ministry of the Environment and Climate Change. Ontario Regulation 153/04, Made under the Environmental Protection Act, Part XV.1 – Records of Site Condition. October 31, 2011 updated January 1, 2014.

We trust this report provides sufficient information for your present purposes. If you have any questions concerning this report, please do not hesitate to contact our office.

Nicole Soucy, B.A.Sc., M.A.Sc.
Environmental Scientist

Shaun Pelkey, M.Sc.E., P.Eng.
Principal, Environmental Engineer



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Project	Drawing
PHASE TWO ESA FERNBANK COMMUNITY NORTH OTTAWA, ONTARIO	KEY PLAN

Drwn By	Chkd By	Date	Project No.	Revision No.	
P.C.	N.S.	JULY 2019	64153.50	0	**FIGURE 1**

LEGEND

- **BH 17-1 100.48** — BOREHOLE LOCATION IN PLAN (current investigation by GEMTEC); GROUND SURFACE ELEVATION IN METRES GEODETIC DATUM
- **MW 17-3 100.20** — MONITORING WELL (current investigation by GEMTEC)
- SUBJECT SITE

Scale 1:7500

0 150 300 450m

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Drawing: BOREHOLE LOCATION PLAN

Client: NOVATECH

Project: 64153.50

PHASE TWO ESA
FERNBANK COMMUNITY NORTH
OTTAWA, ONTARIO

Drwn by: P.C.

Chkd by: N.S.

Date: JULY 2019

Rev.: 0

FIGURE 2

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LEGEND

- **BH 17-1 100.48** — BOREHOLE LOCATION IN PLAN (current investigation by GEMTEC); GROUND SURFACE ELEVATION IN METRES GEODETIC DATUM
- **MW 17-3 100.20** — MONITORING WELL (current investigation by GEMTEC)
- SUBJECT SITE
- SOIL <2.0m (MECP Table 7 SCS)

MECP Table 3 - Full Depth Generic Site Condition Standards in a Non-Potable Groundwater Condition

MECP Table 7 - Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition

Scale 1:7500

0 150 300 450m

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Drawing: ANTICIPATED OVERBURDEN THICKNESS

Client: NOVATECH

Project: 64153.50

PHASE TWO ESA
FERNBANK COMMUNITY NORTH
OTTAWA, ONTARIO

Drwn by: P.C.

Chkd by: N.S.

Date: JULY 2019

Rev.: 0

FIGURE 3

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BH17-6			
Sample Type	Sample ID	Description	Exceedances
Soil	BH17-6 SA2	Silty Clay 0.61-1.22	T1: Barium and Chromium T1 & T3: Vanadium[1]

BH 17-8			
Sample Type	Sample ID	Description	Exceedances
Soil	BH 17-8 SA1	Topsoil/ Silty Clay 0 - 0.61	T1: Chromium T1 & T3: Barium and Vanadium[1]

BH 18-12		
Sample Type	Sample ID	Exceedances
Groundwater	MW 18-12	T1 & T7: Benzene[2]

BH 18-11		
Sample Type	Sample ID	Exceedances
Groundwater	MW18-11 and MW18-11 GS2	T1 & T7: Benzene[2]

LEGEND

BH 17-1
100.48
BOREHOLE LOCATION IN PLAN
(current investigation by GEMTEC)
GROUND SURFACE ELEVATION IN METRES
GEODETIC DATUM

MW 17-3
100.20
MONITORING WELL
(current investigation by GEMTEC)

SUBJECT SITE

102
GROUNDWATER CONTOURS
(IN METRES)

1 - Soil sampled for Metals and inorganics, PHCs, and VOCs
2 - Groundwater sampled for VOCs

T1 - MECP Table 1: Full Depth Background Site Condition Standards

T3 - MECP Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Groundwater Condition

T7 - MECP Table 7 - Generic Site Condition Standards for Shallow Soils in a Non-Potable Ground Water Condition

Scale 1:7500

0 150 300 450m

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Drawing: SAMPLING EXCEEDANCES

Client: NOVATECH

Project: 64153.50

PHASE TWO ESA
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OTTAWA, ONTARIO

Drwn by: P.C.
Chkd by: N.S.

Date: JULY 2019
Rev.: 0

FIGURE 4

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APPENDIX A

Record of Borehole Sheets

RECORD OF BOREHOLE 17-1

CLIENT: Novatech
PROJECT: Kizell Lands - 5618 Hazeldean Road
JOB#: 64153.50
LOCATION: See Borehole Location Plan. Figure 2

SHEET: 1 OF 1
DATUM: Geodetic
BORING DATE: November 24, 2017

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLE DATA: NUMBER	TYPE	RECOVERY (mm)	BLOWS/0.3m	LABORATORY ANALYSES	COMBUSTIBLE VAPOUR CONCENTRATION (ppm)	ODOUR	TPH (mg/kg)	MONITORING WELL INSTALLATION AND NOTES
		Ground Surface		100.48									
0	Vibratory Hammer Casing 125 mm Diameter Casing	Grey sand and gravel (FILL MATERIAL)		100.33									
		Dark brown silty clay with organics material (TOPSOIL)		0.15 100.18 0.30	1	SA							
		Brown SILTY CLAY, trace sand seams			2	SA			Metals, BTEX, PHCs, PAHs and Pesticides	0			
1					3	SA				5			
2					4	SA				0			
					5	SA				0			
3					6	SA				0			
				96.82									
		Grey SILTY CLAY		3.66	7	SA				0			
4					8	SA				5			
		End of Borehole		95.60 4.88									

Backfilled with soil cuttings

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LOGGED: M.L.
CHECKED: S.P.

RECORD OF BOREHOLE 17-2

CLIENT: Novatech
PROJECT: Kizell Lands - 5918 Hazeldean Road
JOB#: 64153.50
LOCATION: See Borehole Location Plan. Figure 2

SHEET: 1 OF 1
DATUM: Geodetic
BORING DATE: November 24, 2017

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLE DATA: NUMBER	TYPE	RECOVERY (mm)	BLOWS/0.3m	LABORATORY ANALYSES	COMBUSTIBLE VAPOUR CONCENTRATION (ppm)	ODOUR	TPH (mg/kg)	MONITORING WELL INSTALLATION AND NOTES
		Ground Surface		99.79									
0	Vibratory Hammer Casing 125 mm Diameter Casing	Dark brown silty clay with organics material (TOPSOIL)		99.64									
		Brown SILTY CLAY		0.15	1	SA			Metals, BTEX, PHCs, PAHs and Pesticides	5			Backfilled with soil cuttings
1					2	SA				0			
					3	SA				5			
2					4	SA				5			
					5	SA				5			
3					6	SA				5			
				96.13									
		Grey SILTY CLAY		3.66	7	SA				20			
4					8	SA				5			
				94.91									
		End of Borehole		4.88									

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CHECKED: S.P.

RECORD OF BOREHOLE 17-3

CLIENT: Novatech
PROJECT: Kizell Lands - 5918 Hazeldean Road
JOB#: 64153.50
LOCATION: See Borehole Location Plan. Figure 2

SHEET: 1 OF 1
DATUM: Geodetic
BORING DATE: November 24, 2017

DEPTH SCALE METRES	BORING METHOD	DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	NUMBER	TYPE	RECOVERY (mm)	BLOWS/0.3m	LABORATORY ANALYSES	COMBUSTIBLE VAPOUR CONCENTRATION (ppm)	ODOUR	TPH (mg/kg)	MONITORING WELL INSTALLATION AND NOTES
		Ground Surface		100.20									
0	Vibratory Hammer Casing 125 mm Diameter Casing	Dark brown silty clay with gravel (FILL MATERIAL)		100.05 / 0.15	1	SA				0			Bentonite seal to surface
		Brown SILTY CLAY			2	SA			Metals, BTEX, PHCs, PAHs and Pesticides	5			
1					3	SA				5			Filter sand
					4	SA				0			TOP OF SCREEN ELEV.: 98.37 m
2				97.76 / 2.44									
		Brown SILTY CLAY to CLAYEY SILT			5	SA				5			
3					6	SA				15			38 mm Diameter, 3.05 metres long well screen
				96.54 / 3.66									
		Grey SILTY CLAY			7	SA				10			
4					8	SA				10			
				95.32									
		End of Borehole		4.88									BOTTOM OF SCREEN ELEV.: 95.32 m

GROUNDWATER OBSERVATIONS

DATE	DEPTH (m)	ELEVATION (m)
Jul. 10/19	1.81 ▽	98.40

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CHECKED: S.P.

ENV - BOREHOLE LOG 6415350_GINT LOGS_V01_23-07-2018 - NEW LIBRARY.GPJ GEMTEC 2018.GDT 17/7/19

RECORD OF BOREHOLE 17-4

CLIENT: Novatech
PROJECT: Kizell Lands - 5918 Hazeldean Road
JOB#: 64153.50
LOCATION: See Borehole Location Plan. Figure 2

SHEET: 1 OF 1
DATUM: Geodetic
BORING DATE: November 24, 2017

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLE DATA: NUMBER	TYPE	RECOVERY (mm)	BLOWS/0.3m	LABORATORY ANALYSES	COMBUSTIBLE VAPOUR CONCENTRATION (ppm)	ODOUR	TPH (mg/kg)	MONITORING WELL INSTALLATION AND NOTES
		Ground Surface		101.56									
0	Vibratory Hammer Casing 125 mm Diameter Casing	Dark brown silty clay with organics material (TOPSOIL)		101.41									
		Brown SILTY CLAY		0.15	1	SA				0			
					2	SA			Metals, BTEX, PHCs, PAHs and Pesticides	0			
1				100.34									
		Brown SILTY CLAY, trace to some sand		1.22	3	SA				10			
2					4	SA				5			
					5	SA				0			
3					6	SA				30			
				97.90									
		Grey CLAYEY SILT		3.66	7	SA				5			
4					8	SA				10			
				96.68									
		End of Borehole		4.88									

Backfilled with soil cuttings

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CHECKED: S.P.

ENV - BOREHOLE LOG 6415350_GINT LOGS_V01_23-07-2018 - NEW LIBRARY.GPJ GEMTEC 2018.GDT 17/7/19

RECORD OF BOREHOLE 17-5

CLIENT: Novatech
PROJECT: Kizell Lands - 5918 Hazeldean Road
JOB#: 64153.50
LOCATION: See Borehole Location Plan. Figure 2

SHEET: 1 OF 1
DATUM: Geodetic
BORING DATE: November 24, 2017

DEPTH SCALE METRES	BORING METHOD	DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	NUMBER	TYPE	RECOVERY (mm)	BLOWS/0.3m	LABORATORY ANALYSES	COMBUSTIBLE VAPOUR CONCENTRATION (ppm)	ODOUR	TPH (mg/kg)	MONITORING WELL INSTALLATION AND NOTES
		Ground Surface		101.71									
0	Vibratory Hammer Casing 125 mm Diameter Casing	Dark brown silty clay with organics material (TOPSOIL)		101.51 / 0.20	1	SA			Metals, BTEX, PHCs, PAHs and Pesticides	10			
		Brown SILTY CLAY, trace sand			2	SA				5			Bentonite seal to surface
1					3	SA				15			Filter sand
2					4	SA				10			TOP OF SCREEN ELEV.: 99.88 m
					5	SA				10			
3					6	SA				10			38 mm Diameter, 3.05 metres long well screen
				98.05 / 3.66									
		Grey SILTY CLAY			7	SA				10			
4				97.14 / 4.57	8	SA							
		Grey CLAYEY SILT		96.83									BOTTOM OF SCREEN ELEV.: 96.83 m
		End of Borehole		4.88									

GROUNDWATER OBSERVATIONS

DATE	DEPTH (m)	ELEVATION (m)
Jul. 10/19	0.70 ▽	101.01

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Consulting Engineers and Scientists

LOGGED: M.L.
CHECKED: S.P.

ENV - BOREHOLE LOG 6415350_GINT LOGS_V01_23-07-2018 - NEW LIBRARY.GPJ GEMTEC 2018.GDT 17/7/19

RECORD OF BOREHOLE 17-6

CLIENT: Novatech
PROJECT: Kizell Lands - 5918 Hazeldean Road
JOB#: 64153.50
LOCATION: See Borehole Location Plan. Figure 2

SHEET: 1 OF 1
DATUM: Geodetic
BORING DATE: November 23, 2017

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLE DATA: NUMBER	TYPE	RECOVERY (mm)	BLOWS/0.3m	LABORATORY ANALYSES	COMBUSTIBLE VAPOUR CONCENTRATION (ppm)	ODOUR	TPH (mg/kg)	MONITORING WELL INSTALLATION AND NOTES
		Ground Surface		102.36									
0	Vibratory Hammer Casing 125 mm Diameter Casing	Dark brown silty clay with organics material (TOPSOIL)		102.06	1	SA							Bentonite seal to surface
				0.30									
		Brown SILTY CLAY			2	SA			Metals, PHCs, and VOCs	0			
1					3	SA				0			Filter sand
													TOP OF SCREEN ELEV.: 100.84 m
2					4	SA				0			
					5	SA				0			
3				99.31									38 mm Diameter, 3.05 metres long well screen
		Brown SILTY CLAY to CLAYEY SILT		3.05	6	SA				0			
				98.70									
		Grey CLAYEY SILT		3.66	7	SA				0			
4					8	SA				0			
				97.61									BOTTOM OF SCREEN ELEV.: 97.79 m
		End of Borehole		4.75									

GROUNDWATER OBSERVATIONS

DATE	DEPTH (m)	ELEVATION (m)
Jul. 10/19	1.04 ▽	101.32

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CHECKED: S.P.

ENV - BOREHOLE LOG 6415350_GINT LOGS_V01_23-07-2018 - NEW LIBRARY.GPJ GEMTEC 2018.GDT 17/7/19

RECORD OF BOREHOLE 17-7

CLIENT: Novatech
PROJECT: Kizell Lands - 5918 Hazeldean Road
JOB#: 64153.50
LOCATION: See Borehole Location Plan. Figure 2

SHEET: 1 OF 1
DATUM: Geodetic
BORING DATE: November 23, 2017

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	SOIL PROFILE: STRATA PLOT	SOIL PROFILE: ELEV. / DEPTH (m)	SAMPLE DATA: NUMBER	SAMPLE DATA: TYPE	SAMPLE DATA: RECOVERY (mm)	SAMPLE DATA: BLOWS/0.3m	SAMPLE DATA: LABORATORY ANALYSES	COMBUSTIBLE VAPOUR CONCENTRATION (ppm)	ODOUR	TPH (mg/kg)	MONITORING WELL INSTALLATION AND NOTES
	Vibratory Hammer Casing 125 mm Diameter Casing	Ground Surface		103.66									
0		Dark brown silty clay with organics material (TOPSOIL)		103.51									
		Brown silty clay and gravel (TILL)		0.15	1	SA			Metals, PHCs, and VOCs	0			Backfilled with soil cuttings
		End of borheole, auger refusal at inferred bedrock		102.95 0.71									

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Consulting Engineers and Scientists

LOGGED: M.L.
CHECKED: S.P.

ENV - BOREHOLE LOG 6415350_GINT LOGS_V01_23-07-2018 - NEW LIBRARY.GPJ GEMTEC 2018.GDT 17/7/19

RECORD OF BOREHOLE 17-8

CLIENT: Novatech
PROJECT: Kizell Lands - 5918 Hazeldean Road
JOB#: 64153.50
LOCATION: See Borehole Location Plan. Figure 2

SHEET: 1 OF 1
DATUM: Geodetic
BORING DATE: November 23, 2017

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLE DATA: NUMBER	TYPE	RECOVERY (mm)	BLOWS/0.3m	LABORATORY ANALYSES	COMBUSTIBLE VAPOUR CONCENTRATION (ppm)	ODOUR	TPH (mg/kg)	MONITORING WELL INSTALLATION AND NOTES
		Ground Surface		103.16									
0	Vibratory Hammer Casing 125 mm Diameter Casing	Dark brown silty clay with organics material (TOPSOIL)		102.91									
		Brown SILTY CLAY		0.25	1	SA			Metals, PHCs, and VOCs (with Duplicate)				Bentonite seal to surface
1					2	SA							
				101.94									
		Brown SILTY CLAY to CLAYEY SILT		1.22	3	SA				0			Filter sand TOP OF SCREEN ELEV.: 101.64 m
2					4	SA				5			
				100.72									
		Brown to grey silty clay, sand and gravel (GLACIAL TILL)		2.44	5	SA							
3					6	SA							38 mm Diameter, 3.05 metres long well screen
					7	SA				0			
4					8	SA			PHCs, and VOCs (with Duplicate)	180			BOTTOM OF SCREEN ELEV.: 98.59 m
				98.28									
		End of Borehole		4.88									

GROUNDWATER OBSERVATIONS

DATE	DEPTH (m)	ELEVATION (m)
Jul. 10/19	1.34 ▽	101.82

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LOGGED: M.L.
CHECKED: S.P.

ENV - BOREHOLE LOG 6415350_GINT LOGS_V01_23-07-2018 - NEW LIBRARY.GPJ GEMTEC 2018.GDT 17/7/19

RECORD OF BOREHOLE 18-9

CLIENT: Novatech
PROJECT: Kizell Lands - 5918 Hazeldean Road
JOB#: 64153.50
LOCATION: See Borehole Location Plan. Figure 2

SHEET: 1 OF 1
DATUM: Geodetic
BORING DATE: February 9, 2018

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLE DATA: NUMBER	TYPE	RECOVERY (mm)	BLOWS/0.3m	LABORATORY ANALYSES	COMBUSTIBLE VAPOUR CONCENTRATION (ppm)	ODOUR	TPH (mg/kg)	MONITORING WELL INSTALLATION AND NOTES
		Ground Surface		106.04									
0	Trackmount 2" Liners	Dark brown clayey silt with organics material (TOPSOIL)		105.28	1	SA							Filter sand
1		Brown SILTY CLAY to CLAYEY SILT		0.76 104.51	2	SA				0			
				1.53									
2		Brown to grey silty clay, sand and gravel (GLACIAL TILL)											Bentonite seal
				103.60 2.44									
3		Limestone Bedrock			3	SA				5			Filter sand TOP OF SCREEN ELEV.: 102.54 m
4													38 mm Diameter, 1.52 metres long well screen
5		End of Borehole		101.01 5.03									BOTTOM OF SCREEN ELEV.: 101.01 m

GROUNDWATER OBSERVATIONS

DATE	DEPTH (m)	ELEVATION (m)
Jul. 10/19	3.15 ▽	102.89

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LOGGED: N.S.
CHECKED: S.P.

ENV - BOREHOLE LOG 6415350_GINT LOGS_V01_23-07-2018 - NEW LIBRARY.GPJ GEMTEC 2018.GDT 17/7/19

RECORD OF BOREHOLE 18-10D

CLIENT: Novatech
PROJECT: Kizell Lands - 5918 Hazeldean Road
JOB#: 64153.50
LOCATION: See Borehole Location Plan. Figure 2

SHEET: 1 OF 1
DATUM: Geodetic
BORING DATE: July 19, 2018

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLE DATA: NUMBER	TYPE	RECOVERY (mm)	BLOWS/0.3m	LABORATORY ANALYSES	COMBUSTIBLE VAPOUR CONCENTRATION (ppm)	ODOUR	TPH (mg/kg)	MONITORING WELL INSTALLATION AND NOTES
		Ground Surface		105.13									
0	Geoprobe 2" Liners	Dark brown silty sand with topsoil (FILL MATERIAL)		104.37	1	CA				5			
1	Geoprobe 2" Liners	Brown to Gray SILTY CLAY to CLAYEY SILT some gravel		0.76	2	CA				0			
2	Geoprobe 2" Liners				3	CA				0			Holeplug to Surface
	Geoprobe 2" Liners				4	CA				20			
3	Geoprobe 2" Liners				5	CA				800			
	Geoprobe 2" Liners			101.68									
4	Vibratory Hammer Casing 125 mm Diameter Casing	Limestone Bedrock		3.45									Bentonite seal
	Vibratory Hammer Casing 125 mm Diameter Casing												Filter sand
5	Vibratory Hammer Casing 125 mm Diameter Casing												TOP OF SCREEN ELEV.: 100.56 m
	Vibratory Hammer Casing 125 mm Diameter Casing												38 mm Diameter, 1.52 metre long well screen
6	Vibratory Hammer Casing 125 mm Diameter Casing			99.03									BOTTOM OF SCREEN ELEV.: 99.03 m
				6.10									

GROUNDWATER OBSERVATIONS

DATE	DEPTH (m)	ELEVATION (m)
Jul. 10/19	2.37 ▽	102.77

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LOGGED: N.S.
CHECKED: S.P.

ENV - BOREHOLE LOG 6415350_GINT LOGS_V01_23-07-2018 - NEW LIBRARY.GPJ GEMTEC 2018.GDT 17/7/19

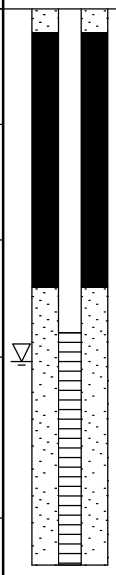
RECORD OF BOREHOLE 18-10S

CLIENT: Novatech
PROJECT: Kizell Lands - 5918 Hazeldean Road
JOB#: 64153.50
LOCATION: See Borehole Location Plan. Figure 2

SHEET: 1 OF 1
DATUM: Geodetic
BORING DATE: February 9, 2018

DEPTH SCALE METRES	BORING METHOD	DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	NUMBER	TYPE	RECOVERY (mm)	BLOWS/0.3m	LABORATORY ANALYSES	COMBUSTIBLE VAPOUR CONCENTRATION (ppm)	ODOUR	TPH (mg/kg)
		Ground Surface		105.03								
0	Trackmount 2" Liners	Dark brown clayey silt with organics material (TOPSOIL)		104.27	1	SA				5		
				0.76								
1		Brown SILTY CLAY to CLAYEY SILT		103.50	2	SA						
				1.53								
2		Brown to grey silty clay, sand and gravel (GLACIAL TILL)			3	SA				0		
					4	SA				5		
3				101.68								
		Limestone Bedrock		3.35								
				101.07								
		End of Borehole		3.96								

MONITORING WELL INSTALLATION AND NOTES



GROUNDWATER OBSERVATIONS

DATE	DEPTH (m)	ELEVATION (m)
Jul. 10/19	2.32 ▽	102.71

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LOGGED: N.S.
CHECKED: S.P.

ENV - BOREHOLE LOG 6415350_GINT LOGS_V01_23-07-2018 - NEW LIBRARY.GPJ GEMTEC 2018.GDT 17/7/19

RECORD OF BOREHOLE 18-11

CLIENT: Novatech
PROJECT: Kizell Lands - 5918 Hazeldean Road
JOB#: 64153.50
LOCATION: See Borehole Location Plan. Figure 2

SHEET: 1 OF 1
DATUM: Geodetic
BORING DATE: July 20, 2018

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLE DATA: NUMBER	TYPE	RECOVERY (mm)	BLOWS/0.3m	LABORATORY ANALYSES	COMBUSTIBLE VAPOUR CONCENTRATION (ppm)	ODOUR	TPH (mg/kg)	MONITORING WELL INSTALLATION AND NOTES
0	Geoprobe 2" Liners	Ground Surface		105.94									
		Brown to Gray SILTY CLAY to CLAYEY SILT some gravel		105.79	1	CA				15			
1		Limestone Bedrock		0.15									Holeplug to Surface; Bentonite seal; Filter sand; TOP OF SCREEN ELEV.: 104.42 m
2	Vibratory Hammer Casing 125 mm Diameter Casing												
3													38 mm Diameter, 3.05 metre long well screen
4				101.37 4.57									BOTTOM OF SCREEN ELEV.: 101.37 m

GROUNDWATER OBSERVATIONS

DATE	DEPTH (m)	ELEVATION (m)
Jul. 10/19	1.63 ▽	104.31

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LOGGED: N.S.
CHECKED: S.P.

ENV - BOREHOLE LOG 6415350_GINT LOGS_V01_23-07-2018 - NEW LIBRARY.GPJ GEMTEC 2018.GDT 17/7/19

RECORD OF BOREHOLE 18-12

CLIENT: Novatech
PROJECT: Kizell Lands - 5918 Hazeldean Road
JOB#: 64153.50
LOCATION: See Borehole Location Plan. Figure 2

SHEET: 1 OF 1
DATUM: Geodetic
BORING DATE: July 20, 2018

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLE DATA: NUMBER	TYPE	RECOVERY (mm)	BLOWS/0.3m	LABORATORY ANALYSES	COMBUSTIBLE VAPOUR CONCENTRATION (ppm)	ODOUR	TPH (mg/kg)	MONITORING WELL INSTALLATION AND NOTES
		Ground Surface		103.97									
0	Geoprobe 2" Liners	Brown to Gray SILTY CLAY to CLAYEY SILT some gravel		103.21	1	CA				10			Holeplug to Surface
1	Vibratory Hammer Casing 125 mm Diameter Casing	Limestone Bedrock		0.76									Bentonite seal Filter sand TOP OF SCREEN ELEV.: 102.45 m
2													
3													38 mm Diameter, 3.05 metre long well screen
4				99.40 4.57									BOTTOM OF SCREEN ELEV.: 99.40 m

GROUNDWATER OBSERVATIONS

DATE	DEPTH (m)	ELEVATION (m)
Jul. 10/19	1.35 ▽	102.62

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LOGGED: N.S.
CHECKED: S.P.

ENV - BOREHOLE LOG 6415350_GINT LOGS_V01_23-07-2018 - NEW LIBRARY.GPJ GEMTEC 2018.GDT 17/7/19

RECORD OF BOREHOLE 18-13

CLIENT: Novatech
PROJECT: Kizell Lands - 5918 Hazeldean Road
JOB#: 64153.50
LOCATION: See Borehole Location Plan. Figure 2

SHEET: 1 OF 1
DATUM: Geodetic
BORING DATE: July 20, 2018

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLE DATA: NUMBER	TYPE	RECOVERY (mm)	BLOWS/0.3m	LABORATORY ANALYSES	COMBUSTIBLE VAPOUR CONCENTRATION (ppm)	ODOUR	TPH (mg/kg)	MONITORING WELL INSTALLATION AND NOTES
0		Ground Surface		106.40									
0	Geoprobe 2" Liners	Brown to Gray SILTY CLAY to CLAYEY SILT some gravel		105.79	1	CA				0			
1	Vibratory Hammer Casing 125 mm Diameter Casing	Boulders		0.61 / 104.88									
2		Soil - exact statigraphy unknown		1.52 / 102.74									Holeplug to Surface
3													Bentonite seal
4		Limestone Bedrock		3.66 / 100.30									Filter sand TOP OF SCREEN ELEV.: 101.83 m
5													38 mm Diameter, 1.52 metre long well screen
6				6.10									BOTTOM OF SCREEN ELEV.: 100.30 m

GROUNDWATER OBSERVATIONS

DATE	DEPTH (m)	ELEVATION (m)
Jul. 10/19	5.17 ▽	101.23

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LOGGED: N.S.
CHECKED: S.P.

ENV - BOREHOLE LOG 6415350_GINT LOGS_V01_23-07-2018 - NEW LIBRARY.GPJ GEMTEC 2018.GDT 17/7/19

APPENDIX B

Soil Results -Table B1

TABLE B1
SOIL ANALYTICAL RESULTS

Parameter	Units	RDL	MOECC Table 1*	MOECC Table 3**	MOECC Table 7***	Sample Location:	Kizell Lands												
						Sample ID:	BH17-1 SA-2	BH17-2 SA-1	BH17-3 SA-2	BH17-4 SA-2	BH17-5 SA-1	BH17-6 SA-2	BH17-7 SA-1	BH17-8 SA-1	BH17-108 SA-1	BH17-8 SA-8	BH17-108 SA-8	BH18-9 SA-2	BH18-10 SA-1	BH18-10 SA-4
						Laboratory Sample ID:	17T291975	17T291975	17T291975	17T291975	17T291975	17T291975	17T291975	17T291975	17T291975	17T291975	17T291975	18Z312176	18Z312176	18Z312176
						Date Sampled:	2017-11-24	2017-11-24	2017-11-24	2017-11-24	2017-11-24	2017-11-23	2017-11-23	2017-11-23	2017-11-23	2017-11-23	2017-11-23	2018-02-09	2018-02-09	2018-02-09
Metals and Inorganics																			
Antimony	µg/g	0.8	1.3	7.5	7.5		<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	N/A	N/A	<0.8	<0.8	<0.8
Arsenic	µg/g	1	18	18	18		4	3	3	4	3	2	1	2	2	N/A	N/A	1	1	<1
Barium	µg/g	2	220	390	390		212	175	149	132	103	381	49	**582**	**592**	N/A	N/A	86	52	68
Beryllium	µg/g	0.5	2.5	4	4		0.7	0.5	<0.5	0.5	<0.5	0.7	<0.5	0.9	0.8	N/A	N/A	<0.5	<0.5	<0.5
Boron	µg/g	5	36	120	120		7	7	6	5	6	6	<5	5	6	N/A	N/A	<5	<5	<5
Boron (Hot Water Soluble)	µg/g	0.1	NA	1.5	1.5		0.33	0.2	0.26	<0.10	1.01	<0.10	<0.10	<0.10	0.14	N/A	N/A	<0.10	<0.10	<0.10
Cadmium	µg/g	0.5	1.2	1.2	1.2		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	N/A	N/A	<0.5	<0.5	<0.5
Chromium	µg/g	2	70	160	160		46	41	35	34	30	78	17	75	78	N/A	N/A	14	12	14
Cobalt	µg/g	0.5	21	22	22		13.7	11.6	11	9.6	7.8	20.9	6.4	18.5	18.8	N/A	N/A	6	5.5	5.3
Copper	µg/g	1	92	140	140		24	21	18	17	17	38	11	32	31	N/A	N/A	13	10	13
Lead	µg/g	1	120	120	120		9	7	6	6	6	7	4	8	8	N/A	N/A	3	4	3
Molybdenum	µg/g	0.5	2	6.9	6.9		<0.5	<0.5	<0.5	<0.5	0.9	<0.5	<0.5	<0.5	<0.5	N/A	N/A	<0.5	<0.5	1.2
Nickel	µg/g	1	82	100	100		28	25	22	20	17	44	11	42	42	N/A	N/A	11	9	9
Selenium	µg/g	0.4	1.5	2.4	2.4		0.7	<0.4	0.4	0.5	0.7	<0.4	0.4	0.6	0.6	N/A	N/A	<0.4	<0.4	<0.4
Silver	µg/g	0.2	0.5	20	20		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	N/A	N/A	<0.2	<0.2	<0.2
Thallium	µg/g	0.4	1	1	1		<0.4	<0.4	<0.4	<0.4	<0.4	0.4	<0.4	<0.4	<0.4	N/A	N/A	<0.4	<0.4	<0.4
Uranium	µg/g	0.5	2.5	23	23		0.6	0.5	0.5	0.5	0.7	0.6	<0.5	0.9	0.9	N/A	N/A	<0.5	0.5	<0.5
Vanadium	µg/g	1	86	86	86		64	56	56	58	54	**95**	29	86	**88**	N/A	N/A	20	20	19
Zinc	µg/g	5	290	340	340		77	67	61	55	66	125	24	116	115	N/A	N/A	22	23	22
Chromium VI	µg/g	0.2	0.66	8	8		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	N/A	N/A	<0.2	<0.2	<0.2
Cyanide	µg/g	0.04	0.051	0.051	0.051		<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	N/A	N/A	<0.040	<0.040	<0.040
Mercury	µg/g	0.1	0.27	0.27	0.27		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	N/A	N/A	<0.10	<0.10	<0.10
Electrical Conductivity	mS/cm	0.005	0.57	0.7	0.7		0.133	0.112	0.175	0.067	0.203	0.102	0.035	0.129	0.198	N/A	N/A	0.101	0.134	0.124
Sodium Adsorption Ratio	NA	NA	2.4	5	5		0.584	0.485	0.168	0.383	0.159	1.01	0.099	0.952	1.83	N/A	N/A	0.078	0.044	0.308
pH, 2:1 CaCl2 Extraction	pH Units	NA	NS	NS	NS		6.68	7.08	7.01	6.4	6.95	6.78	4.72	6.78	6.86	N/A	N/A	7.6	7.26	7.92
Pesticides																			
Hexachloroethane	µg/g	0.01	0.01	0.089	0.089		<0.01	<0.01	<0.01	<0.01	<0.01	N/A	N/A	N/A	N/A	N/A	N/A	<0.01	<0.01	N/A
Gamma-Hexachlorocyclohexane	µg/g	0.005	0.01	0.056	0.056		<0.005	<0.005	<0.005	<0.005	<0.005	N/A	N/A	N/A	N/A	N/A	N/A	<0.005	<0.005	N/A
Heptachlor	µg/g	0.005	0.05	0.15	0.15		<0.005	<0.005	<0.005	<0.005	<0.005	N/A	N/A	N/A	N/A	N/A	N/A	<0.005	<0.005	N/A
Aldrin	µg/g	0.005	0.05	0.05	0.05		<0.005	<0.005	<0.005	<0.005	<0.005	N/A	N/A	N/A	N/A	N/A	N/A	<0.005	<0.005	N/A
Heptachlor Epoxide	µg/g	0.005	0.05	0.05	0.05		<0.005	<0.005	<0.005	<0.005	<0.005	N/A	N/A	N/A	N/A	N/A	N/A	<0.005	<0.005	N/A
Endosulfan	µg/g	0.005	0.04	0.04	0.04		<0.005	<0.005	<0.005	<0.005	<0.005	N/A	N/A	N/A	N/A	N/A	N/A	<0.005	<0.005	N/A
Chlordane	µg/g	0.007	0.05	0.05	0.05		<0.007	<0.007	<0.007	<0.007	<0.007	N/A	N/A	N/A	N/A	N/A	N/A	<0.007	<0.007	N/A
DDE	µg/g	0.007	0.05	0.26	0.26		<0.007	<0.007	<0.007	<0.007	<0.007	N/A	N/A	N/A	N/A	N/A	N/A	<0.007	<0.007	N/A
DDD	µg/g	0.007	0.05	3.3	3.3		<0.007	<0.007	<0.007	<0.007	<0.007	N/A	N/A	N/A	N/A	N/A	N/A	<0.007	<0.007	N/A
DDT	µg/g	0.007	1.4	1.4	1.4		<0.007	<0.007	<0.007	<0.007	<0.007	N/A	N/A	N/A	N/A	N/A	N/A	<0.007	<0.007	N/A
Dieldrin	µg/g	0.005	0.05	0.05	0.05		<0.005	<0.005	<0.005	<0.005	<0.005	N/A	N/A	N/A	N/A	N/A	N/A	<0.005	<0.005	N/A
Endrin	µg/g	0.005	0.04	0.04	0.04		<0.005	<0.005	<0.005	<0.005	<0.005	N/A	N/A	N/A	N/A	N/A	N/A	<0.005	<0.005	N/A
Methoxychlor	µg/g	0.005	0.05	0.13	0.13		<0.005	<0.005	<0.005	<0.005	<0.005	N/A	N/A	N/A	N/A	N/A	N/A	<0.005	<0.005	N/A
Hexachlorobenzene	µg/g	0.005	0.01	0.52	0.52		<0.005	<0.005	<0.005	<0.005	<0.005	N/A	N/A	N/A	N/A	N/A	N/A	<0.005	<0.005	N/A
Hexachlorobutadiene	µg/g	0.01	0.01	0.012	0.012		<0.01	<0.01	<0.01	<0.01	<0.01	N/A	N/A	N/A	N/A	N/A	N/A	<0.01	<0.01	N/A
TCMX	%	N/A	NS	NS	NS		80	80	78	80	82	N/A	N/A	N/A	N/A	N/A	N/A	78	84	N/A
Decachlorobiphenyl	%	N/A	NS	NS	NS		90	88	98	92	92	N/A	N/A	N/A	N/A	N/A	N/A	92	92	N/A

TABLE B1
SOIL ANALYTICAL RESULTS
CONTINUED

						Sample Location:													
						Sample ID:	BH17-1 SA-2	BH17-2 SA-1	BH17-3 SA-2	BH17-4 SA-2	BH17-5 SA-1	BH17-6 SA-2	BH17-7 SA-1	BH17-8 SA-1	BH17-108 SA-1	BH17-8 SA-8	BH17-108 SA-8	BH18-9 SA-2	BH18-10 SA-1	BH18-10 SA-4
						Laboratory Sample ID:	17T291975	17T291975	17T291975	17T291975	17T291975	17T291975	17T291975	17T291975	17T291975	17T291975	17T291975	18Z312176	18Z312176	18Z312176
						Date Sampled:	2017-11-24	2017-11-24	2017-11-24	2017-11-24	2017-11-24	2017-11-23	2017-11-23	2017-11-23	2017-11-23	2017-11-23	2017-11-23	2018-02-09	2018-02-09	2018-02-09
Parameter	**Units**	**RDL**	**MOECC Table 1***	**MOECC Table 3****	**MOECC Table 7*****														
Polycyclic Aromatic Hydrocarbons																			
Naphthalene	µg/g	0.05	0.09	0.6	0.6	<0.05	<0.05	<0.05	<0.05	<0.05	N/A	N/A	N/A	N/A	N/A	N/A	<0.05	<0.05	N/A
Acenaphthylene	µg/g	0.05	0.093	0.15	0.15	<0.05	<0.05	<0.05	<0.05	<0.05	N/A	N/A	N/A	N/A	N/A	N/A	<0.05	<0.05	N/A
Acenaphthene	µg/g	0.05	0.072	7.9	7.9	<0.05	<0.05	<0.05	<0.05	<0.05	N/A	N/A	N/A	N/A	N/A	N/A	<0.05	<0.05	N/A
Fluorene	µg/g	0.05	0.12	62	62	<0.05	<0.05	<0.05	<0.05	<0.05	N/A	N/A	N/A	N/A	N/A	N/A	<0.05	<0.05	N/A
Phenanthrene	µg/g	0.05	0.69	6.2	6.2	<0.05	<0.05	<0.05	<0.05	<0.05	N/A	N/A	N/A	N/A	N/A	N/A	<0.05	<0.05	N/A
Anthracene	µg/g	0.05	0.16	0.67	0.67	<0.05	<0.05	<0.05	<0.05	<0.05	N/A	N/A	N/A	N/A	N/A	N/A	<0.05	<0.05	N/A
Fluoranthene	µg/g	0.05	0.56	0.69	0.69	<0.05	<0.05	<0.05	<0.05	<0.05	N/A	N/A	N/A	N/A	N/A	N/A	<0.05	<0.05	N/A
Pyrene	µg/g	0.05	1	78	78	<0.05	<0.05	<0.05	<0.05	<0.05	N/A	N/A	N/A	N/A	N/A	N/A	<0.05	<0.05	N/A
Benz(a)anthracene	µg/g	0.05	0.36	0.5	0.5	<0.05	<0.05	<0.05	<0.05	<0.05	N/A	N/A	N/A	N/A	N/A	N/A	<0.05	<0.05	N/A
Chrysene	µg/g	0.05	2.8	7	7	<0.05	<0.05	<0.05	<0.05	<0.05	N/A	N/A	N/A	N/A	N/A	N/A	<0.05	<0.05	N/A
Benzo(b)fluoranthene	µg/g	0.05	0.47	0.78	0.78	<0.05	<0.05	<0.05	<0.05	<0.05	N/A	N/A	N/A	N/A	N/A	N/A	<0.05	<0.05	N/A
Benzo(k)fluoranthene	µg/g	0.05	0.48	0.78	0.78	<0.05	<0.05	<0.05	<0.05	<0.05	N/A	N/A	N/A	N/A	N/A	N/A	<0.05	<0.05	N/A
Benzo(a)pyrene	µg/g	0.05	0.3	0.3	0.3	<0.05	<0.05	<0.05	<0.05	<0.05	N/A	N/A	N/A	N/A	N/A	N/A	<0.05	<0.05	N/A
Indeno(1,2,3-cd)pyrene	µg/g	0.05	0.23	0.38	0.38	<0.05	<0.05	<0.05	<0.05	<0.05	N/A	N/A	N/A	N/A	N/A	N/A	<0.05	<0.05	N/A
Dibenz(a,h)anthracene	µg/g	0.05	0.1	0.1	0.1	<0.05	<0.05	<0.05	<0.05	<0.05	N/A	N/A	N/A	N/A	N/A	N/A	<0.05	<0.05	N/A
Benzo(g,h,i)perylene	µg/g	0.05	0.68	6.6	6.6	<0.05	<0.05	<0.05	<0.05	<0.05	N/A	N/A	N/A	N/A	N/A	N/A	<0.05	<0.05	N/A
2-and 1-methyl Naphthalene	µg/g	0.05	0.59	0.99	0.99	<0.05	<0.05	<0.05	<0.05	<0.05	N/A	N/A	N/A	N/A	N/A	N/A	<0.05	<0.05	N/A
Moisture Content	%	0.1	NS	NS	NS	19.8	26.1	24.1	24.1	18.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chrysene-d12	%	N/A	NS	NS	NS	122	129	133	118	112	N/A	N/A	N/A	N/A	N/A	N/A	104	111	N/A
Petroleum Hydrocarbons																			
Benzene	µg/g	0.02	0.02	0.21	0.21	<0.02	<0.02	<0.02	<0.02	<0.02	N/A	N/A	N/A	N/A	N/A	N/A	<0.02	<0.02	N/A
Toluene	µg/g	0.08	0.2	2.3	2.3	<0.08	<0.08	<0.08	<0.08	<0.08	N/A	N/A	N/A	N/A	N/A	N/A	<0.08	<0.08	N/A
Ethylbenzene	µg/g	0.05	0.05	2	2	<0.05	<0.05	<0.05	<0.05	<0.05	N/A	N/A	N/A	N/A	N/A	N/A	<0.05	<0.05	N/A
Xylene Mixture	µg/g	0.05	0.05	3.1	3.1	<0.05	<0.05	<0.05	<0.05	<0.05	N/A	N/A	N/A	N/A	N/A	N/A	<0.05	<0.05	N/A
F1 (C6 to C10)	µg/g	5	25	55	NS	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	5	25	55	55	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
F2 (C10 to C16)	µg/g	10	10	98	98	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
F2 (C10 to C16) minus Naphthalene	µg/g	10	NS	NS	NS	<10	<10	<10	<10	<10	N/A	N/A	N/A	N/A	N/A	N/A	<10	<10	N/A
F3 (C16 to C34)	µg/g	50	240	300	300	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
F3 (C16 to C34) minus PAHs	µg/g	50	NS	NS	NS	<50	<50	<50	<50	<50	N/A	N/A	N/A	N/A	N/A	N/A	<50	<50	N/A
F4 (C34 to C50)	µg/g	50	120	2800	2800	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g	50	120	2800	2800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Moisture Content	%	0.1	NS	NS	NS	19.8	26.1	24.1	24.1	18.7	28.3	18.4	30.3	30.6	9.1	8.8	9.9	11	9.5
Terphenyl	%	N/A	NS	NS	NS	89	102	105	105	87	98	107	91	115	87	89	64	96	67
Volatile Organic Compounds																			
Dichlorodifluoromethane	µg/g	0.05	0.05	16	16	N/A	N/A	N/A	N/A	N/A	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	N/A	N/A	<0.05
Vinyl Chloride	ug/g	0.02	0.02	0.02	0.02	N/A	N/A	N/A	N/A	N/A	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	N/A	N/A	<0.02
Bromomethane	ug/g	0.05	0.05	0.05	0.05	N/A	N/A	N/A	N/A	N/A	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	N/A	N/A	<0.05
Trichlorofluoromethane	ug/g	0.05	0.25	4	4	N/A	N/A	N/A	N/A	N/A	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	N/A	N/A	<0.05
Acetone	ug/g	0.5	0.5	16	16	N/A	N/A	N/A	N/A	N/A	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	N/A	N/A	<0.50
1,1-Dichloroethylene	ug/g	0.05	0.05	0.05	0.05	N/A	N/A	N/A	N/A	N/A	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	N/A	N/A	<0.05
Methylene Chloride	ug/g	0.05	0.05	0.1	0.1	N/A	N/A	N/A	N/A	N/A	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	N/A	N/A	<0.05
Trans- 1,2-Dichloroethylene	ug/g	0.05	0.05	0.084	0.084	N/A	N/A	N/A	N/A	N/A	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	N/A	N/A	<0.05
Methyl tert-butyl Ether	ug/g	0.05	0.05	0.75	0.75	N/A	N/A	N/A	N/A	N/A	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	N/A	N/A	<0.05

TABLE B1
SOIL ANALYTICAL RESULTS
CONTINUED

Parameter	Units	RDL	MOECC Table 1*	MOECC Table 3**	MOECC Table 7***	Sample Location:	Kizell Lands												
						Sample ID:	BH17-1 SA-2	BH17-2 SA-1	BH17-3 SA-2	BH17-4 SA-2	BH17-5 SA-1	BH17-6 SA-2	BH17-7 SA-1	BH17-8 SA-1	BH17-108 SA-1	BH17-8 SA-8	BH17-108 SA-8	BH18-9 SA-2	BH18-10 SA-1	BH18-10 SA-4
						Laboratory Sample ID:	17T291975	17T291975	17T291975	17T291975	17T291975	17T291975	17T291975	17T291975	17T291975	17T291975	17T291975	18Z312176	18Z312176	18Z312176
						Date Sampled:	2017-11-24	2017-11-24	2017-11-24	2017-11-24	2017-11-24	2017-11-23	2017-11-23	2017-11-23	2017-11-23	2017-11-23	2017-11-23	2018-02-09	2018-02-09	2018-02-09
1,1-Dichloroethane	ug/g	0.02	0.05	3.5	3.5		N/A	N/A	N/A	N/A	N/A	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	N/A	N/A	<0.02
Methyl Ethyl Ketone	ug/g	0.5	0.5	16	16		N/A	N/A	N/A	N/A	N/A	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	N/A	N/A	<0.50
Cis- 1,2-Dichloroethylene	ug/g	0.02	0.05	3.4	3.4		N/A	N/A	N/A	N/A	N/A	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	N/A	N/A	<0.02
Chloroform	ug/g	0.04	0.05	0.05	0.05		N/A	N/A	N/A	N/A	N/A	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	N/A	N/A	<0.04
1,2-Dichloroethane	ug/g	0.03	0.05	0.05	0.05		N/A	N/A	N/A	N/A	N/A	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	N/A	N/A	<0.03
1,1,1-Trichloroethane	ug/g	0.05	0.05	0.38	0.38		N/A	N/A	N/A	N/A	N/A	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	N/A	N/A	<0.05
Carbon Tetrachloride	ug/g	0.05	0.05	0.05	0.05		N/A	N/A	N/A	N/A	N/A	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	N/A	N/A	<0.05
Benzene	ug/g	0.02	0.02	0.21	0.21		N/A	N/A	N/A	N/A	N/A	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	N/A	N/A	<0.02
1,2-Dichloropropane	ug/g	0.03	0.05	0.05	0.05		N/A	N/A	N/A	N/A	N/A	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	N/A	N/A	<0.03
Trichloroethylene	ug/g	0.03	0.05	0.061	0.061		N/A	N/A	N/A	N/A	N/A	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	N/A	N/A	<0.03
Bromodichloromethane	ug/g	0.05	0.05	13	13		N/A	N/A	N/A	N/A	N/A	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	N/A	N/A	<0.05
Methyl Isobutyl Ketone	ug/g	0.5	0.5	1.7	1.7		N/A	N/A	N/A	N/A	N/A	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	N/A	N/A	<0.50
1,1,2-Trichloroethane	ug/g	0.04	0.05	0.05	0.05		N/A	N/A	N/A	N/A	N/A	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	N/A	N/A	<0.04
Toluene	ug/g	0.02	0.2	2.3	2.3		N/A	N/A	N/A	N/A	N/A	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	N/A	N/A	<0.02
Dibromochloromethane	ug/g	0.05	0.05	9.4	9.4		N/A	N/A	N/A	N/A	N/A	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	N/A	N/A	<0.05
Ethylene Dibromide	ug/g	0.04	0.05	0.05	0.05		N/A	N/A	N/A	N/A	N/A	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	N/A	N/A	<0.04
Tetrachloroethylene	ug/g	0.05	0.05	0.28	0.28		N/A	N/A	N/A	N/A	N/A	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	N/A	N/A	<0.05
1,1,1,2-Tetrachloroethane	ug/g	0.04	0.05	0.058	0.058		N/A	N/A	N/A	N/A	N/A	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	N/A	N/A	<0.04
Chlorobenzene	ug/g	0.05	0.05	2.4	2.4		N/A	N/A	N/A	N/A	N/A	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	N/A	N/A	<0.05
Ethylbenzene	ug/g	0.05	0.05	2	2		N/A	N/A	N/A	N/A	N/A	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	N/A	N/A	<0.05
m & p-Xylene	ug/g	0.05	NS	NS	NS		N/A	N/A	N/A	N/A	N/A	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	N/A	N/A	<0.05
Bromoform	ug/g	0.05	0.05	0.27	0.27		N/A	N/A	N/A	N/A	N/A	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	N/A	N/A	<0.05
Styrene	ug/g	0.05	0.05	0.7	0.7		N/A	N/A	N/A	N/A	N/A	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	N/A	N/A	<0.05
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	0.05	0.05		N/A	N/A	N/A	N/A	N/A	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	N/A	N/A	<0.05
o-Xylene	ug/g	0.05	NS	NS	NS		N/A	N/A	N/A	N/A	N/A	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	N/A	N/A	<0.05
1,3-Dichlorobenzene	ug/g	0.05	0.05	4.8	4.8		N/A	N/A	N/A	N/A	N/A	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	N/A	N/A	<0.05
1,4-Dichlorobenzene	ug/g	0.05	0.05	0.083	0.083		N/A	N/A	N/A	N/A	N/A	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	N/A	N/A	<0.05
1,2-Dichlorobenzene	ug/g	0.05	0.05	3.4	3.4		N/A	N/A	N/A	N/A	N/A	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	N/A	N/A	<0.05
Xylene Mixture	ug/g	0.05	0.05	3.1	3.1		N/A	N/A	N/A	N/A	N/A	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	N/A	N/A	<0.05
1,3-Dichloropropene	µg/g	0.04	0.05	0.05	0.05		N/A	N/A	N/A	N/A	N/A	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	N/A	N/A	<0.04
n-Hexane	µg/g	0.05	0.05	2.8	2.8		N/A	N/A	N/A	N/A	N/A	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	N/A	N/A	<0.05
Toluene-d8	% Recovery	N/A	NS	NS	NS		N/A	N/A	N/A	N/A	N/A	93	91	96	94	93	96	N/A	N/A	96
4-Bromofluorobenzene	% Recovery	N/A	NS	NS	NS		N/A	N/A	N/A	N/A	N/A	82	78	77	76	76	81	N/A	N/A	79

Notes:

1 RDL - Reported Detection Limit
2 N/A - Not Applicable
3 NS - No Standard
4 ND- Non-detect
5 * - Table 1: Full Depth Background Site Condition Standards (MOECC, April 15, 2011)
6 ** - Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Groundwater Condition (MOECC, April 15, 2011)
7 *** - Table 7: Generic Site Condition Standards for Shallow Soils in a Non-Potable Groundwater Condition (MOECC, April 15, 2011)
8 Underlined - Exceeds MOECC Table 1 SCS
9 **Bold** - Exceeds MOECC Table 3 SCS
10 *Italicized* - Exceeds MOECC Table 7 SCS

APPENDIX C

Groundwater Results – Table C1

TABLE C1
GROUNDWATER ANALYTICAL RESULTS

Parameter	Units	RDL	MOECC Table 3*	MOECC Table 7**	City of Ottawa Sanitary Sewer Geuidelines***	City of Ottawa Storm Sewer Guidelines****	Sample Location:	BH 17-3					MW 18-9								
							Sample ID:	BH17-3	BH17-103	BH17-5	BH17-6	BH17-8	BH18-9	MW18-9 SA2	MW18-109 SA2	MW18-9	MW18-9 GS2	BH18-9 GW1	BH18-9 GW101	BH18-9 GW2	BH18-9 GW102
							Date Sampled:	2017-12-19	2017-12-19	2017-12-19	2017-12-19	2017-12-19	2018-02-15	2018-05-11	2018-05-11	2018-07-26	2018-08-10	2018-12-06	2018-12-06	2019-03-01	2019-03-01
Metals																					
Antimony	µg/L	1	20000	16000	NS	NS		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Arsenic	µg/L	1	1900	1500	NS	NS		1	1.1	<1.0	1.2	2.5	<1.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Barium	µg/L	2	29000	23000	NS	NS		123	120	97.7	91.5	108	52.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Beryllium	µg/L	0.5	67	53	NS	NS		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Boron	µg/L	10	45000	36000	NS	NS		44	45.5	31	18.4	21.4	21.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Cadmium	µg/L	0.2	2.7	2.1	NS	NS		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chromium	µg/L	2	810	640	NS	NS		5.5	8.8	4.5	5.3	6.7	<2.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Cobalt	µg/L	0.5	66	52	NS	NS		1	1	<0.5	<0.5	2.6	0.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Copper	µg/L	1	87	69	NS	NS		1.7	1.7	2.1	1.5	<1.0	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Lead	µg/L	0.5	25	20	NS	NS		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Molybdenum	µg/L	0.5	9200	7300	NS	NS		1	0.9	2.8	1.9	6.2	1.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nickel	µg/L	1	490	390	NS	NS		2.5	3.2	1.9	<1.0	2.1	3.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Selenium	µg/L	1	63	50	NS	NS		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Silver	µg/L	0.2	1.5	1.2	NS	NS		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Thallium	µg/L	0.3	510	400	NS	NS		<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Uranium	µg/L	0.5	420	330	NS	NS		0.6	0.6	4.3	0.7	1.5	<0.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vanadium	µg/L	0.4	250	200	NS	NS		1.9	2.9	0.8	2.1	3.4	0.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Zinc	µg/L	5	1100	890	NS	NS		<5.0	<5.0	7.2	<5.0	<5.0	<5.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Mercury	µg/L	0.02	0.29	0.1	NS	NS		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chromium VI	µg/L	5	140	110	NS	NS		<5	<5	<5	<5	<5	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
OC Pesticides																					
Gamma-Hexachlorocyclohexane	µg/L	0.01	1.2	0.95	NS	NS		<0.01	N/A	<0.01	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Heptachlor	µg/L	0.01	2.5	0.038	NS	NS		<0.01	N/A	<0.01	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Aldrin	µg/L	0.01	8.5	3	NS	NS		<0.01	N/A	<0.01	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Heptachlor Epoxide	µg/L	0.01	0.048	0.038	NS	NS		<0.01	N/A	<0.01	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Endosulfan	µg/L	0.05	1.5	0.56	NS	NS		<0.05	N/A	<0.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chlordane	µg/L	0.04	28	0.06	NS	NS		<0.04	N/A	<0.04	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DDE	µg/L	0.01	20	17	NS	NS		<0.01	N/A	<0.01	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DDD	µg/L	0.05	45	1.8	NS	NS		<0.05	N/A	<0.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DDT	µg/L	0.04	2.8	0.05	NS	NS		<0.04	N/A	<0.04	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dieldrin	µg/L	0.02	0.75	0.56	NS	NS		<0.02	N/A	<0.02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Endrin	µg/L	0.05	0.48	0.36	NS	NS		<0.05	N/A	<0.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Methoxychlor	µg/L	0.04	6.5	0.3	NS	NS		<0.04	N/A	<0.04	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Hexachlorobenzene	ug/L	0.01	3.1	3.1	NS	NS		<0.01	N/A	<0.01	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Hexachlorobutadiene	ug/L	0.01	0.44	0.012	NS	NS		<0.01	N/A	<0.01	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Hexachloroethane	ug/L	0.01	94	0.17	NS	NS		<0.01	N/A	<0.01	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TCMX	%	N/A	NS	NS	NS	NS		65	N/A	67	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Decachlorobiphenyl	%	N/A	NS	NS	NS	NS		70	N/A	74	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Polycyclic Aromatic Hydrocarbon																					
Naphthalene	µg/L	0.2	1400	7	59	6.4		<0.20	N/A	<0.20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acenaphthylene	µg/L	0.2	1.8	1	NS	NS		<0.20	N/A	<0.20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acenaphthene	µg/L	0.2	600	17	NS	NS		<0.20	N/A	<0.20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Fluorene	µg/L	0.2	400	290	59	NS		<0.20	N/A	<0.20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Phenanthrene	µg/L	0.1	580	380	NS	NS		<0.10	N/A	<0.10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Anthracene	µg/L	0.1	2.4	1	NS	NS		<0.10	N/A	<0.10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Fluoranthene	µg/L	0.2	130	44	NS	NS		<0.20	N/A	<0.20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pyrene	µg/L	0.2	68	5.7	NS	NS		<0.20	N/A	<0.20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benz(a)anthracene	µg/L	0.2	4.7	1.8	NS	NS		<0.20	N/A	<0.20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chrysene	µg/L	0.1	1	0.7	NS	NS		<0.10	N/A	<0.10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzo(b)fluoranthene	µg/L	0.1	0.75	0.75	NS	NS		<0.10	N/A	<0.10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzo(k)fluoranthene	µg/L	0.1	0.4	0.4	NS	NS		<0.10	N/A	<0.10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzo(a)pyrene	µg/L	0.01	0.81	0.81	NS	NS		<0.01	N/A	<0.01	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Indeno(1,2,3-cd)pyrene	µg/L	0.2	0.2	0.2	NS	NS		<0.20	N/A	<0.20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dibenz(a,h)anthracene	µg/L	0.2	0.52	0.4	NS	NS		<0.20	N/A	<0.20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzo(g,h,i)perylene	µg/L	0.2	0.2	0.2	NS	NS		<0.20	N/A	<0.20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2-and 1-methyl Naphthalene	µg/L	0.2	1800	1500	NS	NS		<0.20	N/A	<0.20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chrysene-d12	%	N/A	NS	NS	NS	NS		90	N/A	95	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Petroleum Hydrocarbons																					
Benzene	µg/L	0.2	44	0.5	10	2		<0.20	<0.20	<0.20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Toluene	µg/L	0.2	18000	320	80	2		<0.20	<0.20	<0.20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Ethylbenzene	µg/L	0.1	2300	54	57	2		<0.10	<0.10	<0.10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Xylene Mixture	µg/L	0.2	4200	72	320	4.4		<0.20	<0.20	<0.20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
F1 (C6 to C10)	µg/L	25	750	NS	NS	NS		<25	<25	<25	<25	<25	<25	<25	N/A	N/A	N/A	N/A	N/A	N/A	N/A
F1 (C6 to C10) minus BTEX	µg/L	25	750	420	NS	NS		<25	<25	<25	<25	<25	<25	<25	N/A	N/A	N/A	N/A	N/A	N/A	N/A
F2 (C10 to C16)	µg/L	100	150	150	NS	NS		<100	<100	<100	<100	<100	<100	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
F2 (C10 to C16) minus Naphthalene	µg/L	100	NS	NS	NS	NS		<100	N/A	<100	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
F3 (C16 to C34)	µg/L	100	500	500	NS	NS		<100	<100	<100	<100	<100	<100	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
F3 (C16 to C34) minus PAHs	µg/L	100	NS	NS	NS	NS		<100	N/A	<100	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
F4 (C34 to C50)	µg/L	100	500	500	NS	NS		<100	<100	<100	<100	<100	<100	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Gravimetric Heavy Hydrocarbons	µg/L	500	500	500	NS	NS		NA	N/A	NA	N/A	N/A	NA	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Terphenyl	%	N/A	NS	NS	NS	NS		83	81	79	N/A	N/A	106	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Volatile Organic Compounds																					
Dichlorodifluoromethane	µg/L	0.2	4400	3500	NS	NS		N/A	N/A	N/A	<0.20	5.6	<0.20	<0.20	<0.20	<0.20	<0.20	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Vinyl Chloride	µg/L	0.17	0.5	0.5	400	NS		N/A	N/A	N/A	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromomethane	µg/L	0.2	5.6	0.89	110	NS		N/A	N/A	N/A	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Trichlorofluoromethane	µg/L	0.4	2500	2000	20	NS		N/A	N/A	N/A	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Acetone	µg/L	1	130000	100000	NS	NS		N/A	N/A	N/A	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
1,1-Dichloroethylene	µg/L	0.3	1.6	0.5	40	NS		N/A	N/A	N/A	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Methylene Chloride	µg/L	0.3	610	26	211	5.2		N/A	N/A	N/A	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
trans- 1,2-Dichloroethylene	µg/L	0.2	1.6	1.6	200	NS		N/A	N/A	N/A	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Methyl tert-butyl ether	µg/L	0.2	190	15	NS	NS		N/A	N/A	N/A	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
1,1-Dichloroethane	µg/L	0.3	320	11	200	NS		N/A	N/A	N/A	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Methyl Ethyl Ketone	µg/L	1	470000	21000	NS	NS		N/A	N/A	N/A	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
cis- 1,2-Dichloroethylene	µg/L	0.2	1.6	1.6	200	5.6		N/A	N/A	N/A	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Chloroform	µg/L	0.2	2.4	2	80	2		N/A	N/A	N/A	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,2-Dichloroethane	µg/L	0.2	1.6	0.5	210	NS		N/A	N/A	N/A	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,1-Trichloroethane	µg/L	0.3	640	23	54	NS		N/A	N/A	N/A	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Carbon Tetrachloride	µg/L	0.2	0.79	0.2	57	NS		N/A	N/A	N/A	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Benzene	µg/L	0.2	44	0.5	10	2		N/A	N/A	N/A	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,2-Dichloropropane	µg/L	0.2	16	0.58	850	NS		N/A	N/A	N/A	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Trichloroethylene	µg/L	0.2	1.6	0.5	54	7.6		N/A	N/A	N/A	<0.20	<0.20	0.66	1.3	1.6	<0.20	<0.20	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromodichloromethane	µg/L	0.2	85000	67000	350	NS		N/A	N/A	N/A	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Methyl Isobutyl Ketone	µg/L	1	140000	5200	NS	NS		N/A	N/A	N/A	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
1,1,2-Trichloroethane	µg/L	0.2	4.7	0.5	800	NS		N/A	N/A	N/A	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Toluene	µg/L	0.2	18000	320	80	2		N/A	N/A	N/A	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Dibromochloromethane	µg/L	0.1	82000	65000	57	NS		N/A	N/A	N/A	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Ethylene Dibromide	µg/L	0.1	0.25	0.2	NS	NS		N/A	N/A	N/A	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Tetrachloroethylene	µg/L	0.2	1.6	0.5	50	4.4		N/A	N/A	N/A	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,1,2-Tetrachloroethane	µg/L	0.1	3.3	1.1	NS	NS		N/A	N/A	N/A	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Chlorobenzene	µg/L	0.1	630	140	57	NS		N/A	N/A	N/A	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Ethylbenzene	µg/L	0.1	2300	54	57	2		N/A	N/A	N/A	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
m & p-Xylene	µg/L	0.2	NS	NS	NS	NS		N/A	N/A	N/A	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromoform	µg/L	0.1	380	5	630	NS		N/A	N/A	N/A	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Styrene	µg/L	0.1	1300	43	40	NS		N/A	N/A	N/A	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,2,2-Tetrachloroethane	µg/L	0.1	3.2	0.5	40	17		N/A	N/A	N/A	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
o-Xylene	µg/L	0.1	NS	NS	NS	NS		N/A	N/A	N/A	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,3-Dichlorobenzene	µg/L	0.1	9600	7600	36	NS		N/A	N/A	N/A	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,4-Dichlorobenzene	µg/L	0.1	8	0.5	17	6.8		N/A	N/A	N/A	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,2-Dichlorobenzene	µg/L	0.1	4600	150	88	5.6		N/A	N/A	N/A	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,3-Dichloropropene	µg/L	0.3	5.2	0.5	NS	NS		N/A	N/A	N/A	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Xylene Mixture	µg/L	0.2	4200	72	320	4.4		N/A	N/A	N/A	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
n-Hexane	µg/L	0.2	51	5	NS	NS		N/A	N/A	N/A	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Toluene-d8	% Recovery	N/A	NS	NS	NS	NS		N/A	N/A	N/A	91	84	90	85	100	99	114	-	-	-	-
4-Bromofluorobenzene	% Recovery	N/A	NS	NS	NS	NS		N/A	N/A	N/A	110	103	95	98	94	88	101	-	-	-	-

Notes:
1 RDL - Reported Detection Limit
2 N/A - Not Applicable
3 NS - No Standard
4 ND- Non-detect
5 * - Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Groundwater Condition (MOECC, April 15, 2011)
6 ** - Table 7: Generic Site Condition Standards for Shallow Soils in a Non-Potable Groundwater Condition (MOECC, April 15, 2011)
7 **Bold** - Exceeds MOECC Table 3 SCS
8 *Italicized* - Exceeds MOECC Table 7 SCS

TABLE C1
GROUNDWATER ANALYTICAL RESULTS
CONTINUED

Parameter	Units	RDL	MOECC Table 3*	MOECC Table 7**	City of Ottawa Sanitary Sewer Geuidelines***	City of Ottawa Storm Sewer Guidelines****	Sample Location:	MW 18-10S					MW 18-10D				MW 18-11			
							Sample ID:	BH18-10	MW18-10 SA2	MW18-10S	MW18-10S GS2	BH 18-10S GW1	BH18-10 S GW2	MW18-10D	MW18-10D GS2	BH 18-10D GW1	BH18-10 D GW2	MW18-11	MW18-11 GS2	BH 18-11 GW1	BH18-11 GW2
							Date Sampled:	2018-02-15	2018-05-11	2018-07-26	2018-08-10	2018-12-06	2019-03-01	2018-07-26	2018-08-20	2018-12-06	2019-03-01	2018-07-26	2018-08-20	2018-12-06	2019-03-01
Metals																				
Antimony	µg/L	1	20000	16000	NS	NS		<1.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Arsenic	µg/L	1	1900	1500	NS	NS		<1.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Barium	µg/L	2	29000	23000	NS	NS		178	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Beryllium	µg/L	0.5	67	53	NS	NS		<0.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Boron	µg/L	10	45000	36000	NS	NS		13.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Cadmium	µg/L	0.2	2.7	2.1	NS	NS		<0.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chromium	µg/L	2	810	640	NS	NS		2.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Cobalt	µg/L	0.5	66	52	NS	NS		1.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Copper	µg/L	1	87	69	NS	NS		3.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Lead	µg/L	0.5	25	20	NS	NS		<0.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Molybdenum	µg/L	0.5	9200	7300	NS	NS		0.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nickel	µg/L	1	490	390	NS	NS		3.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Selenium	µg/L	1	63	50	NS	NS		<1.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Silver	µg/L	0.2	1.5	1.2	NS	NS		<0.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Thallium	µg/L	0.3	510	400	NS	NS		<0.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Uranium	µg/L	0.5	420	330	NS	NS		0.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vanadium	µg/L	0.4	250	200	NS	NS		0.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Zinc	µg/L	5	1100	890	NS	NS		<5.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Mercury	µg/L	0.02	0.29	0.1	NS	NS		<0.02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chromium VI	µg/L	5	140	110	NS	NS		<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
OC Pesticides																				
Gamma-Hexachlorocyclohexane	µg/L	0.01	1.2	0.95	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Heptachlor	µg/L	0.01	2.5	0.038	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Aldrin	µg/L	0.01	8.5	3	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Heptachlor Epoxide	µg/L	0.01	0.048	0.038	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Endosulfan	µg/L	0.05	1.5	0.56	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chlordane	µg/L	0.04	28	0.06	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DDE	µg/L	0.01	20	17	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DDD	µg/L	0.05	45	1.8	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DDT	µg/L	0.04	2.8	0.05	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dieldrin	µg/L	0.02	0.75	0.56	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Endrin	µg/L	0.05	0.48	0.36	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Methoxychlor	µg/L	0.04	6.5	0.3	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Hexachlorobenzene	ug/L	0.01	3.1	3.1	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Hexachlorobutadiene	ug/L	0.01	0.44	0.012	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Hexachloroethane	ug/L	0.01	94	0.17	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TCMX	%	N/A	NS	NS	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Decachlorobiphenyl	%	N/A	NS	NS	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Polycyclic Aromatic Hydrocarbon																				
Naphthalene	µg/L	0.2	1400	7	59	6.4		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acenaphthylene	µg/L	0.2	1.8	1	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acenaphthene	µg/L	0.2	600	17	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Fluorene	µg/L	0.2	400	290	59	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Phenanthrene	µg/L	0.1	580	380	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Anthracene	µg/L	0.1	2.4	1	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Fluoranthene	µg/L	0.2	130	44	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pyrene	µg/L	0.2	68	5.7	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benz(a)anthracene	µg/L	0.2	4.7	1.8	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chrysene	µg/L	0.1	1	0.7	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzo(b)fluoranthene	µg/L	0.1	0.75	0.75	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzo(k)fluoranthene	µg/L	0.1	0.4	0.4	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzo(a)pyrene	µg/L	0.01	0.81	0.81	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Indeno(1,2,3-cd)pyrene	µg/L	0.2	0.2	0.2	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dibenz(a,h)anthracene	µg/L	0.2	0.52	0.4	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzo(g,h,i)perylene	µg/L	0.2	0.2	0.2	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2-and 1-methyl Naphthalene	µg/L	0.2	1800	1500	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chrysene-d12	%	N/A	NS	NS	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Petroleum Hydrocarbons																				
Benzene	µg/L	0.2	44	0.5	10	2		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Toluene	µg/L	0.2	18000	320	80	2		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Ethylbenzene	µg/L	0.1	2300	54	57	2		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Xylene Mixture	µg/L	0.2	4200	72	320	4.4		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
F1 (C6 to C10)	µg/L	25	750	NS	NS	NS		<25	<25	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
F1 (C6 to C10) minus BTEX	µg/L	25	750	420	NS	NS		<25	<25	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
F2 (C10 to C16)	µg/L	100	150	150	NS	NS		<100	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
F2 (C10 to C16) minus Naphthalene	µg/L	100	NS	NS	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
F3 (C16 to C34)	µg/L	100	500	500	NS	NS		<100	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
F3 (C16 to C34) minus PAHs	µg/L	100	NS	NS	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
F4 (C34 to C50)	µg/L	100	500	500	NS	NS		<100	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Gravimetric Heavy Hydrocarbons	µg/L	500	500	500	NS	NS		NA	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Terphenyl	%	N/A	NS	NS	NS	NS		98	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Volatile Organic Compounds																				
Dichlorodifluoromethane	µg/L	0.2	4400	3500	NS	NS		<0.20	<0.20	<0.20	<0.20	ND (1.0)	ND (1.0)	<0.20	<0.40	ND (1.0)	ND (1.0)	<0.80	<0.20	ND (1.0)	ND (1.0)
Vinyl Chloride	µg/L	0.17	0.5	0.5	400	NS		<0.17	<0.17	<0.17	<0.17	ND (0.5)	ND (0.5)	<0.17	<0.34	ND (0.5)	ND (0.5)	<0.68	<0.17	ND (0.5)	ND (0.5)
Bromomethane	µg/L	0.2	5.6	0.89	110	NS		<0.20	<0.20	<0.20	<0.20	ND (0.5)	ND (0.5)	<0.20	<0.40	ND (0.5)	ND (0.5)	<0.80	<0.20	ND (0.5)	ND (0.5)
Trichlorofluoromethane	µg/L	0.4	2500	2000	20	NS		<0.40	<0.40	<0.40	<0.40	ND (1.0)	ND (1.0)	<0.40	<0.80	ND (1.0)	ND (1.0)	<1.60	<0.40	ND (1.0)	ND (1.0)
Acetone	µg/L	1	130000	100000	NS	NS		<1.0	<1.0	<1.0	<1.0	ND (5.0)	ND (5.0)	<1.0	<2.0	ND (5.0)	ND (5.0)	<4.0	<1.0	ND (5.0)	ND (5.0)
1,1-Dichloroethylene	µg/L	0.3	1.6	0.5	40	NS		<0.30	<0.30	<0.30	<0.30	ND (0.5)	ND (0.5)	<0.30	<0.60	ND (0.5)	ND (0.5)	<1.20	<0.30	ND (0.5)	ND (0.5)
Methylene Chloride	µg/L	0.3	610	26	211	5.2		<0.30	<0.30	<0.30	<0.30	ND (5.0)	ND (5.0)	<0.30	<0.60	ND (5.0)	ND (5.0)	<1.20	<0.30	ND (5.0)	ND (5.0)
trans- 1,2-Dichloroethylene	µg/L	0.2	1.6	1.6	200	NS		<0.20	<0.20	<0.20	<0.20	ND (0.5)	ND (0.5)	<0.20	<0.40	ND (0.5)	ND (0.5)	<0.80	<0.20	ND (0.5)	ND (0.5)
Methyl tert-butyl ether	µg/L	0.2	190	15	NS	NS		<0.20	<0.20	<0.20	<0.20	ND (2.0)	ND (2.0)	<0.20	<0.40	ND (2.0)	ND (2.0)	<0.80	<0.20	ND (2.0)	ND (2.0)
1,1-Dichloroethane	µg/L	0.3	320	11	200	NS		<0.30	<0.30	<0.30	<0.30	ND (0.5)	ND (0.5)	<0.30	<0.60	ND (0.5)	ND (0.5)	<1.20	<0.30	ND (0.5)	ND (0.5)
Methyl Ethyl Ketone	µg/L	1	470000	21000	NS	NS		<1.0	<1.0	<1.0	<1.0	ND (5.0)	ND (5.0)	3.7	<2.0	ND (5.0)	ND (5.0)	<4.0	<1.0	ND (5.0)	ND (5.0)
cis- 1,2-Dichloroethylene	µg/L	0.2	1.6	1.6	200	5.6		<0.20	<0.20	<0.20	<0.20	ND (0.5)	ND (0.5)	<0.20	<0.40	ND (0.5)	ND (0.5)	<0.80	<0.20	ND (0.5)	ND (0.5)
Chloroform	µg/L	0.2	2.4	2	80	2		<0.20	<0.20	<0.20	<0.20	ND (0.5)	ND (0.5)	<0.20	<0.40	ND (0.5)	ND (0.5)	<0.80	0.45	ND (0.5)	ND (0.5)
1,2-Dichloroethane	µg/L	0.2	1.6	0.5	210	NS		<0.20	<0.20	<0.20	<0.20	ND (0.5)	ND (0.5)	<0.20	<0.40	ND (0.5)	ND (0.5)	<0.80	<0.20	ND (0.5)	ND (0.5)
1,1,1-Trichloroethane	µg/L	0.3	640	23	54	NS		<0.30	<0.30	<0.30	<0.30	ND (0.5)	ND (0.5)	<0.30	<0.60	ND (0.5)	ND (0.5)	<1.20	<0.30	ND (0.5)	ND (0.5)
Carbon Tetrachloride	µg/L	0.2	0.79	0.2	57	NS		<0.20	<0.20	<0.20	<0.20	ND (0.2)	ND (0.2)	<0.20	<0.40	ND (0.2)	ND (0.2)	<0.80	<0.20	ND (0.2)	ND (0.2)
Benzene	µg/L	0.2	44	0.5	10	2		<0.20	<0.20	<0.20	<0.20	ND (0.5)	ND (0.5)	0.66	<0.40	ND (0.5)	ND (0.5)	*1.1*	*0.63*	ND (0.5)	ND (0.5)
1,2-Dichloropropane	µg/L	0.2	16	0.58	850	NS		<0.20	<0.20	<0.20	<0.20	ND (0.5)	ND (0.5)	<0.20	<0.40	ND (0.5)	ND (0.5)	<0.80	<0.20	ND (0.5)	ND (0.5)
Trichloroethylene	µg/L	0.2	1.6	0.5	54	7.6		0.25	<0.20	<0.20	<0.20	ND (0.5)	ND (0.5)	<0.20	<0.40	ND (0.5)	ND (0.5)	<0.80	0.45	ND (0.5)	ND (0.5)
Bromodichloromethane	µg/L	0.2	85000	67000	350	NS		<0.20	<0.20	<0.20	<0.20	ND (0.5)	ND (0.5)	<0.20	<0.40	ND (0.5)	ND (0.5)	<0.80	<0.20	ND (0.5)	ND (0.5)
Methyl Isobutyl Ketone	µg/L	1	140000	5200	NS	NS		<1.0	<1.0	<1.0	<1.0	ND (5.0)	ND (5.0)	<1.0	<2.0	ND (5.0)	ND (5.0)	<4.0	<1.0	ND (5.0)	ND (5.0)
1,1,2-Trichloroethane	µg/L	0.2	4.7	0.5	800	NS		<0.20	<0.20	<0.20	<0.20	ND (0.5)	ND (0.5)	<0.20	<0.40	ND (0.5)	ND (0.5)	<0.80	<0.20	ND (0.5)	ND (0.5)
Toluene	µg/L	0.2	18000	320	80	2		<0.20	<0.20	<0.20	<0.20	ND (0.5)	ND (0.5)	2.10	0.5	ND (0.5)	ND (0.5)	2.60	1.1	ND (0.5)	ND (0.5)
Dibromochloromethane	µg/L	0.1	82000	65000	57	NS		<0.10	<0.10	<0.10	<0.10	ND (0.5)	ND (0.5)	<0.10	<0.20	ND (0.5)	ND (0.5)	<0.40	<0.10	ND (0.5)	ND (0.5)
Ethylene Dibromide	µg/L	0.1	0.25	0.2	NS	NS		<0.10	<0.10	<0.10	<0.10	ND (0.2)	ND (0.2)	<0.10	<0.20	ND (0.2)	ND (0.2)	<0.40	<0.10	ND (0.2)	ND (0.2)
Tetrachloroethylene	µg/L	0.2	1.6	0.5	50	4.4		<0.20	<0.20	<0.20	<0.20	ND (0.5)	ND (0.5)	<0.20	<0.40	ND (0.5)	ND (0.5)	<0.80	<0.20	ND (0.5)	ND (0.5)
1,1,1,2-Tetrachloroethane	µg/L	0.1	3.3	1.1	NS	NS		<0.10	<0.10	<0.10	<0.10	ND (0.5)	ND (0.5)	<0.10	<0.20	ND (0.5)	ND (0.5)	<0.40	<0.10	ND (0.5)	ND (0.5)
Chlorobenzene	µg/L	0.1	630	140	57	NS		<0.10	<0.10	<0.10	<0.10	ND (0.5)	ND (0.5)	<0.10	<0.20	ND (0.5)	ND (0.5)	<0.40	<0.10	ND (0.5)	ND (0.5)
Ethylbenzene	µg/L	0.1	2300	54	57	2		<0.10	<0.10	<0.10	<0.10	ND (0.5)	ND (0.5)	0.13	<0.20	ND (0.5)	ND (0.5)	<0.40	0.21	ND (0.5)	ND (0.5)
m & p-Xylene	µg/L	0.2	NS	NS	NS	NS		<0.20	<0.20	<0.20	<0.20	ND (0.5)	ND (0.5)	1.4	1.1	ND (0.5)	ND (0.5)	<0.80	1.5	ND (0.5)	ND (0.5)
Bromoform	µg/L	0.1	380	5	630	NS		<0.10	<0.10	<0.10	<0.10	ND (0.5)	ND (0.5)	<0.10	<0.20	ND (0.5)	ND (0.5)	<0.40	<0.10	ND (0.5)	ND (0.5)
Styrene	µg/L	0.1	1300	43	40	NS		<0.10	<0.10	<0.10	<0.10	ND (0.5)	ND (0.5)	<0.10	<0.20	ND (0.5)	ND (0.5)	<0.40	<0.10	ND (0.5)	ND (0.5)
1,1,2,2-Tetrachloroethane	µg/L	0.1	3.2	0.5	40	17		<0.10	<0.10	<0.10	<0.10	ND (0.5)	ND (0.5)	<0.10	<0.20	ND (0.5)	ND (0.5)	<0.40	<0.10	ND (0.5)	ND (0.5)
o-Xylene	µg/L	0.1	NS	NS	NS	NS		<0.10	<0.10	<0.10	<0.10	ND (0.5)	ND (0.5)	0.56	0.63	ND (0.5)	ND (0.5)	<0.40	0.63	ND (0.5)	ND (0.5)
1,3-Dichlorobenzene	µg/L	0.1	9600	7600	36	NS		<0.10	<0.10	<0.10	<0.10	ND (0.5)	ND (0.5)	<0.10	<0.20	ND (0.5)	ND (0.5)	<0.40	<0.10	ND (0.5)	ND (0.5)
1,4-Dichlorobenzene	µg/L	0.1	8	0.5	17	6.8		<0.10	<0.10	<0.10	<0.10	ND (0.5)	ND (0.5)	<0.10	<0.20	ND (0.5)	ND (0.5)	<0.40	<0.10	ND (0.5)	ND (0.5)
1,2-Dichlorobenzene	µg/L	0.1	4600	150	88	5.6		<0.10	<0.10	<0.10	<0.10	ND (0.5)	ND (0.5)	<0.10	<0.20	ND (0.5)	ND (0.5)	<0.40	<0.10	ND (0.5)	ND (0.5)
1,3-Dichloropropene	µg/L	0.3	5.2	0.5	NS	NS		<0.30	<0.30	<0.30	<0.30	ND (0.5)	ND (0.5)	<0.30	<0.60	ND (0.5)	ND (0.5)	<1.20	<0.30	ND (0.5)	ND (0.5)
Xylene Mixture	µg/L	0.2	4200	72	320	4.4		<0.20	<0.20	<0.20	<0.20	ND (0.5)	ND (0.5)	2	1.7	ND (0.5)	ND (0.5)	<0.80	2.1	ND (0.5)	ND (0.5)
n-Hexane	µg/L	0.2	51	5	NS	NS		<0.20	<0.20	<0.20	<0.20	ND (1.0)	ND (1.0)	0.45	<0.40	ND (1.0)	ND (1.0)	<0.80	<0.20	ND (1.0)	ND (1.0)
Toluene-d8	% Recovery	N/A	NS	NS	NS	NS		89	92	98	116	-	-	105	74	-	-	107	117	-	-
4-Bromofluorobenzene	% Recovery	N/A	NS	NS	NS	NS		94	91	94	102	-	-	106	116	-	-	91	112	-	-

Notes:
1 RDL - Reported Detection Limit
2 N/A - Not Applicable
3 NS - No Standard
4 ND- Non-detect
5 * - Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Groundwater Condition (MOECC, April 15, 2011)
6 ** - Table 7: Generic Site Condition Standards for Shallow Soils in a Non-Potable Groundwater Condition (MOECC, April 15, 2011)
7 **Bold** - Exceeds MOECC Table 3 SCS
8 *Italicized* - Exceeds MOECC Table 7 SCS

TABLE C1
GROUNDWATER ANALYTICAL RESULTS
CONTINUED

Parameter	Units	RDL	MOECC Table 3*	MOECC Table 7**	City of Ottawa Sanitary Sewer Geuidelines***	City of Ottawa Storm Sewer Guidelines****	Sample Location:	MW 18-12						MW 18-13				QA/QC	
							Sample ID:	MW18-12	MW18-12 GS2	MW18-112 GS2	MW18-12 GW2	BH 19-12 GW1	BH18-12 GW2 1909515-05	MW18-13	MW18-13 GS2	BH 19-12 GW1	BH18-13 GW-2	MW18-Q	Trip Blank
							Date Sampled:	2018-07-26	2018-08-10	2018-08-10	2018-08-10	2018-12-06	2019-03-01	2018-07-26	2018-08-20	2018-12-06	2019-03-05	2018-08-10	2018-08-10
Metals																			
Antimony	µg/L	1	20000	16000	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Arsenic	µg/L	1	1900	1500	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Barium	µg/L	2	29000	23000	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Beryllium	µg/L	0.5	67	53	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Boron	µg/L	10	45000	36000	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Cadmium	µg/L	0.2	2.7	2.1	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chromium	µg/L	2	810	640	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Cobalt	µg/L	0.5	66	52	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Copper	µg/L	1	87	69	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Lead	µg/L	0.5	25	20	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Molybdenum	µg/L	0.5	9200	7300	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nickel	µg/L	1	490	390	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Selenium	µg/L	1	63	50	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Silver	µg/L	0.2	1.5	1.2	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Thallium	µg/L	0.3	510	400	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Uranium	µg/L	0.5	420	330	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vanadium	µg/L	0.4	250	200	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Zinc	µg/L	5	1100	890	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Mercury	µg/L	0.02	0.29	0.1	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chromium VI	µg/L	5	140	110	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
OC Pesticides																			
Gamma-Hexachlorocyclohexane	µg/L	0.01	1.2	0.95	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Heptachlor	µg/L	0.01	2.5	0.038	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Aldrin	µg/L	0.01	8.5	3	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Heptachlor Epoxide	µg/L	0.01	0.048	0.038	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Endosulfan	µg/L	0.05	1.5	0.56	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chlordane	µg/L	0.04	28	0.06	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DDE	µg/L	0.01	20	17	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DDD	µg/L	0.05	45	1.8	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DDT	µg/L	0.04	2.8	0.05	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dieldrin	µg/L	0.02	0.75	0.56	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Endrin	µg/L	0.05	0.48	0.36	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Methoxychlor	µg/L	0.04	6.5	0.3	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Hexachlorobenzene	ug/L	0.01	3.1	3.1	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Hexachlorobutadiene	ug/L	0.01	0.44	0.012	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Hexachloroethane	ug/L	0.01	94	0.17	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TCMX	%	N/A	NS	NS	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Decachlorobiphenyl	%	N/A	NS	NS	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Polycyclic Aromatic Hydrocarbon																			
Naphthalene	µg/L	0.2	1400	7	59	6.4		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acenaphthylene	µg/L	0.2	1.8	1	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acenaphthene	µg/L	0.2	600	17	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Fluorene	µg/L	0.2	400	290	59	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Phenanthrene	µg/L	0.1	580	380	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Anthracene	µg/L	0.1	2.4	1	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Fluoranthene	µg/L	0.2	130	44	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pyrene	µg/L	0.2	68	5.7	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benz(a)anthracene	µg/L	0.2	4.7	1.8	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chrysene	µg/L	0.1	1	0.7	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzo(b)fluoranthene	µg/L	0.1	0.75	0.75	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzo(k)fluoranthene	µg/L	0.1	0.4	0.4	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzo(a)pyrene	µg/L	0.01	0.81	0.81	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Indeno(1,2,3-cd)pyrene	µg/L	0.2	0.2	0.2	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dibenz(a,h)anthracene	µg/L	0.2	0.52	0.4	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzo(g,h,i)perylene	µg/L	0.2	0.2	0.2	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2-and 1-methyl Naphthalene	µg/L	0.2	1800	1500	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chrysene-d12	%	N/A	NS	NS	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Petroleum Hydrocarbons																			
Benzene	µg/L	0.2	44	0.5	10	2		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Toluene	µg/L	0.2	18000	320	80	2		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Ethylbenzene	µg/L	0.1	2300	54	57	2		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Xylene Mixture	µg/L	0.2	4200	72	320	4.4		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
F1 (C6 to C10)	µg/L	25	750	NS	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
F1 (C6 to C10) minus BTEX	µg/L	25	750	420	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
F2 (C10 to C16)	µg/L	100	150	150	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
F2 (C10 to C16) minus Naphthalene	µg/L	100	NS	NS	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
F3 (C16 to C34)	µg/L	100	500	500	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
F3 (C16 to C34) minus PAHs	µg/L	100	NS	NS	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
F4 (C34 to C50)	µg/L	100	500	500	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Gravimetric Heavy Hydrocarbons	µg/L	500	500	500	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Terphenyl	%	N/A	NS	NS	NS	NS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Volatile Organic Compounds																			
Dichlorodifluoromethane	µg/L	0.2	4400	3500	NS	NS		<0.20	<0.20	<0.20	ND (1.0)	ND (1.0)	ND (1.0)	<0.20	<2.00	ND (1.0)	ND (5.0)	<0.20	<0.20
Vinyl Chloride	µg/L	0.17	0.5	0.5	400	NS		<0.17	<0.17	<0.17	ND (0.5)	ND (0.5)	ND (0.5)	<0.17	<1.70	ND (0.5)	ND (0.5)	<0.17	<0.17
Bromomethane	µg/L	0.2	5.6	0.89	110	NS		<0.20	<0.20	<0.20	ND (0.5)	ND (0.5)	ND (0.5)	<0.20	<2.00	ND (0.5)	ND (0.5)	<0.20	<0.20
Trichlorofluoromethane	µg/L	0.4	2500	2000	20	NS		<0.40	<0.40	<0.40	ND (1.0)	ND (1.0)	ND (1.0)	<0.40	<4.00	ND (1.0)	ND (0.5)	<0.40	<0.40
Acetone	µg/L	1	130000	100000	NS	NS		<1.0	<1.0	<1.0	ND (5.0)	ND (5.0)	ND (5.0)	<1.0	<10.0	ND (5.0)	ND (0.5)	<1.0	<1.0
1,1-Dichloroethylene	µg/L	0.3	1.6	0.5	40	NS		<0.30	<0.30	<0.30	ND (0.5)	ND (0.5)	ND (0.5)	<0.30	<3.00	ND (0.5)	ND (0.2)	<0.30	<0.30
Methylene Chloride	µg/L	0.3	610	26	211	5.2		<0.30	<0.30	<0.30	ND (5.0)	ND (5.0)	ND (5.0)	<0.30	<3.00	ND (5.0)	ND (0.5)	<0.30	<0.30
trans- 1,2-Dichloroethylene	µg/L	0.2	1.6	1.6	200	NS		<0.20	<0.20	<0.20	ND (0.5)	ND (0.5)	ND (0.5)	<0.20	<2.00	ND (0.5)	ND (0.5)	<0.20	<0.20
Methyl tert-butyl ether	µg/L	0.2	190	15	NS	NS		<0.20	<0.20	<0.20	ND (2.0)	ND (2.0)	ND (2.0)	<0.20	<2.00	ND (2.0)	ND (0.5)	<0.20	<0.20
1,1-Dichloroethane	µg/L	0.3	320	11	200	NS		<0.30	<0.30	<0.30	ND (0.5)	ND (0.5)	ND (0.5)	<0.30	<3.00	ND (0.5)	ND (1.0)	<0.30	<0.30
Methyl Ethyl Ketone	µg/L	1	470000	21000	NS	NS		<1.0	<1.0	<1.0	ND (5.0)	ND (5.0)	ND (5.0)	<1.0	<10.0	ND (5.0)	ND (0.5)	<1.0	<1.0
cis- 1,2-Dichloroethylene	µg/L	0.2	1.6	1.6	200	5.6		<0.20	<0.20	<0.20	ND (0.5)	ND (0.5)	ND (0.5)	<0.20	<2.00	ND (0.5)	ND (0.5)	<0.20	<0.20
Chloroform	µg/L	0.2	2.4	2	80	2		<0.20	<0.20	<0.20	ND (0.5)	ND (0.5)	ND (0.5)	<0.20	<2.00	ND (0.5)	ND (0.5)	<0.20	<0.20
1,2-Dichloroethane	µg/L	0.2	1.6	0.5	210	NS		<0.20	<0.20	<0.20	ND (0.5)	ND (0.5)	ND (0.5)	<0.20	<2.00	ND (0.5)	ND (0.5)	<0.20	<0.20
1,1,1-Trichloroethane	µg/L	0.3	640	23	54	NS		<0.30	<0.30	<0.30	ND (0.5)	ND (0.5)	ND (0.5)	<0.30	<3.00	ND (0.5)	ND (0.5)	<0.30	<0.30
Carbon Tetrachloride	µg/L	0.2	0.79	0.2	57	NS		<0.20	<0.20	<0.20	ND (0.2)	ND (0.2)	ND (0.2)	<0.20	<2.00	ND (0.2)	ND (0.5)	<0.20	<0.20
Benzene	µg/L	0.2	44	0.5	10	2		*0.65*	0.22	<0.20	ND (0.5)	ND (0.5)	ND (0.5)	1.1	<2.00	ND (0.5)	ND (0.5)	<0.20	<0.20
1,2-Dichloropropane	µg/L	0.2	16	0.58	850	NS		<0.20	<0.20	<0.20	ND (0.5)	ND (0.5)	ND (0.5)	<0.20	<2.00	ND (0.5)	ND (0.5)	<0.20	<0.20
Trichloroethylene	µg/L	0.2	1.6	0.5	54	7.6		<0.20	<0.20	<0.20	ND (0.5)	ND (0.5)	ND (0.5)	<0.20	<2.00	ND (0.5)	ND (0.5)	*0.32*	<0.20
Bromodichloromethane	µg/L	0.2	85000	67000	350	NS		<0.20	<0.20	<0.20	ND (0.5)	ND (0.5)	ND (0.5)	<0.20	<2.00	ND (0.5)	ND (0.5)	<0.20	<0.20
Methyl Isobutyl Ketone	µg/L	1	140000	5200	NS	NS		<1.0	<1.0	<1.0	ND (5.0)	ND (5.0)	ND (5.0)	<1.0	<10.0	ND (5.0)	ND (0.5)	<1.0	<1.0
1,1,2-Trichloroethane	µg/L	0.2	4.7	0.5	800	NS		<0.20	<0.20	<0.20	ND (0.5)	ND (0.5)	ND (0.5)	<0.20	<2.00	ND (0.5)	ND (0.5)	<0.20	<0.20
Toluene	µg/L	0.2	18000	320	80	2		1.3	0.43	0.42	ND (0.5)	ND (0.5)	ND (0.5)	1.7	<2.00	ND (0.5)	ND (0.5)	<0.20	<0.20
Dibromochloromethane	µg/L	0.1	82000	65000	57	NS		<0.10	<0.10	<0.10	ND (0.5)	ND (0.5)	ND (0.5)	<0.10	<1.00	ND (0.5)	ND (0.2)	<0.10	<0.10
Ethylene Dibromide	µg/L	0.1	0.25	0.2	NS	NS		<0.10	<0.10	<0.10	ND (0.2)	ND (0.2)	ND (0.2)	<0.10	<1.00	ND (0.2)	ND (1.0)	<0.10	<0.10
Tetrachloroethylene	µg/L	0.2	1.6	0.5	50	4.4		<0.20	<0.20	<0.20	ND (0.5)	ND (0.5)	ND (0.5)	<0.20	<2.00	ND (0.5)	ND (5.0)	<0.20	<0.20
1,1,1,2-Tetrachloroethane	µg/L	0.1	3.3	1.1	NS	NS		<0.10	<0.10	<0.10	ND (0.5)	ND (0.5)	ND (0.5)	<0.10	<1.00	ND (0.5)	ND (5.0)	<0.10	<0.10
Chlorobenzene	µg/L	0.1	630	140	57	NS		<0.10	<0.10	<0.10	ND (0.5)	ND (0.5)	ND (0.5)	<0.10	<1.00	ND (0.5)	ND (2.0)	<0.10	<0.10
Ethylbenzene	µg/L	0.1	2300	54	57	2		0.13	0.1	0.12	ND (0.5)	ND (0.5)	ND (0.5)	0.13	<1.00	ND (0.5)	ND (5.0)	<0.10	<0.10
m & p-Xylene	µg/L	0.2	NS	NS	NS	NS		0.71	0.37	0.52	ND (0.5)	ND (0.5)	ND (0.5)	1.1	<2.00	ND (0.5)	ND (0.5)	<0.20	<0.20
Bromoform	µg/L	0.1	380	5	630	NS		<0.10	<0.10	<0.10	ND (0.5)	ND (0.5)	ND (0.5)	<0.10	<1.00	ND (0.5)	ND (0.5)	<0.10	<0.10
Styrene	µg/L	0.1	1300	43	40	NS		<0.10	<0.10	<0.10	ND (0.5)	ND (0.5)	ND (0.5)	<0.10	<1.00	ND (0.5)	ND (0.5)	<0.10	<0.10
1,1,2,2-Tetrachloroethane	µg/L	0.1	3.2	0.5	40	17		<0.10	<0.10	<0.10	ND (0.5)	ND (0.5)	ND (0.5)	<0.10	<1.00	ND (0.5)	ND (0.5)	<0.10	<0.10
o-Xylene	µg/L	0.1	NS	NS	NS	NS		0.19	0.23	0.28	ND (0.5)	ND (0.5)	ND (0.5)	0.34	<1.00	ND (0.5)	ND (0.5)	<0.10	<0.10
1,3-Dichlorobenzene	µg/L	0.1	9600	7600	36	NS		<0.10	<0.10	<0.10	ND (0.5)	ND (0.5)	ND (0.5)	<0.10	<1.00	ND (0.5)	ND (0.5)	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	0.1	8	0.5	17	6.8		<0.10	<0.10	<0.10	ND (0.5)	ND (0.5)	ND (0.5)	<0.10	<1.00	ND (0.5)	ND (0.5)	<0.10	<0.10
1,2-Dichlorobenzene	µg/L	0.1	4600	150	88	5.6		<0.10	<0.10	<0.10	ND (0.5)	ND (0.5)	ND (0.5)	<0.10	<1.00	ND (0.5)	ND (0.5)	<0.10	<0.10
1,3-Dichloropropene	µg/L	0.3	5.2	0.5	NS	NS		<0.30	<0.30	<0.30	ND (0.5)	ND (0.5)	ND (0.5)	<0.30	<3.00	ND (0.5)	ND (1.0)	<0.30	<0.30
Xylene Mixture	µg/L	0.2	4200	72	320	4.4		0.9	0.6	0.8	ND (0.5)	ND (0.5)	ND (0.5)	1.4	<2.00	ND (0.5)	ND (0.5)	<0.20	<0.20
n-Hexane	µg/L	0.2	51	5	NS	NS		<0.20	<0.20	<0.20	ND (1.0)	ND (1.0)	ND (1.0)	<0.20	<2.00	ND (1.0)	ND (0.5)	<0.20	<0.20
Toluene-d8	% Recovery	N/A	NS	NS	NS	NS		98	115	118	-	-	-	89	100	-	ND (0.5)	114	98
4-Bromofluorobenzene	% Recovery	N/A	NS	NS	NS	NS		99	108	111	-	-	-	111	89	-	ND (0.5)	100	83

Notes:
1 RDL - Reported Detection Limit
2 N/A - Not Applicable
3 NS - No Standard
4 ND- Non-detect
5 * - Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Groundwater Condition (MOECC, April 15, 2011)
6 ** - Table 7: Generic Site Condition Standards for Shallow Soils in a Non-Potable Groundwater Condition (MOECC, April 15, 2011)
7 **Bold** - Exceeds MOECC Table 3 SCS
8 *Italicized* - Exceeds MOECC Table 7 SCS

APPENDIX D

Laboratory Certificates of Analysis

AGAT Laboratories

5835 COOPERS AVENUE
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FAX (905)712-5122
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CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS
32 STEACIE DRIVE
OTTAWA, ON K2K 2A9
(613) 836-1422

ATTENTION TO: Katherine Rispoli

PROJECT: 64153.50

AGAT WORK ORDER: 17T291975

SOIL ANALYSIS REVIEWED BY: Amanjot Bhela, Inorganic Coordinator

TRACE ORGANICS REVIEWED BY: Neli Popnikolova, Senior Chemist

DATE REPORTED: Dec 13, 2017

PAGES (INCLUDING COVER): 18

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.

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 17T291975

PROJECT: 64153.50

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Katherine Rispoli

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2017-12-06 **DATE REPORTED: 2017-12-11**

		SAMPLE DESCRIPTION:		BH17-1 SA-2	BH17-2 SA-1	BH17-3 SA-2	BH17-4 SA-2	BH17-5 SA-1	BH17-6 SA-2	BH17-7 SA-1	BH17-8 SA-1
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2017-11-24	2017-11-24	2017-11-24	2017-11-24	2017-11-24	2017-11-23	2017-11-23	2017-11-23
Parameter	**Unit**	**G / S**	**RDL**	**8956713**	**8956732**	**8956735**	**8956738**	**8956741**	**8956745**	**8956750**	**8956754**
Antimony	µg/g	1.3	0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	4	3	3	4	3	2	1	2
Barium	µg/g	220	2	212	175	149	132	103	**381**	49	**582**
Beryllium	µg/g	2.5	0.5	0.7	0.5	<0.5	0.5	<0.5	0.7	<0.5	0.9
Boron	µg/g	36	5	7	7	6	5	6	6	<5	5
Boron (Hot Water Soluble)	µg/g	NA	0.10	0.33	0.20	0.26	<0.10	1.01	<0.10	<0.10	<0.10
Cadmium	µg/g	1.2	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	µg/g	70	2	46	41	35	34	30	**78**	17	**75**
Cobalt	µg/g	21	0.5	13.7	11.6	11.0	9.6	7.8	20.9	6.4	18.5
Copper	µg/g	92	1	24	21	18	17	17	38	11	32
Lead	µg/g	120	1	9	7	6	6	6	7	4	8
Molybdenum	µg/g	2	0.5	<0.5	<0.5	<0.5	<0.5	0.9	<0.5	<0.5	<0.5
Nickel	µg/g	82	1	28	25	22	20	17	44	11	42
Selenium	µg/g	1.5	0.4	0.7	<0.4	0.4	0.5	0.7	<0.4	0.4	0.6
Silver	µg/g	0.5	0.2	<0.2	<0.2	<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	0.4	<0.4	<0.4
Uranium	µg/g	2.5	0.5	0.6	0.5	0.5	0.5	0.7	0.6	<0.5	0.9
Vanadium	µg/g	86	1	64	56	56	58	54	**95**	29	86
Zinc	µg/g	290	5	77	67	61	55	66	125	24	116
Chromium VI	µg/g	0.66	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cyanide	µg/g	0.051	0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Mercury	µg/g	0.27	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Electrical Conductivity	mS/cm	0.57	0.005	0.133	0.112	0.175	0.067	0.203	0.102	0.035	0.129
Sodium Adsorption Ratio	NA	2.4	NA	0.584	0.485	0.168	0.383	0.159	1.01	0.099	0.952
pH, 2:1 CaCl2 Extraction	pH Units		NA	6.68	7.08	7.01	6.40	6.95	6.78	4.72	6.78

Certified By: Amanjot Bhela

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Certificate of Analysis

AGAT WORK ORDER: 17T291975

PROJECT: 64153.50

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Katherine Rispoli

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2017-12-06 **DATE REPORTED: 2017-12-11**

		SAMPLE DESCRIPTION:		BH17-108 SA-1
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2017-11-23
Parameter	Unit	G / S	RDL	8956789
Antimony	µg/g	1.3	0.8	<0.8
Arsenic	µg/g	18	1	2
Barium	µg/g	220	2	**592**
Beryllium	µg/g	2.5	0.5	0.8
Boron	µg/g	36	5	6
Boron (Hot Water Soluble)	µg/g	NA	0.10	0.14
Cadmium	µg/g	1.2	0.5	<0.5
Chromium	µg/g	70	2	**78**
Cobalt	µg/g	21	0.5	18.8
Copper	µg/g	92	1	31
Lead	µg/g	120	1	8
Molybdenum	µg/g	2	0.5	<0.5
Nickel	µg/g	82	1	42
Selenium	µg/g	1.5	0.4	0.6
Silver	µg/g	0.5	0.2	<0.2
Thallium	µg/g	1	0.4	<0.4
Uranium	µg/g	2.5	0.5	0.9
Vanadium	µg/g	86	1	**88**
Zinc	µg/g	290	5	115
Chromium VI	µg/g	0.66	0.2	<0.2
Cyanide	µg/g	0.051	0.040	<0.040
Mercury	µg/g	0.27	0.10	<0.10
Electrical Conductivity	mS/cm	0.57	0.005	0.198
Sodium Adsorption Ratio	NA	2.4	NA	1.83
pH, 2:1 CaCl2 Extraction	pH Units		NA	6.86

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use
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.

8956713-8956789 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

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AGAT WORK ORDER: 17T291975

PROJECT: 64153.50

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Katherine Rispoli

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - OC Pesticides (Soil)

DATE RECEIVED: 2017-12-06 **DATE REPORTED: 2017-12-12**

		SAMPLE DESCRIPTION:		BH17-1 SA-2	BH17-2 SA-1	BH17-3 SA-2	BH17-4 SA-2	BH17-5 SA-1
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2017-11-24	2017-11-24	2017-11-24	2017-11-24	2017-11-24
Parameter	**Unit**	**G / S**	**RDL**	**8956713**	**8956732**	**8956735**	**8956738**	**8956741**
Hexachloroethane	µg/g	0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Gamma-Hexachlorocyclohexane	µg/g	0.01	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Aldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heptachlor Epoxide	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endosulfan	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chlordane	µg/g	0.05	0.007	<0.007	<0.007	<0.007	<0.007	<0.007
DDE	µg/g	0.05	0.007	<0.007	<0.007	<0.007	<0.007	<0.007
DDD	µg/g	0.05	0.007	<0.007	<0.007	<0.007	<0.007	<0.007
DDT	µg/g	1.4	0.007	<0.007	<0.007	<0.007	<0.007	<0.007
Dieldrin	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endrin	µg/g	0.04	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Methoxychlor	µg/g	0.05	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobenzene	µg/g	0.01	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Hexachlorobutadiene	µg/g	0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Surrogate	**Unit**	**Acceptable Limits**						
TCMX	%	50-140		80	80	78	80	82
Decachlorobiphenyl	%	60-130		90	88	98	92	92

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use
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.

8956713-8956741 Results are based on the dry weight of the soil.
Note: DDT applies to the total of op'DDT and pp'DDT, DDD applies to the total of op'DDD and pp'DDD and DDE applies to the total of op'DDE and pp'DDE. Endosulfan applies to the total of Endosulfan I and Endosulfan II.
Chlordane applies to the total of Alpha-Chlordane and Gamma-Chlordane.

Certified By: NPopowich

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AGAT WORK ORDER: 17T291975

PROJECT: 64153.50

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Katherine Rispoli

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - PAHs (Soil)

DATE RECEIVED: 2017-12-06 **DATE REPORTED: 2017-12-12**

		SAMPLE DESCRIPTION:		BH17-1 SA-2	BH17-2 SA-1	BH17-3 SA-2	BH17-4 SA-2	BH17-5 SA-1
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2017-11-24	2017-11-24	2017-11-24	2017-11-24	2017-11-24
Parameter	**Unit**	**G / S**	**RDL**	**8956713**	**8956732**	**8956735**	**8956738**	**8956741**
Naphthalene	µg/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthylene	µg/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthene	µg/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluorene	µg/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Phenanthrene	µg/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Anthracene	µg/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluoranthene	µg/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Pyrene	µg/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benz(a)anthracene	µg/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	µg/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	µg/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	µg/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	µg/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenz(a,h)anthracene	µg/g		0.05	<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	<0.05
2-and 1-methyl Naphthalene	µg/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Moisture Content	%		0.1	19.8	26.1	24.1	24.1	18.7
Surrogate	**Unit**	**Acceptable Limits**						
Chrysene-d12	%	50-140		122	129	133	118	112

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

8956713-8956741 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: N Popnikolof

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AGAT WORK ORDER: 17T291975

PROJECT: 64153.50

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Katherine Rispoli

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Soil)

DATE RECEIVED: 2017-12-06 **DATE REPORTED: 2017-12-11**

		SAMPLE DESCRIPTION:		BH17-6 SA-2	BH17-7 SA-1	BH17-8 SA-1	BH17-8 SA-8	BH17-108 SA-8	BH17-108 SA-1
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2017-11-23	2017-11-23	2017-11-23	2017-11-23	2017-11-23	2017-11-23
Parameter	**Unit**	**G / S**	**RDL**	**8956745**	**8956750**	**8956754**	**8956765**	**8956772**	**8956789**
F1 (C6 to C10)	µg/g	25	5	<5	<5	<5	<5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	25	5	<5	<5	<5	<5	<5	<5
F2 (C10 to C16)	µg/g	10	10	<10	<10	<10	<10	<10	<10
F3 (C16 to C34)	µg/g	240	50	<50	<50	<50	<50	<50	<50
F4 (C34 to C50)	µg/g	120	50	<50	<50	<50	<50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g	120	50	NA	NA	NA	NA	NA	NA
Moisture Content	%		0.1	28.3	18.4	30.3	9.1	8.8	30.6
Surrogate	**Unit**	**Acceptable Limits**							
Terphenyl	%	60-140		98	107	91	87	89	115

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use
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.

8956745-8956789 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.

Certified By: N Popnikolof

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AGAT WORK ORDER: 17T291975

PROJECT: 64153.50

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Katherine Rispoli

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - PHCs F1 - F4 (with PAHs) (Soil)

DATE RECEIVED: 2017-12-06 **DATE REPORTED: 2017-12-11**

		SAMPLE DESCRIPTION:		BH17-1 SA-2	BH17-2 SA-1	BH17-3 SA-2	BH17-4 SA-2	BH17-5 SA-1
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2017-11-24	2017-11-24	2017-11-24	2017-11-24	2017-11-24
Parameter	**Unit**	**G / S**	**RDL**	**8956713**	**8956732**	**8956735**	**8956738**	**8956741**
Benzene	µg/g	0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Toluene	µg/g	0.2	0.08	<0.08	<0.08	<0.08	<0.08	<0.08
Ethylbenzene	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylene Mixture	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
F1 (C6 to C10)	µg/g	25	5	<5	<5	<5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	25	5	<5	<5	<5	<5	<5
F2 (C10 to C16)	µg/g	10	10	<10	<10	<10	<10	<10
F2 (C10 to C16) minus Naphthalene	µg/g		10	<10	<10	<10	<10	<10
F3 (C16 to C34)	µg/g	240	50	<50	<50	<50	<50	<50
F3 (C16 to C34) minus PAHs	µg/g		50	<50	<50	<50	<50	<50
F4 (C34 to C50)	µg/g	120	50	<50	<50	<50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g	120	50	NA	NA	NA	NA	NA
Moisture Content	%		0.1	19.8	26.1	24.1	24.1	18.7
Surrogate	**Unit**	**Acceptable Limits**						
Terphenyl	%	60-140		89	102	105	105	87

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use
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.

8956713-8956741 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.

Certified By: N Popnikolof

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AGAT WORK ORDER: 17T291975

PROJECT: 64153.50

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Katherine Rispoli

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - VOCs (Soil)

DATE RECEIVED: 2017-12-06

DATE REPORTED: 2017-12-08

		SAMPLE DESCRIPTION:		BH17-6 SA-2	BH17-7 SA-1	BH17-8 SA-1	BH17-8 SA-8	BH17-108 SA-8	BH17-108 SA-1
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2017-11-23	2017-11-23	2017-11-23	2017-11-23	2017-11-23	2017-11-23
Parameter	Unit	G / S	RDL	8956745	8956750	8956754	8956765	8956772	8956789
Dichlorodifluoromethane	µg/g	0.05	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	0.25	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acetone	ug/g	0.5	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	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trans- 1,2-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl tert-butyl Ether	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethane	ug/g	0.05	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Methyl Ethyl Ketone	ug/g	0.5	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g	0.05	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	0.05	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	0.02	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	0.05	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Bromodichloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl Isobutyl Ketone	ug/g	0.5	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	0.2	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Dibromochloromethane	ug/g	0.05	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	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g	0.05	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Chlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
m & p-Xylene	ug/g		0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Certified By: N Popnikolof

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Certificate of Analysis

AGAT WORK ORDER: 17T291975

PROJECT: 64153.50

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Katherine Rispoli

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - VOCs (Soil)

DATE RECEIVED: 2017-12-06 **DATE REPORTED: 2017-12-08**

		SAMPLE DESCRIPTION:		BH17-6 SA-2	BH17-7 SA-1	BH17-8 SA-1	BH17-8 SA-8	BH17-108 SA-8	BH17-108 SA-1
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2017-11-23	2017-11-23	2017-11-23	2017-11-23	2017-11-23	2017-11-23
Parameter	**Unit**	**G / S**	**RDL**	**8956745**	**8956750**	**8956754**	**8956765**	**8956772**	**8956789**
Bromoform	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Styrene	ug/g	0.05	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	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,2-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylene Mixture	ug/g	0.05	0.05	<0.05	<0.05	<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	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Surrogate	**Unit**	**Acceptable Limits**							
Toluene-d8	% Recovery	50-140		93	91	96	93	96	94
4-Bromofluorobenzene	% Recovery	50-140		82	78	77	76	81	76

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use
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.

8956745-8956789 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: N Popowkolof

AGAT Laboratories

Guideline Violation

AGAT WORK ORDER: 17T291975

PROJECT: 64153.50

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CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Katherine Rispoli

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
8956745	BH17-6 SA-2	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Barium	µg/g	220	381
8956745	BH17-6 SA-2	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Chromium	µg/g	70	78
8956745	BH17-6 SA-2	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Vanadium	µg/g	86	95
8956754	BH17-8 SA-1	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Barium	µg/g	220	582
8956754	BH17-8 SA-1	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Chromium	µg/g	70	75
8956789	BH17-108 SA-1	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Barium	µg/g	220	592
8956789	BH17-108 SA-1	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Chromium	µg/g	70	78
8956789	BH17-108 SA-1	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Vanadium	µg/g	86	88

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Quality Assurance

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

AGAT WORK ORDER: 17T291975

PROJECT: 64153.50

ATTENTION TO: Katherine Rispoli

SAMPLING SITE:

SAMPLED BY:

Soil Analysis

RPT Date:			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	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) - Metals & Inorganics (Soil)															
Antimony	8956713	8956713	<0.8	<0.8	NA	< 0.8	93%	70%	130%	96%	80%	120%	70%	70%	130%
Arsenic	8956713	8956713	4	4	NA	< 1	109%	70%	130%	103%	80%	120%	104%	70%	130%
Barium	8956713	8956713	212	208	1.9%	< 2	108%	70%	130%	100%	80%	120%	99%	70%	130%
Beryllium	8956713	8956713	0.7	0.6	NA	< 0.5	81%	70%	130%	100%	80%	120%	96%	70%	130%
Boron	8956713	8956713	7	8	NA	< 5	80%	70%	130%	107%	80%	120%	88%	70%	130%
Boron (Hot Water Soluble)	8956713	8956713	0.33	0.33	NA	< 0.10	106%	60%	140%	97%	70%	130%	97%	60%	140%
Cadmium	8956713	8956713	<0.5	<0.5	NA	< 0.5	111%	70%	130%	104%	80%	120%	104%	70%	130%
Chromium	8956713	8956713	46	47	2.2%	< 2	93%	70%	130%	103%	80%	120%	104%	70%	130%
Cobalt	8956713	8956713	13.7	14.1	2.9%	< 0.5	97%	70%	130%	100%	80%	120%	96%	70%	130%
Copper	8956713	8956713	24	24	0.0%	< 1	92%	70%	130%	102%	80%	120%	90%	70%	130%
Lead	8956713	8956713	9	10	10.5%	< 1	98%	70%	130%	102%	80%	120%	95%	70%	130%
Molybdenum	8956713	8956713	<0.5	<0.5	NA	< 0.5	96%	70%	130%	95%	80%	120%	99%	70%	130%
Nickel	8956713	8956713	28	28	0.0%	< 1	98%	70%	130%	99%	80%	120%	93%	70%	130%
Selenium	8956713	8956713	0.7	0.7	NA	< 0.4	115%	70%	130%	95%	80%	120%	97%	70%	130%
Silver	8956713	8956713	<0.2	<0.2	NA	< 0.2	110%	70%	130%	107%	80%	120%	100%	70%	130%
Thallium	8956713	8956713	<0.4	<0.4	NA	< 0.4	98%	70%	130%	103%	80%	120%	103%	70%	130%
Uranium	8956713	8956713	0.6	0.6	NA	< 0.5	95%	70%	130%	101%	80%	120%	100%	70%	130%
Vanadium	8956713	8956713	64	66	3.1%	< 1	99%	70%	130%	100%	80%	120%	103%	70%	130%
Zinc	8956713	8956713	77	79	2.6%	< 5	95%	70%	130%	104%	80%	120%	95%	70%	130%
Chromium VI	8956732	8956732	<0.2	<0.2	NA	< 0.2	82%	70%	130%	89%	80%	120%	92%	70%	130%
Cyanide	8952342		<0.040	<0.040	NA	< 0.040	92%	70%	130%	91%	80%	120%	99%	70%	130%
Mercury	8956713	8956713	<0.10	<0.10	NA	< 0.10	100%	70%	130%	94%	80%	120%	97%	70%	130%
Electrical Conductivity	8956713	8956713	0.133	0.132	0.8%	< 0.005	92%	90%	110%	NA			NA		
Sodium Adsorption Ratio	8956713	8956713	0.584	0.597	2.2%	NA	NA			NA			NA		
pH, 2:1 CaCl2 Extraction	8963436		7.43	7.43	0.0%	NA	101%	80%	120%	NA			NA		

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: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

AGAT WORK ORDER: 17T291975

PROJECT: 64153.50

ATTENTION TO: Katherine Rispoli

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis

RPT Date:			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	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) - OC Pesticides (Soil)															
Hexachloroethane	8953733		< 0.01	< 0.01	NA	< 0.01	84%	50%	140%	72%	50%	140%	68%	50%	140%
Gamma-Hexachlorocyclohexane	8953733		< 0.005	< 0.005	NA	< 0.005	81%	50%	140%	75%	50%	140%	70%	50%	140%
Heptachlor	8953733		< 0.005	< 0.005	NA	< 0.005	72%	50%	140%	64%	50%	140%	70%	50%	140%
Aldrin	8953733		< 0.005	< 0.005	NA	< 0.005	86%	50%	140%	90%	50%	140%	98%	50%	140%
Heptachlor Epoxide	8953733		< 0.005	< 0.005	NA	< 0.005	83%	50%	140%	78%	50%	140%	90%	50%	140%
Endosulfan	8953733		< 0.005	< 0.005	NA	< 0.005	84%	50%	140%	70%	50%	140%	83%	50%	140%
Chlordane	8953733		< 0.007	< 0.007	NA	< 0.007	82%	50%	140%	75%	50%	140%	81%	50%	140%
DDE	8953733		< 0.007	< 0.007	NA	< 0.007	84%	50%	140%	84%	50%	140%	91%	50%	140%
DDD	8953733		< 0.007	< 0.007	NA	< 0.007	91%	50%	140%	80%	50%	140%	87%	50%	140%
DDT	8953733		< 0.007	< 0.007	NA	< 0.007	93%	50%	140%	73%	50%	140%	68%	50%	140%
Dieldrin	8953733		< 0.005	< 0.005	NA	< 0.005	80%	50%	140%	78%	50%	140%	92%	50%	140%
Endrin	8953733		< 0.005	< 0.005	NA	< 0.005	76%	50%	140%	76%	50%	140%	90%	50%	140%
Methoxychlor	8953733		< 0.005	< 0.005	NA	< 0.005	72%	50%	140%	80%	50%	140%	66%	50%	140%
Hexachlorobenzene	8953733		< 0.005	< 0.005	NA	< 0.005	89%	50%	140%	82%	50%	140%	82%	50%	140%
Hexachlorobutadiene	8953733		< 0.01	< 0.01	NA	< 0.01	99%	50%	140%	68%	50%	140%	64%	50%	140%
O. Reg. 153(511) - VOCs (Soil)															
Dichlorodifluoromethane	8961873		< 0.05	< 0.05	NA	< 0.05	85%	50%	140%	85%	50%	140%	83%	50%	140%
Vinyl Chloride	8961873		< 0.02	< 0.02	NA	< 0.02	87%	50%	140%	127%	50%	140%	115%	50%	140%
Bromomethane	8961873		< 0.05	< 0.05	NA	< 0.05	97%	50%	140%	123%	50%	140%	121%	50%	140%
Trichlorofluoromethane	8961873		< 0.05	< 0.05	NA	< 0.05	116%	50%	140%	111%	50%	140%	122%	50%	140%
Acetone	8961873		< 0.50	< 0.50	NA	< 0.50	95%	50%	140%	103%	50%	140%	98%	50%	140%
1,1-Dichloroethylene	8961873		< 0.05	< 0.05	NA	< 0.05	71%	50%	140%	83%	60%	130%	74%	50%	140%
Methylene Chloride	8961873		< 0.05	< 0.05	NA	< 0.05	89%	50%	140%	74%	60%	130%	112%	50%	140%
Trans- 1,2-Dichloroethylene	8961873		< 0.05	< 0.05	NA	< 0.05	99%	50%	140%	112%	60%	130%	97%	50%	140%
Methyl tert-butyl Ether	8961873		< 0.05	< 0.05	NA	< 0.05	119%	50%	140%	80%	60%	130%	70%	50%	140%
1,1-Dichloroethane	8961873		< 0.02	< 0.02	NA	< 0.02	112%	50%	140%	112%	60%	130%	95%	50%	140%
Methyl Ethyl Ketone	8961873		< 0.50	< 0.50	NA	< 0.50	114%	50%	140%	96%	50%	140%	100%	50%	140%
Cis- 1,2-Dichloroethylene	8961873		< 0.02	< 0.02	NA	< 0.02	88%	50%	140%	95%	60%	130%	98%	50%	140%
Chloroform	8961873		< 0.04	< 0.04	NA	< 0.04	113%	50%	140%	117%	60%	130%	109%	50%	140%
1,2-Dichloroethane	8961873		< 0.03	< 0.03	NA	< 0.03	105%	50%	140%	112%	60%	130%	111%	50%	140%
1,1,1-Trichloroethane	8961873		< 0.05	< 0.05	NA	< 0.05	98%	50%	140%	100%	60%	130%	106%	50%	140%
Carbon Tetrachloride	8961873		< 0.05	< 0.05	NA	< 0.05	91%	50%	140%	104%	60%	130%	106%	50%	140%
Benzene	8961873		< 0.02	< 0.02	NA	< 0.02	80%	50%	140%	103%	60%	130%	88%	50%	140%
1,2-Dichloropropane	8961873		< 0.03	< 0.03	NA	< 0.03	102%	50%	140%	110%	60%	130%	99%	50%	140%
Trichloroethylene	8961873		< 0.03	< 0.03	NA	< 0.03	82%	50%	140%	105%	60%	130%	87%	50%	140%
Bromodichloromethane	8961873		< 0.05	< 0.05	NA	< 0.05	118%	50%	140%	114%	60%	130%	107%	50%	140%
Methyl Isobutyl Ketone	8961873		< 0.50	< 0.50	NA	< 0.50	99%	50%	140%	93%	50%	140%	94%	50%	140%
1,1,2-Trichloroethane	8961873		< 0.04	< 0.04	NA	< 0.04	94%	50%	140%	101%	60%	130%	113%	50%	140%
Toluene	8961873		< 0.05	< 0.05	NA	< 0.02	99%	50%	140%	96%	60%	130%	98%	50%	140%

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Quality Assurance

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

AGAT WORK ORDER: 17T291975

PROJECT: 64153.50

ATTENTION TO: Katherine Rispoli

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis (Continued)

RPT Date:			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
Dibromochloromethane	8961873		< 0.05	< 0.05	NA	< 0.05	112%	50%	140%	98%	60%	130%	106%	50%	140%
Ethylene Dibromide	8961873		< 0.04	< 0.04	NA	< 0.04	119%	50%	140%	97%	60%	130%	105%	50%	140%
Tetrachloroethylene	8961873		< 0.05	< 0.05	NA	< 0.05	100%	50%	140%	106%	60%	130%	99%	50%	140%
1,1,1,2-Tetrachloroethane	8961873		< 0.04	< 0.04	NA	< 0.04	72%	50%	140%	101%	60%	130%	104%	50%	140%
Chlorobenzene	8961873		< 0.05	< 0.05	NA	< 0.05	116%	50%	140%	96%	60%	130%	100%	50%	140%
Ethylbenzene	8961873		< 0.05	< 0.05	NA	< 0.05	109%	50%	140%	93%	60%	130%	90%	50%	140%
m & p-Xylene	8961873		< 0.05	< 0.05	NA	< 0.05	95%	50%	140%	97%	60%	130%	100%	50%	140%
Bromoform	8961873		< 0.05	< 0.05	NA	< 0.05	93%	50%	140%	98%	60%	130%	108%	50%	140%
Styrene	8961873		< 0.05	< 0.05	NA	< 0.05	87%	50%	140%	78%	60%	130%	79%	50%	140%
1,1,2,2-Tetrachloroethane	8961873		< 0.05	< 0.05	NA	< 0.05	99%	50%	140%	99%	60%	130%	91%	50%	140%
o-Xylene	8961873		< 0.05	< 0.05	NA	< 0.05	104%	50%	140%	102%	60%	130%	107%	50%	140%
1,3-Dichlorobenzene	8961873		< 0.05	< 0.05	NA	< 0.05	111%	50%	140%	85%	60%	130%	87%	50%	140%
1,4-Dichlorobenzene	8961873		< 0.05	< 0.05	NA	< 0.05	109%	50%	140%	95%	60%	130%	104%	50%	140%
1,2-Dichlorobenzene	8961873		< 0.05	< 0.05	NA	< 0.05	93%	50%	140%	89%	60%	130%	95%	50%	140%
1,3-Dichloropropene	8961873		< 0.04	< 0.04	NA	< 0.04	115%	50%	140%	97%	60%	130%	86%	50%	140%
n-Hexane	8961873		< 0.05	< 0.05	NA	< 0.05	99%	50%	140%	97%	60%	130%	87%	50%	140%
O. Reg. 153(511) - PHCs F1 - F4 (with PAHs) (Soil)															
Benzene	8964624		< 0.02	< 0.02	NA	< 0.02	94%	60%	130%	77%	60%	130%	95%	60%	130%
Toluene	8964624		< 0.08	< 0.08	NA	< 0.08	102%	60%	130%	87%	60%	130%	106%	60%	130%
Ethylbenzene	8964624		< 0.05	< 0.05	NA	< 0.05	98%	60%	130%	86%	60%	130%	106%	60%	130%
Xylene Mixture	8964624		< 0.05	< 0.05	NA	< 0.05	99%	60%	130%	89%	60%	130%	107%	60%	130%
F1 (C6 to C10)	8964624		< 5	< 5	NA	< 5	86%	60%	130%	87%	85%	115%	78%	70%	130%
F2 (C10 to C16)	8948988		< 10	< 10	NA	< 10	100%	60%	130%	104%	80%	120%	85%	70%	130%
F3 (C16 to C34)	8948988		< 50	< 50	NA	< 50	100%	60%	130%	108%	80%	120%	96%	70%	130%
F4 (C34 to C50)	8948988		< 50	< 50	NA	< 50	86%	60%	130%	102%	80%	120%	101%	70%	130%
O. Reg. 153(511) - PAHs (Soil)															
Naphthalene	8960913		< 0.05	< 0.05	NA	< 0.05	126%	50%	140%	80%	50%	140%	79%	50%	140%
Acenaphthylene	8960913		< 0.05	< 0.05	NA	< 0.05	100%	50%	140%	83%	50%	140%	84%	50%	140%
Acenaphthene	8960913		< 0.05	< 0.05	NA	< 0.05	106%	50%	140%	85%	50%	140%	79%	50%	140%
Fluorene	8960913		< 0.05	< 0.05	NA	< 0.05	112%	50%	140%	90%	50%	140%	87%	50%	140%
Phenanthrene	8960913		< 0.05	< 0.05	NA	< 0.05	107%	50%	140%	86%	50%	140%	86%	50%	140%
Anthracene	8960913		< 0.05	< 0.05	NA	< 0.05	110%	50%	140%	88%	50%	140%	87%	50%	140%
Fluoranthene	8960913		< 0.05	< 0.05	NA	< 0.05	130%	50%	140%	97%	50%	140%	102%	50%	140%
Pyrene	8960913		< 0.05	< 0.05	NA	< 0.05	124%	50%	140%	94%	50%	140%	102%	50%	140%
Benz(a)anthracene	8960913		< 0.05	< 0.05	NA	< 0.05	129%	50%	140%	98%	50%	140%	101%	50%	140%
Chrysene	8960913		< 0.05	< 0.05	NA	< 0.05	124%	50%	140%	102%	50%	140%	107%	50%	140%
Benzo(b)fluoranthene	8960913		< 0.05	< 0.05	NA	< 0.05	132%	50%	140%	123%	50%	140%	102%	50%	140%
Benzo(k)fluoranthene	8960913		< 0.05	< 0.05	NA	< 0.05	117%	50%	140%	116%	50%	140%	101%	50%	140%
Benzo(a)pyrene	8960913		< 0.05	< 0.05	NA	< 0.05	109%	50%	140%	89%	50%	140%	82%	50%	140%

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Quality Assurance

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

AGAT WORK ORDER: 17T291975

PROJECT: 64153.50

ATTENTION TO: Katherine Rispoli

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis (Continued)

RPT Date:			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
Indeno(1,2,3-cd)pyrene	8960913		< 0.05	< 0.05	NA	< 0.05	109%	50%	140%	67%	50%	140%	63%	50%	140%
Dibenz(a,h)anthracene	8960913		< 0.05	< 0.05	NA	< 0.05	107%	50%	140%	63%	50%	140%	76%	50%	140%
Benzo(g,h,i)perylene	8960913		< 0.05	< 0.05	NA	< 0.05	96%	50%	140%	77%	50%	140%	70%	50%	140%
2-and 1-methyl Naphthalene	8960913		< 0.05	< 0.05	NA	< 0.05	110%	50%	140%	89%	50%	140%	86%	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: N Popnikolof

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Method Summary

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

AGAT WORK ORDER: 17T291975

PROJECT: 64153.50

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SAMPLING SITE:

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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
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
Electrical Conductivity	INOR-93-6036	McKeague 4.12, SM 2510 B	EC METER
Sodium Adsorption Ratio	INOR-93-6007	McKeague 4.12 & 3.26 & EPA SW-846 6010B	ICP/OES
pH, 2:1 CaCl2 Extraction	INOR-93-6031	MSA part 3 & SM 4500-H+ B	PH METER

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http://www.agatlabs.com

Method Summary

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

AGAT WORK ORDER: 17T291975

PROJECT: 64153.50

ATTENTION TO: Katherine Rispoli

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Hexachloroethane	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Gamma-Hexachlorocyclohexane	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Heptachlor	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Aldrin	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Heptachlor Epoxide	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Endosulfan	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Chlordane	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
DDE	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
DDD	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
DDT	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Dieldrin	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Endrin	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Methoxychlor	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Hexachlorobenzene	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Hexachlorobutadiene	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
TCMX	ORG-91-5112	EPA SW-846 3541,3620 & 8081	GC/ECD
Decachlorobiphenyl	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
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
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
Benzene	VOL-91-5009	EPA SW-846 5035 & 8260	P & T GC/MS
Toluene	VOL-91-5009	EPA SW-846 5035 & 8260	P & T GC/MS
Ethylbenzene	VOL-91-5009	EPA SW-846 5035 & 8260	P & T GC/MS
Xylene Mixture	VOL-91-5009	EPA SW-846 5035 & 8260	P & T GC/MS

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Method Summary

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

AGAT WORK ORDER: 17T291975

PROJECT: 64153.50

ATTENTION TO: Katherine Rispoli

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
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
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

AGAT Laboratories

1 blk

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 intended for human consumption)

Laboratory Use Only

Work Order #: 17T291975

Cooler Quantity:

Arrival Temperatures: 3.8 | 4.7 | 4.4

Custody Seal Intact: ☐Yes ☐No ☐N/A

Notes:

Report Information:

Company: GEMTEC
Contact: K. RISPOLI
Address: 32 STEACIE DR.
OTTAWA, ON
Phone: (613) 836-1422 Fax:
Reports to be sent to:
1. Email: katherine.rispoli@gemtec.ca
2. Email:

Regulatory Requirements:

☐ No Regulatory Requirement
(Please check all applicable boxes)

☒ Regulation 153/04 Table 1 *Indicate One*
☐ Ind/Com ☐ Res/Park ☐ Agriculture
Soil Texture *(Check One)* ☐ Coarse ☐ Fine

☐ Sewer Use ☐ Sanitary ☐ Storm
Region *Indicate One*

☐ 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 ☐ 1 Business Day

OR Date Required (Rush Surcharges May Apply):

Please provide prior notification for rush TAT
**TAT is exclusive of weekends and statutory holidays*

Project Information:

Project: 64153.50
Site Location:
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	Metals and Inorganics	Metal Scan	Hydride Forming Metals	Client Custom Metals	ORPs: ☐B-HWS ☐Cl ☐CN ☐Cr⁶⁺ ☐EC ☐FOC ☐NO_3/NO_2 ☐Total N ☐Hg ☐pH ☐SAR	Nutrients: ☐TP ☐NH_3 ☐TKN ☐NO_3 ☐NO_2 ☐NO_3/NO_2	Volatiles: ☐VOC ☒BTEX ☐THM	CCME Fractions 1 to 4	ABNs	PAHs	Chlorophenols	PCBs	Organochlorine Pesticides	TCLP Metals/Inorganics	Sewer Use	VOCs
BH17(SA-2	24/11/17		3	S		X						X	X		X			X		
BH17-2SA-1	24/11/17		3	S		X						X	X		X			X		
BH17-3SA-2	24/11/17		3	S		X						X	X		X			X		
BH17-4SA-2	"		"	"		X						X	X		X			X		
BH17-5SA-1	"		"	"		X						X	X		X			X		
BH17-6SA-2	23/11/17		"	"		X							X							X
BH17-7SA-1	23/11/17		3	"		X							X							X
BH17-8 SA-1	23/11/17		3	"		X							X							X
BH17-8 SA-8	23/11/17		3	"									X							X
BH17-10B SA-8	23/11/17		3	"									X							X
BH17-10B SA-1	23/11/17		3	"		X							X							X

* EXTRACT ASAP - SHORT HOLD TIME

Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time
K. Rispoli K. RISPOLI	5/12/17		Shorumin Dec 6/17	8:45am	
Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time

Page ____ of ____

Nº: T 018599

AGAT Laboratories

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CANADA L4Z 1Y2
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http://www.agatlabs.com

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS
32 STEACIE DRIVE
OTTAWA, ON K2K 2A9
(613) 836-1422

ATTENTION TO: Nicole Soucy

PROJECT: 64153.50

AGAT WORK ORDER: 17T297234

TRACE ORGANICS REVIEWED BY: Neli Popnikolova, Senior Chemist

WATER ANALYSIS REVIEWED BY: Milithza Silva, Analytical Supervisor (M.Sc. in Analytical Chemistry)

DATE REPORTED: Dec 28, 2017

PAGES (INCLUDING COVER): 17

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.

AGAT Laboratories

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http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 17T297234

PROJECT: 64153.50

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Nicole Soucy

SAMPLING SITE:Kizell Lands

SAMPLED BY:

O. Reg. 153(511) - OC Pesticides (Water)

DATE RECEIVED: 2017-12-20

DATE REPORTED: 2017-12-27

		SAMPLE DESCRIPTION:		BH17-3	BH17-5
		SAMPLE TYPE:		Water	Water
		DATE SAMPLED:		2017-12-19	2017-12-19
Parameter	Unit	G / S	RDL	8990125	8990134
Gamma-Hexachlorocyclohexane	µg/L	0.01	0.01	<0.01	<0.01
Heptachlor	µg/L	0.01	0.01	<0.01	<0.01
Aldrin	µg/L	0.01	0.01	<0.01	<0.01
Heptachlor Epoxide	µg/L	0.01	0.01	<0.01	<0.01
Endosulfan	µg/L	0.05	0.05	<0.05	<0.05
Chlordane	µg/L	0.06	0.04	<0.04	<0.04
DDE	µg/L	10	0.01	<0.01	<0.01
DDD	µg/L	1.8	0.05	<0.05	<0.05
DDT	µg/L	0.05	0.04	<0.04	<0.04
Dieldrin	µg/L	0.05	0.02	<0.02	<0.02
Endrin	µg/L	0.05	0.05	<0.05	<0.05
Methoxychlor	µg/L	0.05	0.04	<0.04	<0.04
Hexachlorobenzene	ug/L	0.01	0.01	<0.01	<0.01
Hexachlorobutadiene	ug/L	0.01	0.01	<0.01	<0.01
Hexachloroethane	ug/L	0.01	0.01	<0.01	<0.01
Surrogate	**Unit**	**Acceptable Limits**			
TCMX	%	50-140		65	67
Decachlorobiphenyl	%	60-140		70	74

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Ground Water - All Types of Property Uses
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.

8990125-8990134 Note: DDT applies to the total of op'DDT and pp'DDT, DDD applies to the total of op'DDD and pp'DDD and DDE applies to the total of op'DDE and pp'DDE. Endosulfan applies to the total of Endosulfan I and Endosulfan II.
Chlordane applies to the total of Alpha-Chlordane and Gamma-Chlordane.

Certified By: N Popnikolof

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 17T297234

PROJECT: 64153.50

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Nicole Soucy

SAMPLING SITE:Kizell Lands

SAMPLED BY:

O. Reg. 153(511) - PAHs (Water)

DATE RECEIVED: 2017-12-20

DATE REPORTED: 2017-12-28

		SAMPLE DESCRIPTION:		BH17-3	BH17-5
		SAMPLE TYPE:		Water	Water
		DATE SAMPLED:		2017-12-19	2017-12-19
Parameter	**Unit**	**G / S**	**RDL**	**8990125**	**8990134**
Naphthalene	µg/L	7	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	0.1	0.10	<0.10	<0.10
Anthracene	µg/L	0.1	0.10	<0.10	<0.10
Fluoranthene	µg/L	0.4	0.20	<0.20	<0.20
Pyrene	µg/L	0.2	0.20	<0.20	<0.20
Benz(a)anthracene	µg/L	0.2	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	2	0.20	<0.20	<0.20
Surrogate	**Unit**	**Acceptable Limits**			
Chrysene-d12	%	50-140		90	95

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Ground Water - All Types of Property Uses
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.

8990125-8990134 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.

Certified By: N Popowich

AGAT Laboratories

5835 COOPERS AVENUE
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Certificate of Analysis

AGAT WORK ORDER: 17T297234

PROJECT: 64153.50

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Nicole Soucy

SAMPLING SITE:Kizell Lands

SAMPLED BY:

O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Water)

DATE RECEIVED: 2017-12-20

DATE REPORTED: 2017-12-27

		SAMPLE DESCRIPTION:		BH17-6	BH17-8
		SAMPLE TYPE:		Water	Water
		DATE SAMPLED:		2017-12-19	2017-12-19
Parameter	**Unit**	**G / S**	**RDL**	**8990137**	**8990142**
F1 (C6 to C10)	µg/L	420	25	<25	<25
F1 (C6 to C10) minus BTEX	µg/L	420	25	<25	<25
F2 (C10 to C16)	µg/L	150	100	<100	<100
F3 (C16 to C34)	µg/L	500	100	<100	<100
F4 (C34 to C50)	µg/L	500	100	<100	<100
Gravimetric Heavy Hydrocarbons	µg/L	500	500	NA	NA
Surrogate	**Unit**	**Acceptable Limits**			
Terphenyl	%	60-140		83	86

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Ground Water - All Types of Property Uses
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.

8990137-8990142 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.

Certified By: N Popowich

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Certificate of Analysis

AGAT WORK ORDER: 17T297234

PROJECT: 64153.50

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Nicole Soucy

SAMPLING SITE:Kizell Lands

SAMPLED BY:

O. Reg. 153(511) - PHCs F1 - F4 (Water)

DATE RECEIVED: 2017-12-20

DATE REPORTED: 2017-12-27

		SAMPLE DESCRIPTION:		BH17-103
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2017-12-19
Parameter	**Unit**	**G / S**	**RDL**	**8990148**
Benzene	µg/L	0.5	0.20	<0.20
Toluene	µg/L	0.8	0.20	<0.20
Ethylbenzene	µg/L	0.5	0.10	<0.10
Xylene Mixture	µg/L	72	0.20	<0.20
F1 (C6 to C10)	µg/L	420	25	<25
F1 (C6 to C10) minus BTEX	µg/L	420	25	<25
F2 (C10 to C16)	µg/L	150	100	<100
F3 (C16 to C34)	µg/L	500	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		81

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Ground Water - All Types of Property Uses
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.

8990148 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 153/04, results are considered valid without determining the PAH contribution if not requested by the client.
NA = Not Applicable

Certified By: N Popowich

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Certificate of Analysis

AGAT WORK ORDER: 17T297234

PROJECT: 64153.50

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Nicole Soucy

SAMPLING SITE:Kizell Lands

SAMPLED BY:

O. Reg. 153(511) - PHCs F1 - F4 (with PAHs) (Water)

DATE RECEIVED: 2017-12-20 **DATE REPORTED: 2017-12-27**

		SAMPLE DESCRIPTION:		BH17-3	BH17-5
		SAMPLE TYPE:		Water	Water
		DATE SAMPLED:		2017-12-19	2017-12-19
Parameter	**Unit**	**G / S**	**RDL**	**8990125**	**8990134**
Benzene	µg/L	0.5	0.20	<0.20	<0.20
Toluene	µg/L	0.8	0.20	<0.20	<0.20
Ethylbenzene	µg/L	0.5	0.10	<0.10	<0.10
Xylene Mixture	µg/L	72	0.20	<0.20	<0.20
F1 (C6 to C10)	µg/L	420	25	<25	<25
F1 (C6 to C10) minus BTEX	µg/L	420	25	<25	<25
F2 (C10 to C16)	µg/L	150	100	<100	<100
F2 (C10 to C16) minus Naphthalene	µg/L		100	<100	<100
F3 (C16 to C34)	µg/L	500	100	<100	<100
F3 (C16 to C34) minus PAHs	µg/L		100	<100	<100
F4 (C34 to C50)	µg/L	500	100	<100	<100
Gravimetric Heavy Hydrocarbons	µg/L	500	500	NA	NA
Surrogate	**Unit**	**Acceptable Limits**			
Terphenyl	%	60-140		83	79

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Ground Water - All Types of Property Uses
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.

8990125-8990134 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.

Certified By: N Popowich

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Certificate of Analysis

AGAT WORK ORDER: 17T297234

PROJECT: 64153.50

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Nicole Soucy

SAMPLING SITE:Kizell Lands

SAMPLED BY:

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2017-12-20

DATE REPORTED: 2017-12-28

		SAMPLE DESCRIPTION:		BH17-6	BH17-8
		SAMPLE TYPE:		Water	Water
		DATE SAMPLED:		2017-12-19	2017-12-19
Parameter	Unit	G / S	RDL	8990137	8990142
Dichlorodifluoromethane	µg/L	590	0.20	<0.20	5.6
Vinyl Chloride	µg/L	0.5	0.17	<0.17	<0.17
Bromomethane	µg/L	0.89	0.20	<0.20	<0.20
Trichlorofluoromethane	µg/L	150	0.40	<0.40	<0.40
Acetone	µg/L	2700	1.0	<1.0	<1.0
1,1-Dichloroethylene	µg/L	0.5	0.30	<0.30	<0.30
Methylene Chloride	µg/L	5	0.30	<0.30	<0.30
trans- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20	<0.20
Methyl tert-butyl ether	µg/L	15	0.20	<0.20	<0.20
1,1-Dichloroethane	µg/L	0.5	0.30	<0.30	<0.30
Methyl Ethyl Ketone	µg/L	400	1.0	<1.0	<1.0
cis- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20	<0.20
Chloroform	µg/L	2	0.20	<0.20	<0.20
1,2-Dichloroethane	µg/L	0.5	0.20	<0.20	<0.20
1,1,1-Trichloroethane	µg/L	0.5	0.30	<0.30	<0.30
Carbon Tetrachloride	µg/L	0.2	0.20	<0.20	<0.20
Benzene	µg/L	0.5	0.20	<0.20	<0.20
1,2-Dichloropropane	µg/L	0.5	0.20	<0.20	<0.20
Trichloroethylene	µg/L	0.5	0.20	<0.20	<0.20
Bromodichloromethane	µg/L	2	0.20	<0.20	<0.20
Methyl Isobutyl Ketone	µg/L	640	1.0	<1.0	<1.0
1,1,2-Trichloroethane	µg/L	0.5	0.20	<0.20	<0.20
Toluene	µg/L	0.8	0.20	<0.20	<0.20
Dibromochloromethane	µg/L	2	0.10	<0.10	<0.10
Ethylene Dibromide	µg/L	0.2	0.10	<0.10	<0.10
Tetrachloroethylene	µg/L	0.5	0.20	<0.20	<0.20
1,1,1,2-Tetrachloroethane	µg/L	1.1	0.10	<0.10	<0.10
Chlorobenzene	µg/L	0.5	0.10	<0.10	<0.10
Ethylbenzene	µg/L	0.5	0.10	<0.10	<0.10
m & p-Xylene	µg/L		0.20	<0.20	<0.20

Certified By: N Popnikolof

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AGAT WORK ORDER: 17T297234

PROJECT: 64153.50

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Nicole Soucy

SAMPLING SITE:Kizell Lands

SAMPLED BY:

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2017-12-20

DATE REPORTED: 2017-12-28

		SAMPLE DESCRIPTION:		BH17-6	BH17-8
		SAMPLE TYPE:		Water	Water
		DATE SAMPLED:		2017-12-19	2017-12-19
Parameter	**Unit**	**G / S**	**RDL**	**8990137**	**8990142**
Bromoform	µg/L	5	0.10	<0.10	<0.10
Styrene	µg/L	0.5	0.10	<0.10	<0.10
1,1,2,2-Tetrachloroethane	µg/L	0.5	0.10	<0.10	<0.10
o-Xylene	µg/L		0.10	<0.10	<0.10
1,3-Dichlorobenzene	µg/L	0.5	0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	0.5	0.10	<0.10	<0.10
1,2-Dichlorobenzene	µg/L	0.5	0.10	<0.10	<0.10
1,3-Dichloropropene	µg/L	0.5	0.30	<0.30	<0.30
Xylene Mixture	µg/L	72	0.20	<0.20	<0.20
n-Hexane	µg/L	5	0.20	<0.20	<0.20
Surrogate	**Unit**	**Acceptable Limits**			
Toluene-d8	% Recovery	50-140		91	84
4-Bromofluorobenzene	% Recovery	50-140		110	103

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Ground Water - All Types of Property Uses
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.

Certified By: N Popnikolof

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AGAT WORK ORDER: 17T297234

PROJECT: 64153.50

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Nicole Soucy

SAMPLING SITE:Kizell Lands

SAMPLED BY:

O. Reg. 153(511) - All Metals (Water)

DATE RECEIVED: 2017-12-20

DATE REPORTED: 2017-12-27

		SAMPLE DESCRIPTION:		BH17-3	BH17-5	BH17-6	BH17-8	BH17-103
		SAMPLE TYPE:		Water	Water	Water	Water	Water
		DATE SAMPLED:		2017-12-19	2017-12-19	2017-12-19	2017-12-19	2017-12-19
Parameter	Unit	G / S	RDL	8990125	8990134	8990137	8990142	8990148
Antimony	µg/L	1.5	1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Arsenic	µg/L	13	1.0	1.0	<1.0	1.2	2.5	1.1
Barium	µg/L	610	2.0	123	97.7	91.5	108	120
Beryllium	µg/L	0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Boron	µg/L	1700	10.0	44.0	31.0	18.4	21.4	45.5
Cadmium	µg/L	0.5	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	µg/L	11	2.0	5.5	4.5	5.3	6.7	8.8
Cobalt	µg/L	3.8	0.5	1.0	<0.5	<0.5	2.6	1.0
Copper	µg/L	5	1.0	1.7	2.1	1.5	<1.0	1.7
Lead	µg/L	1.9	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Molybdenum	µg/L	23	0.5	1.0	2.8	1.9	6.2	0.9
Nickel	µg/L	14	1.0	2.5	1.9	<1.0	2.1	3.2
Selenium	µg/L	5	1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Silver	µg/L	0.3	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/L	0.5	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Uranium	µg/L	8.9	0.5	0.6	4.3	0.7	1.5	0.6
Vanadium	µg/L	3.9	0.4	1.9	0.8	2.1	3.4	2.9
Zinc	µg/L	160	5.0	<5.0	7.2	<5.0	<5.0	<5.0
Mercury	µg/L	0.1	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Chromium VI	µg/L	25	5	<5	<5	<5	<5	<5

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Ground Water - All Types of Property Uses
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.

Certified By: Militsa O. Silva

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Quality Assurance

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

AGAT WORK ORDER: 17T297234

PROJECT: 64153.50

ATTENTION TO: Nicole Soucy

SAMPLING SITE:Kizell Lands

SAMPLED BY:

Trace Organics Analysis

RPT Date:			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 (with PAHs) (Water)															
Benzene	8987679		< 0.20	< 0.20	NA	< 0.20	127%	50%	140%	109%	60%	130%	117%	50%	140%
Toluene	8987679		< 0.20	< 0.20	NA	< 0.20	118%	50%	140%	104%	60%	130%	128%	50%	140%
Ethylbenzene	8987679		< 0.10	< 0.10	NA	< 0.10	107%	50%	140%	97%	60%	130%	121%	50%	140%
F1 (C6 to C10)	8987679		< 25	< 25	NA	< 25	82%	60%	140%	86%	60%	140%	108%	60%	140%
F2 (C10 to C16)		TW	< 100	< 100	NA	< 100	103%	60%	140%	60%	60%	140%	74%	60%	140%
F3 (C16 to C34)		TW	< 100	< 100	NA	< 100	106%	60%	140%	85%	60%	140%	92%	60%	140%
F4 (C34 to C50)		TW	< 100	< 100	NA	< 100	93%	60%	140%	99%	60%	140%	77%	60%	140%
O. Reg. 153(511) - PAHs (Water)															
Naphthalene		TW	< 0.20	< 0.20	NA	< 0.20	93%	50%	140%	134%	50%	140%	129%	50%	140%
Acenaphthylene		TW	< 0.20	< 0.20	NA	< 0.20	105%	50%	140%	115%	50%	140%	120%	50%	140%
Acenaphthene		TW	< 0.20	< 0.20	NA	< 0.20	116%	50%	140%	134%	50%	140%	130%	50%	140%
Fluorene		TW	< 0.20	< 0.20	NA	< 0.20	121%	50%	140%	128%	50%	140%	133%	50%	140%
Phenanthrene		TW	< 0.10	< 0.10	NA	< 0.10	120%	50%	140%	129%	50%	140%	128%	50%	140%
Anthracene		TW	< 0.10	< 0.10	NA	< 0.10	121%	50%	140%	117%	50%	140%	132%	50%	140%
Fluoranthene		TW	< 0.20	< 0.20	NA	< 0.20	131%	50%	140%	107%	50%	140%	134%	50%	140%
Pyrene		TW	< 0.20	< 0.20	NA	< 0.20	124%	50%	140%	115%	50%	140%	128%	50%	140%
Benz(a)anthracene		TW	< 0.20	< 0.20	NA	< 0.20	122%	50%	140%	127%	50%	140%	107%	50%	140%
Chrysene		TW	< 0.10	< 0.10	NA	< 0.10	128%	50%	140%	118%	50%	140%	127%	50%	140%
Benzo(b)fluoranthene		TW	< 0.10	< 0.10	NA	< 0.10	88%	50%	140%	133%	50%	140%	118%	50%	140%
Benzo(k)fluoranthene		TW	< 0.10	< 0.10	NA	< 0.10	131%	50%	140%	106%	50%	140%	120%	50%	140%
Benzo(a)pyrene		TW	< 0.01	< 0.01	NA	< 0.01	119%	50%	140%	120%	50%	140%	128%	50%	140%
Indeno(1,2,3-cd)pyrene		TW	< 0.20	< 0.20	NA	< 0.20	108%	50%	140%	80%	50%	140%	92%	50%	140%
Dibenz(a,h)anthracene		TW	< 0.20	< 0.20	NA	< 0.20	104%	50%	140%	76%	50%	140%	85%	50%	140%
Benzo(g,h,i)perylene		TW	< 0.20	< 0.20	NA	< 0.20	97%	50%	140%	89%	50%	140%	102%	50%	140%
2-and 1-methyl Naphthalene		TW	< 0.20	< 0.20	NA	< 0.20	122%	50%	140%	134%	50%	140%	135%	50%	140%
O. Reg. 153(511) - OC Pesticides (Water)															
Gamma-Hexachlorocyclohexane		TW	< 0.01	< 0.01	NA	< 0.01	85%	50%	140%	88%	50%	140%	93%	50%	140%
Heptachlor		TW	< 0.01	< 0.01	NA	< 0.01	99%	50%	140%	112%	50%	140%	112%	50%	140%
Aldrin		TW	< 0.01	< 0.01	NA	< 0.01	82%	50%	140%	85%	50%	140%	95%	50%	140%
Heptachlor Epoxide		TW	< 0.01	< 0.01	NA	< 0.01	84%	50%	140%	111%	50%	140%	109%	50%	140%
Endosulfan		TW	< 0.05	< 0.05	NA	< 0.05	78%	50%	140%	102%	50%	140%	96%	50%	140%
Chlordane		TW	< 0.04	< 0.04	NA	< 0.04	81%	50%	140%	109%	50%	140%	113%	50%	140%
DDE		TW	< 0.01	< 0.01	NA	< 0.01	81%	50%	140%	107%	50%	140%	103%	50%	140%
DDD		TW	< 0.05	< 0.05	NA	< 0.05	85%	50%	140%	109%	50%	140%	95%	50%	140%
DDT		TW	< 0.04	< 0.04	NA	< 0.04	93%	50%	140%	111%	50%	140%	106%	50%	140%
Dieldrin		TW	< 0.02	< 0.02	NA	< 0.02	81%	50%	140%	116%	50%	140%	101%	50%	140%
Endrin		TW	< 0.05	< 0.05	NA	< 0.05	88%	50%	140%	117%	50%	140%	106%	50%	140%
Methoxychlor		TW	< 0.04	< 0.04	NA	< 0.04	90%	50%	140%	96%	50%	140%	112%	50%	140%

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Quality Assurance

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

AGAT WORK ORDER: 17T297234

PROJECT: 64153.50

ATTENTION TO: Nicole Soucy

SAMPLING SITE:Kizell Lands

SAMPLED BY:

Trace Organics Analysis (Continued)

RPT Date:			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
Hexachlorobenzene		TW	< 0.01	< 0.01	NA	< 0.01	87%	50%	140%	78%	50%	140%	82%	50%	140%
Hexachlorobutadiene		TW	< 0.01	< 0.01	NA	< 0.01	103%	50%	140%	71%	50%	140%	71%	50%	140%
Hexachloroethane		TW	< 0.01	< 0.01	NA	< 0.01	95%	50%	140%	78%	50%	140%	74%	50%	140%
O. Reg. 153(511) - VOCs (Water)															
Dichlorodifluoromethane	8990142	8990142	5.6	7.1	23.6%	< 0.20	86%	50%	140%	95%	50%	140%	106%	50%	140%
Vinyl Chloride	8990142	8990142	< 0.17	< 0.17	NA	< 0.17	104%	50%	140%	119%	50%	140%	107%	50%	140%
Bromomethane	8990142	8990142	< 0.20	< 0.20	NA	< 0.20	92%	50%	140%	119%	50%	140%	125%	50%	140%
Trichlorofluoromethane	8990142	8990142	< 0.40	< 0.40	NA	< 0.40	98%	50%	140%	103%	50%	140%	119%	50%	140%
Acetone	8990142	8990142	< 1.0	< 1.0	NA	< 1.0	130%	50%	140%	129%	50%	140%	129%	50%	140%
1,1-Dichloroethylene	8990142	8990142	< 0.30	< 0.30	NA	< 0.30	116%	50%	140%	128%	60%	130%	123%	50%	140%
Methylene Chloride	8990142	8990142	< 0.30	< 0.30	NA	< 0.30	112%	50%	140%	100%	60%	130%	121%	50%	140%
trans- 1,2-Dichloroethylene	8990142	8990142	< 0.20	< 0.20	NA	< 0.20	106%	50%	140%	128%	60%	130%	115%	50%	140%
Methyl tert-butyl ether	8990142	8990142	< 0.20	< 0.20	NA	< 0.20	71%	50%	140%	121%	60%	130%	119%	50%	140%
1,1-Dichloroethane	8990142	8990142	< 0.30	< 0.30	NA	< 0.30	116%	50%	140%	115%	60%	130%	114%	50%	140%
Methyl Ethyl Ketone	8990142	8990142	< 1.0	< 1.0	NA	< 1.0	114%	50%	140%	115%	50%	140%	95%	50%	140%
cis- 1,2-Dichloroethylene	8990142	8990142	< 0.20	< 0.20	NA	< 0.20	112%	50%	140%	103%	60%	130%	100%	50%	140%
Chloroform	8990142	8990142	< 0.20	< 0.20	NA	< 0.20	109%	50%	140%	99%	60%	130%	116%	50%	140%
1,2-Dichloroethane	8990142	8990142	< 0.20	< 0.20	NA	< 0.20	99%	50%	140%	115%	60%	130%	114%	50%	140%
1,1,1-Trichloroethane	8990142	8990142	< 0.30	< 0.30	NA	< 0.30	108%	50%	140%	114%	60%	130%	118%	50%	140%
Carbon Tetrachloride	8990142	8990142	< 0.20	< 0.20	NA	< 0.20	99%	50%	140%	108%	60%	130%	111%	50%	140%
Benzene	8990142	8990142	< 0.20	< 0.20	NA	< 0.20	92%	50%	140%	93%	60%	130%	87%	50%	140%
1,2-Dichloropropane	8990142	8990142	< 0.20	< 0.20	NA	< 0.20	85%	50%	140%	96%	60%	130%	88%	50%	140%
Trichloroethylene	8990142	8990142	< 0.20	< 0.20	NA	< 0.20	112%	50%	140%	128%	60%	130%	123%	50%	140%
Bromodichloromethane	8990142	8990142	< 0.20	< 0.20	NA	< 0.20	112%	50%	140%	128%	60%	130%	119%	50%	140%
Methyl Isobutyl Ketone	8990142	8990142	< 1.0	< 1.0	NA	< 1.0	110%	50%	140%	125%	50%	140%	123%	50%	140%
1,1,2-Trichloroethane	8990142	8990142	< 0.20	< 0.20	NA	< 0.20	115%	50%	140%	108%	60%	130%	130%	50%	140%
Toluene	8990142	8990142	< 0.20	< 0.20	NA	< 0.20	107%	50%	140%	100%	60%	130%	115%	50%	140%
Dibromochloromethane	8990142	8990142	< 0.10	< 0.10	NA	< 0.10	105%	50%	140%	117%	60%	130%	118%	50%	140%
Ethylene Dibromide	8990142	8990142	< 0.10	< 0.10	NA	< 0.10	113%	50%	140%	119%	60%	130%	128%	50%	140%
Tetrachloroethylene	8990142	8990142	< 0.20	< 0.20	NA	< 0.20	126%	50%	140%	118%	60%	130%	125%	50%	140%
1,1,1,2-Tetrachloroethane	8990142	8990142	< 0.10	< 0.10	NA	< 0.10	99%	50%	140%	86%	60%	130%	91%	50%	140%
Chlorobenzene	8990142	8990142	< 0.10	< 0.10	NA	< 0.10	127%	50%	140%	117%	60%	130%	112%	50%	140%
Ethylbenzene	8990142	8990142	< 0.10	< 0.10	NA	< 0.10	99%	50%	140%	118%	60%	130%	113%	50%	140%
m & p-Xylene	8990142	8990142	< 0.20	< 0.20	NA	< 0.20	105%	50%	140%	123%	60%	130%	119%	50%	140%
Bromoform	8990142	8990142	< 0.10	< 0.10	NA	< 0.10	116%	50%	140%	118%	60%	130%	117%	50%	140%
Styrene	8990142	8990142	< 0.10	< 0.10	NA	< 0.10	75%	50%	140%	113%	60%	130%	106%	50%	140%
1,1,2,2-Tetrachloroethane	8990142	8990142	< 0.10	< 0.10	NA	< 0.10	127%	50%	140%	118%	60%	130%	125%	50%	140%
o-Xylene	8990142	8990142	< 0.10	< 0.10	NA	< 0.10	108%	50%	140%	129%	60%	130%	128%	50%	140%
1,3-Dichlorobenzene	8990142	8990142	< 0.10	< 0.10	NA	< 0.10	118%	50%	140%	93%	60%	130%	122%	50%	140%

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Quality Assurance

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

AGAT WORK ORDER: 17T297234

PROJECT: 64153.50

ATTENTION TO: Nicole Soucy

SAMPLING SITE:Kizell Lands

SAMPLED BY:

Trace Organics Analysis (Continued)

RPT Date:			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
1,4-Dichlorobenzene	8990142	8990142	< 0.10	< 0.10	NA	< 0.10	102%	50%	140%	99%	60%	130%	121%	50%	140%
1,2-Dichlorobenzene	8990142	8990142	< 0.10	< 0.10	NA	< 0.10	107%	50%	140%	121%	60%	130%	118%	50%	140%
1,3-Dichloropropene	8990142	8990142	< 0.30	< 0.30	NA	< 0.30	94%	50%	140%	86%	60%	130%	84%	50%	140%
n-Hexane	8990142	8990142	< 0.20	< 0.20	NA	< 0.20	87%	50%	140%	105%	60%	130%	103%	50%	140%

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: N Popnikolof

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Quality Assurance

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

AGAT WORK ORDER: 17T297234

PROJECT: 64153.50

ATTENTION TO: Nicole Soucy

SAMPLING SITE:Kizell Lands

SAMPLED BY:

Water Analysis

RPT Date:			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) - All Metals (Water)															
Antimony	8987151		<1.0	<1.0	NA	< 1.0	101%	70%	130%	103%	80%	120%	104%	70%	130%
Arsenic	8987151		1.4	1.4	NA	< 1.0	95%	70%	130%	99%	80%	120%	102%	70%	130%
Barium	8987151		144	145	0.7%	< 2.0	97%	70%	130%	102%	80%	120%	96%	70%	130%
Beryllium	8987151		<0.5	<0.5	NA	< 0.5	105%	70%	130%	110%	80%	120%	116%	70%	130%
Boron	8987151		60.1	63.7	5.8%	< 10.0	102%	70%	130%	109%	80%	120%	105%	70%	130%
Cadmium	8987151		<0.2	<0.2	NA	< 0.2	101%	70%	130%	102%	80%	120%	105%	70%	130%
Chromium	8987151		6.7	6.6	NA	< 2.0	96%	70%	130%	100%	80%	120%	100%	70%	130%
Cobalt	8987151		1.7	1.7	NA	< 0.5	94%	70%	130%	101%	80%	120%	98%	70%	130%
Copper	8987151		1.4	1.4	NA	< 1.0	95%	70%	130%	102%	80%	120%	97%	70%	130%
Lead	8987151		0.8	0.8	NA	< 0.5	97%	70%	130%	102%	80%	120%	98%	70%	130%
Molybdenum	8987151		<0.5	<0.5	NA	< 0.5	96%	70%	130%	97%	80%	120%	102%	70%	130%
Nickel	8987151		11.5	11.6	0.9%	< 1.0	99%	70%	130%	102%	80%	120%	94%	70%	130%
Selenium	8987151		1.6	<1.0	NA	< 1.0	99%	70%	130%	103%	80%	120%	104%	70%	130%
Silver	8987151		<0.2	<0.2	NA	< 0.2	101%	70%	130%	110%	80%	120%	113%	70%	130%
Thallium	8987151		<0.3	<0.3	NA	< 0.3	104%	70%	130%	107%	80%	120%	104%	70%	130%
Uranium	8987151		<0.5	<0.5	NA	< 0.5	101%	70%	130%	101%	80%	120%	101%	70%	130%
Vanadium	8987151		0.4	0.5	NA	< 0.4	90%	70%	130%	96%	80%	120%	98%	70%	130%
Zinc	8987151		<5.0	<5.0	NA	< 5.0	94%	70%	130%	103%	80%	120%	101%	70%	130%
Mercury	8990125	8990125	<0.02	<0.02	NA	< 0.02	103%	70%	130%	99%	80%	120%	97%	70%	130%
Chromium VI	8987838		<5	<5	NA	< 5	103%	70%	130%	100%	80%	120%	102%	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: Militiza O. Silva

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Method Summary

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

AGAT WORK ORDER: 17T297234

PROJECT: 64153.50

ATTENTION TO: Nicole Soucy

SAMPLING SITE:Kizell Lands

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Gamma-Hexachlorocyclohexane	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Heptachlor	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Aldrin	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Heptachlor Epoxide	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Endosulfan	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Chlordane	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
DDE	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
DDD	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
DDT	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Dieldrin	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Endrin	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Methoxychlor	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Hexachlorobenzene	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Hexachlorobutadiene	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Hexachloroethane	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
TCMX	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
Decachlorobiphenyl	ORG-91-5112	EPA SW-846 3510 & 8081	GC/ECD
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
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 to 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
Benzene	VOL-91-5010	MOE PHC-E3421	(P&T)GC/FID
Toluene	VOL-91-5010	MOE PHC-E3421	(P&T)GC/FID
Ethylbenzene	VOL-91-5010	MOE PHC-E3421	(P&T)GC/FID
Xylene Mixture	VOL-91-5010	MOE PHC-E3421	(P&T)GC/FID
F1 (C6 to 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

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Method Summary

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

AGAT WORK ORDER: 17T297234

PROJECT: 64153.50

ATTENTION TO: Nicole Soucy

SAMPLING SITE:Kizell Lands

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
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
Benzene	VOL-91-5010	MOE PHC E3421	(P&T)GC/MS
Toluene	VOL-91-5010	MOE PHC E3421	(P&T)GC/MS
Ethylbenzene	VOL-91-5010	MOE PHC E3421	(P&T)GC/MS
Xylene Mixture	VOL-91-5010	MOE PHC E3421	(P&T)GC/MS
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
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

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Method Summary

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

AGAT WORK ORDER: 17T297234

PROJECT: 64153.50

ATTENTION TO: Nicole Soucy

SAMPLING SITE:Kizell Lands

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
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
Mercury	MET-93-6100	EPA SW-846 7470 & 245.1	CVAAS
Chromium VI	INOR-93-6034	SM 3500-Cr B	SPECTROPHOTOMETER

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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 #: 17T297234

Cooler Quantity: 2

Arrival Temperatures: 8.8 | 8.7 | 8.8
7° | 6 | 6²

Custody Seal Intact: ☐ Yes ☐ No ☒ N/A

Notes: 24 37 53

Report Information:

Company: Gemtec
Contact: Nicole Soucy
Address: 32 Steacie Dr.

Phone: 613-836-1422 Fax:

Reports to be sent to:
1. Email: nicole.soucy@gemtec.ca
2. Email:

Project Information:

Project: 64153.50
Site Location: Kizell Lands
Sampled By:
AGAT Quote #: Price Sheet Rates 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 (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

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))	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: ☐ BTEX ☐ THM	PHCs F1 - F4	ABNs	PAHs	PCBs: ☐ Total ☐ Aroclors	Organochlorine Pesticides	TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	Sewer Use	Pesticides	VOCs
BH17-3	Dec 19/17		12	GW		Y	X					X	X	X		X					
BH17-5	↓		↓	↓		↓	X					X	X	X		X					
BH17-6							X					X	X								X
BH17-8							X					X	X								X
BH17-103							X					X	X								

Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time
Nicole Soucy	Dec 20/17	0800	Jeff Jones	20 Dec 17	0800
			Sima Z	17/12/21	920

Page _____ of _____

Nº: T 063239

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CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS
32 STEACIE DRIVE
OTTAWA, ON K2K 2A9
(613) 836-1422

ATTENTION TO: Nicole Soucy

PROJECT: 64153.50

AGAT WORK ORDER: 18Z312176

SOIL ANALYSIS REVIEWED BY: Amanjot Bhela, Inorganic Coordinator

TRACE ORGANICS REVIEWED BY: Neli Popnikolova, Senior Chemist

DATE REPORTED: Feb 26, 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.

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Certificate of Analysis

AGAT WORK ORDER: 18Z312176

PROJECT: 64153.50

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Nicole Soucy

SAMPLING SITE:Kizell Lands

SAMPLED BY:N.S.

O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2018-02-15

DATE REPORTED: 2018-02-23

		SAMPLE DESCRIPTION:		BH18-10 SA4	BH18-10 SA1	BH18-9 SA2
		SAMPLE TYPE:		Soil	Soil	Soil
		DATE SAMPLED:		2018-02-09	2018-02-09	2018-02-09
Parameter	Unit	G / S	RDL	9070980	9070982	9070983
Antimony	µg/g	1.3	0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	<1	1	1
Barium	µg/g	220	2	68	52	86
Beryllium	µg/g	2.5	0.5	<0.5	<0.5	<0.5
Boron	µg/g	36	5	<5	<5	<5
Boron (Hot Water Soluble)	µg/g	NA	0.10	<0.10	<0.10	<0.10
Cadmium	µg/g	1.2	0.5	<0.5	<0.5	<0.5
Chromium	µg/g	70	2	14	12	14
Cobalt	µg/g	21	0.5	5.3	5.5	6.0
Copper	µg/g	92	1	13	10	13
Lead	µg/g	120	1	3	4	3
Molybdenum	µg/g	2	0.5	1.2	<0.5	<0.5
Nickel	µg/g	82	1	9	9	11
Selenium	µg/g	1.5	0.4	<0.4	<0.4	<0.4
Silver	µg/g	0.5	0.2	<0.2	<0.2	<0.2
Thallium	µg/g	1	0.4	<0.4	<0.4	<0.4
Uranium	µg/g	2.5	0.5	<0.5	0.5	<0.5
Vanadium	µg/g	86	1	19	20	20
Zinc	µg/g	290	5	22	23	22
Chromium VI	µg/g	0.66	0.2	<0.2	<0.2	<0.2
Cyanide	µg/g	0.051	0.040	<0.040	<0.040	<0.040
Mercury	µg/g	0.27	0.10	<0.10	<0.10	<0.10
Electrical Conductivity	mS/cm	0.57	0.005	0.124	0.134	0.101
Sodium Adsorption Ratio	NA	2.4	NA	0.308	0.044	0.078
pH, 2:1 CaCl2 Extraction	pH Units		NA	7.92	7.26	7.60

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use
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.

9070980-9070983 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

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Certificate of Analysis

AGAT WORK ORDER: 18Z312176

PROJECT: 64153.50

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Nicole Soucy

SAMPLING SITE:Kizell Lands

SAMPLED BY:N.S.

O. Reg. 153(511) - OC Pesticides (Soil)

DATE RECEIVED: 2018-02-15

DATE REPORTED: 2018-02-22

		SAMPLE DESCRIPTION:		BH18-10 SA1	BH18-9 SA2
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2018-02-09	2018-02-09
Parameter	**Unit**	**G / S**	**RDL**	**9070982**	**9070983**
Hexachloroethane	µg/g	0.01	0.01	<0.01	<0.01
Gamma-Hexachlorocyclohexane	µg/g	0.01	0.005	<0.005	<0.005
Heptachlor	µg/g	0.05	0.005	<0.005	<0.005
Aldrin	µg/g	0.05	0.005	<0.005	<0.005
Heptachlor Epoxide	µg/g	0.05	0.005	<0.005	<0.005
Endosulfan	µg/g	0.04	0.005	<0.005	<0.005
Chlordane	µg/g	0.05	0.007	<0.007	<0.007
DDE	µg/g	0.05	0.007	<0.007	<0.007
DDD	µg/g	0.05	0.007	<0.007	<0.007
DDT	µg/g	1.4	0.007	<0.007	<0.007
Dieldrin	µg/g	0.05	0.005	<0.005	<0.005
Endrin	µg/g	0.04	0.005	<0.005	<0.005
Methoxychlor	µg/g	0.05	0.005	<0.005	<0.005
Hexachlorobenzene	µg/g	0.01	0.005	<0.005	<0.005
Hexachlorobutadiene	µg/g	0.01	0.01	<0.01	<0.01
Surrogate	**Unit**	**Acceptable Limits**			
TCMX	%	50-140		84	78
Decachlorobiphenyl	%	60-130		92	92

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use
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.

9070982-9070983 Results are based on the dry weight of the soil.
Note: DDT applies to the total of op'DDT and pp'DDT, DDD applies to the total of op'DDD and pp'DDD and DDE applies to the total of op'DDE and pp'DDE. Endosulfan applies to the total of Endosulfan I and Endosulfan II.
Chlordane applies to the total of Alpha-Chlordane and Gamma-Chlordane.

Certified By: N Popowich

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Certificate of Analysis

AGAT WORK ORDER: 18Z312176

PROJECT: 64153.50

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Nicole Soucy

SAMPLING SITE:Kizell Lands

SAMPLED BY:N.S.

O. Reg. 153(511) - PAHs (Soil)

DATE RECEIVED: 2018-02-15

DATE REPORTED: 2018-02-23

		SAMPLE DESCRIPTION:		BH18-10 SA1	BH18-9 SA2
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2018-02-09	2018-02-09
Parameter	**Unit**	**G / S**	**RDL**	**9070982**	**9070983**
Naphthalene	µg/g	0.09	0.05	<0.05	<0.05
Acenaphthylene	µg/g	0.093	0.05	<0.05	<0.05
Acenaphthene	µg/g	0.072	0.05	<0.05	<0.05
Fluorene	µg/g	0.12	0.05	<0.05	<0.05
Phenanthrene	µg/g	0.69	0.05	<0.05	<0.05
Anthracene	µg/g	0.16	0.05	<0.05	<0.05
Fluoranthene	µg/g	0.56	0.05	<0.05	<0.05
Pyrene	µg/g	1	0.05	<0.05	<0.05
Benz(a)anthracene	µg/g	0.36	0.05	<0.05	<0.05
Chrysene	µg/g	2.8	0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg/g	0.47	0.05	<0.05	<0.05
Benzo(k)fluoranthene	µg/g	0.48	0.05	<0.05	<0.05
Benzo(a)pyrene	µg/g	0.3	0.05	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.23	0.05	<0.05	<0.05
Dibenz(a,h)anthracene	µg/g	0.1	0.05	<0.05	<0.05
Benzo(g,h,i)perylene	µg/g	0.68	0.05	<0.05	<0.05
2-and 1-methyl Naphthalene	µg/g	0.59	0.05	<0.05	<0.05
Surrogate	**Unit**	**Acceptable Limits**			
Chrysene-d12	%	50-140		111	104

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use
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.

9070982-9070983 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: N Popowich

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Certificate of Analysis

AGAT WORK ORDER: 18Z312176

PROJECT: 64153.50

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Nicole Soucy

SAMPLING SITE:Kizell Lands

SAMPLED BY:N.S.

O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Soil)

DATE RECEIVED: 2018-02-15

DATE REPORTED: 2018-02-23

		SAMPLE DESCRIPTION:		BH18-10 SA4
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2018-02-09
Parameter	**Unit**	**G / S**	**RDL**	**9070980**
F1 (C6 to C10)	µg/g	25	5	<5
F1 (C6 to C10) minus BTEX	µg/g	25	5	<5
F2 (C10 to C16)	µg/g	10	10	<10
F3 (C16 to C34)	µg/g	240	50	<50
F4 (C34 to C50)	µg/g	120	50	<50
Gravimetric Heavy Hydrocarbons	µg/g	120	50	NA
Moisture Content	%		0.1	9.5
Surrogate	**Unit**	**Acceptable Limits**		
Terphenyl	%	60-140		67

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use
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.

9070980 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.

Certified By: N Popowich

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Certificate of Analysis

AGAT WORK ORDER: 18Z312176

PROJECT: 64153.50

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Nicole Soucy

SAMPLING SITE:Kizell Lands

SAMPLED BY:N.S.

O. Reg. 153(511) - PHCs F1 - F4 (with PAHs) (Soil)

DATE RECEIVED: 2018-02-15

DATE REPORTED: 2018-02-23

		SAMPLE DESCRIPTION:		BH18-10 SA1	BH18-9 SA2
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2018-02-09	2018-02-09
Parameter	**Unit**	**G / S**	**RDL**	**9070982**	**9070983**
Benzene	µg/g	0.02	0.02	<0.02	<0.02
Toluene	µg/g	0.2	0.08	<0.08	<0.08
Ethylbenzene	µg/g	0.05	0.05	<0.05	<0.05
Xylene Mixture	µg/g	0.05	0.05	<0.05	<0.05
F1 (C6 to C10)	µg/g	25	5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	25	5	<5	<5
F2 (C10 to C16)	µg/g	10	10	<10	<10
F2 (C10 to C16) minus Naphthalene	µg/g		10	<10	<10
F3 (C16 to C34)	µg/g	240	50	<50	<50
F3 (C16 to C34) minus PAHs	µg/g		50	<50	<50
F4 (C34 to C50)	µg/g	120	50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g	120	50	NA	NA
Moisture Content	%		0.1	11.0	9.9
Surrogate	**Unit**	**Acceptable Limits**			
Terphenyl	%	60-140		96	64

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use
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.

9070982-9070983 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.

Certified By: N Popnikolof

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Certificate of Analysis

AGAT WORK ORDER: 18Z312176

PROJECT: 64153.50

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Nicole Soucy

SAMPLING SITE:Kizell Lands

SAMPLED BY:N.S.

O. Reg. 153(511) - VOCs (Soil)

DATE RECEIVED: 2018-02-15

DATE REPORTED: 2018-02-23

		SAMPLE DESCRIPTION:		BH18-10 SA4
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2018-02-09
Parameter	Unit	G / S	RDL	9070980
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	0.25	0.05	<0.05
Acetone	ug/g	0.5	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	0.05	0.02	<0.02
Methyl Ethyl Ketone	ug/g	0.5	0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g	0.05	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	0.05	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	0.05	0.03	<0.03
Trichloroethylene	ug/g	0.05	0.03	<0.03
Bromodichloromethane	ug/g	0.05	0.05	<0.05
Methyl Isobutyl Ketone	ug/g	0.5	0.50	<0.50
1,1,2-Trichloroethane	ug/g	0.05	0.04	<0.04
Toluene	ug/g	0.2	0.02	<0.02
Dibromochloromethane	ug/g	0.05	0.05	<0.05
Ethylene Dibromide	ug/g	0.05	0.04	<0.04
Tetrachloroethylene	ug/g	0.05	0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g	0.05	0.04	<0.04
Chlorobenzene	ug/g	0.05	0.05	<0.05
Ethylbenzene	ug/g	0.05	0.05	<0.05
m & p-Xylene	ug/g		0.05	<0.05

Certified By: N Popowkolof

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 18Z312176

PROJECT: 64153.50

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Nicole Soucy

SAMPLING SITE:Kizell Lands

SAMPLED BY:N.S.

O. Reg. 153(511) - VOCs (Soil)

DATE RECEIVED: 2018-02-15 **DATE REPORTED: 2018-02-23**

		SAMPLE DESCRIPTION:		BH18-10 SA4
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2018-02-09
Parameter	**Unit**	**G / S**	**RDL**	**9070980**
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	<0.05
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	0.05	<0.05
1,3-Dichloropropene	µg/g	0.05	0.04	<0.04
n-Hexane	µg/g	0.05	0.05	<0.05
Surrogate	**Unit**	**Acceptable Limits**		
Toluene-d8	% Recovery	50-140		96
4-Bromofluorobenzene	% Recovery	50-140		79

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Soil - Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use
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.

9070980 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: N Popowich

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Quality Assurance

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PROJECT: 64153.50

ATTENTION TO: Nicole Soucy

SAMPLING SITE:Kizell Lands

SAMPLED BY:N.S.

Soil Analysis

RPT Date:			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	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) - Metals & Inorganics (Soil)															
Antimony	9070980	9070980	<0.8	<0.8	NA	< 0.8	115%	70%	130%	107%	80%	120%	101%	70%	130%
Arsenic	9070980	9070980	<1	1	NA	< 1	113%	70%	130%	106%	80%	120%	112%	70%	130%
Barium	9070980	9070980	68	67	1.5%	< 2	110%	70%	130%	99%	80%	120%	99%	70%	130%
Beryllium	9070980	9070980	<0.5	<0.5	NA	< 0.5	96%	70%	130%	104%	80%	120%	104%	70%	130%
Boron	9070980	9070980	<5	<5	NA	< 5	80%	70%	130%	106%	80%	120%	104%	70%	130%
Boron (Hot Water Soluble)	9070980	9070980	<0.10	<0.10	NA	< 0.10	80%	60%	140%	95%	70%	130%	92%	60%	140%
Cadmium	9070980	9070980	<0.5	<0.5	NA	< 0.5	108%	70%	130%	107%	80%	120%	115%	70%	130%
Chromium	9070980	9070980	14	15	6.9%	< 2	94%	70%	130%	105%	80%	120%	111%	70%	130%
Cobalt	9070980	9070980	5.3	5.5	3.7%	< 0.5	99%	70%	130%	101%	80%	120%	107%	70%	130%
Copper	9070980	9070980	13	13	0.0%	< 1	100%	70%	130%	103%	80%	120%	102%	70%	130%
Lead	9070980	9070980	3	3	NA	< 1	111%	70%	130%	92%	80%	120%	95%	70%	130%
Molybdenum	9070980	9070980	1.2	1.4	NA	< 0.5	102%	70%	130%	107%	80%	120%	120%	70%	130%
Nickel	9070980	9070980	9	9	0.0%	< 1	102%	70%	130%	108%	80%	120%	110%	70%	130%
Selenium	9070980	9070980	<0.4	<0.4	NA	< 0.4	104%	70%	130%	101%	80%	120%	109%	70%	130%
Silver	9070980	9070980	<0.2	<0.2	NA	< 0.2	81%	70%	130%	108%	80%	120%	101%	70%	130%
Thallium	9070980	9070980	<0.4	<0.4	NA	< 0.4	90%	70%	130%	103%	80%	120%	106%	70%	130%
Uranium	9070980	9070980	<0.5	<0.5	NA	< 0.5	88%	70%	130%	95%	80%	120%	112%	70%	130%
Vanadium	9070980	9070980	19	19	0.0%	< 1	93%	70%	130%	98%	80%	120%	95%	70%	130%
Zinc	9070980	9070980	22	21	NA	< 5	99%	70%	130%	103%	80%	120%	108%	70%	130%
Chromium VI	9078915		<0.2	<0.2	NA	< 0.2	72%	70%	130%	98%	80%	120%	99%	70%	130%
Cyanide	9075862		<0.040	<0.040	NA	< 0.040	103%	70%	130%	92%	80%	120%	98%	70%	130%
Mercury	9070980	9070980	<0.10	<0.10	NA	< 0.10	105%	70%	130%	94%	80%	120%	105%	70%	130%
Electrical Conductivity	9070980	9070980	0.124	0.131	5.5%	< 0.005	99%	90%	110%	NA			NA		
Sodium Adsorption Ratio	9070980	9070980	0.308	0.313	1.6%	NA	NA			NA			NA		
pH, 2:1 CaCl2 Extraction	9078915		7.37	7.31	0.8%	NA	100%	80%	120%	NA			NA		

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: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

AGAT WORK ORDER: 18Z312176

PROJECT: 64153.50

ATTENTION TO: Nicole Soucy

SAMPLING SITE:Kizell Lands

SAMPLED BY:N.S.

Trace Organics Analysis

RPT Date:			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)															
F2 (C10 to C16)	9070983	9070983	< 10	< 10	NA	< 10	97%	60%	130%	95%	80%	120%	90%	70%	130%
F3 (C16 to C34)	9070983	9070983	< 50	< 50	NA	< 50	103%	60%	130%	103%	80%	120%	96%	70%	130%
F4 (C34 to C50)	9070983	9070983	< 50	< 50	NA	< 50	90%	60%	130%	84%	80%	120%	81%	70%	130%
O. Reg. 153(511) - VOCs (Soil)															
Dichlorodifluoromethane	9077486		< 0.05	< 0.05	NA	< 0.05	88%	50%	140%	91%	50%	140%	105%	50%	140%
Vinyl Chloride	9077486		< 0.02	< 0.02	NA	< 0.02	118%	50%	140%	116%	50%	140%	90%	50%	140%
Bromomethane	9077486		< 0.05	< 0.05	NA	< 0.05	101%	50%	140%	97%	50%	140%	72%	50%	140%
Trichlorofluoromethane	9077486		< 0.05	< 0.05	NA	< 0.05	117%	50%	140%	111%	50%	140%	82%	50%	140%
Acetone	9077486		< 0.50	< 0.50	NA	< 0.50	95%	50%	140%	89%	50%	140%	91%	50%	140%
1,1-Dichloroethylene	9077486		< 0.05	< 0.05	NA	< 0.05	96%	50%	140%	105%	60%	130%	86%	50%	140%
Methylene Chloride	9077486		< 0.05	< 0.05	NA	< 0.05	79%	50%	140%	91%	60%	130%	83%	50%	140%
Trans- 1,2-Dichloroethylene	9077486		< 0.05	< 0.05	NA	< 0.05	89%	50%	140%	99%	60%	130%	86%	50%	140%
Methyl tert-butyl Ether	9077486		< 0.05	< 0.05	NA	< 0.05	101%	50%	140%	79%	60%	130%	71%	50%	140%
1,1-Dichloroethane	9077486		< 0.02	< 0.02	NA	< 0.02	102%	50%	140%	102%	60%	130%	85%	50%	140%
Methyl Ethyl Ketone	9077486		< 0.50	< 0.50	NA	< 0.50	83%	50%	140%	86%	50%	140%	98%	50%	140%
Cis- 1,2-Dichloroethylene	9077486		< 0.02	< 0.02	NA	< 0.02	90%	50%	140%	93%	60%	130%	82%	50%	140%
Chloroform	9077486		< 0.04	< 0.04	NA	< 0.04	94%	50%	140%	106%	60%	130%	89%	50%	140%
1,2-Dichloroethane	9077486		< 0.03	< 0.03	NA	< 0.03	104%	50%	140%	97%	60%	130%	94%	50%	140%
1,1,1-Trichloroethane	9077486		< 0.05	< 0.05	NA	< 0.05	101%	50%	140%	94%	60%	130%	79%	50%	140%
Carbon Tetrachloride	9077486		< 0.05	< 0.05	NA	< 0.05	101%	50%	140%	97%	60%	130%	99%	50%	140%
Benzene	9077486		< 0.02	< 0.02	NA	< 0.02	101%	50%	140%	99%	60%	130%	89%	50%	140%
1,2-Dichloropropane	9077486		< 0.03	< 0.03	NA	< 0.03	91%	50%	140%	99%	60%	130%	85%	50%	140%
Trichloroethylene	9077486		< 0.03	< 0.03	NA	< 0.03	94%	50%	140%	90%	60%	130%	83%	50%	140%
Bromodichloromethane	9077486		< 0.05	< 0.05	NA	< 0.05	90%	50%	140%	104%	60%	130%	83%	50%	140%
Methyl Isobutyl Ketone	9077486		< 0.50	< 0.50	NA	< 0.50	102%	50%	140%	85%	50%	140%	92%	50%	140%
1,1,2-Trichloroethane	9077486		< 0.04	< 0.04	NA	< 0.04	105%	50%	140%	92%	60%	130%	87%	50%	140%
Toluene	9077486		< 0.02	< 0.02	NA	< 0.02	97%	50%	140%	95%	60%	130%	71%	50%	140%
Dibromochloromethane	9077486		< 0.05	< 0.05	NA	< 0.05	85%	50%	140%	104%	60%	130%	83%	50%	140%
Ethylene Dibromide	9077486		< 0.04	< 0.04	NA	< 0.04	93%	50%	140%	95%	60%	130%	81%	50%	140%
Tetrachloroethylene	9077486		< 0.05	< 0.05	NA	< 0.05	99%	50%	140%	92%	60%	130%	71%	50%	140%
1,1,1,2-Tetrachloroethane	9077486		< 0.04	< 0.04	NA	< 0.04	88%	50%	140%	94%	60%	130%	77%	50%	140%
Chlorobenzene	9077486		< 0.05	< 0.05	NA	< 0.05	82%	50%	140%	99%	60%	130%	73%	50%	140%
Ethylbenzene	9077486		< 0.05	< 0.05	NA	< 0.05	100%	50%	140%	104%	60%	130%	97%	50%	140%
m & p-Xylene	9077486		< 0.05	< 0.05	NA	< 0.05	113%	50%	140%	118%	60%	130%	85%	50%	140%
Bromoform	9077486		< 0.05	< 0.05	NA	< 0.05	83%	50%	140%	105%	60%	130%	74%	50%	140%
Styrene	9077486		< 0.05	< 0.05	NA	< 0.05	81%	50%	140%	90%	60%	130%	72%	50%	140%
1,1,2,2-Tetrachloroethane	9077486		< 0.05	< 0.05	NA	< 0.05	90%	50%	140%	101%	60%	130%	91%	50%	140%
o-Xylene	9077486		< 0.05	< 0.05	NA	< 0.05	100%	50%	140%	99%	60%	130%	78%	50%	140%

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Quality Assurance

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS
AGAT WORK ORDER: 18Z312176
PROJECT: 64153.50
ATTENTION TO: Nicole Soucy
SAMPLING SITE:Kizell Lands
SAMPLED BY:N.S.

Trace Organics Analysis (Continued)

RPT Date:			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	9077486		< 0.05	< 0.05	NA	< 0.05	94%	50%	140%	96%	60%	130%	91%	50%	140%
1,4-Dichlorobenzene	9077486		< 0.05	< 0.05	NA	< 0.05	85%	50%	140%	100%	60%	130%	82%	50%	140%
1,2-Dichlorobenzene	9077486		< 0.05	< 0.05	NA	< 0.05	87%	50%	140%	99%	60%	130%	80%	50%	140%
1,3-Dichloropropene	9077486		< 0.04	< 0.04	NA	< 0.04	98%	50%	140%	102%	60%	130%	114%	50%	140%
n-Hexane	9077486		< 0.05	< 0.05	NA	< 0.05	84%	50%	140%	89%	60%	130%	88%	50%	140%
O. Reg. 153(511) - PHCs F1 - F4 (with PAHs) (Soil)															
Benzene	9076246		< 0.02	< 0.02	NA	< 0.02	97%	60%	130%	99%	60%	130%	109%	60%	130%
Toluene	9076246		< 0.08	< 0.08	NA	< 0.08	96%	60%	130%	102%	60%	130%	112%	60%	130%
Ethylbenzene	9076246		< 0.05	< 0.05	NA	< 0.05	96%	60%	130%	108%	60%	130%	116%	60%	130%
Xylene Mixture	9076246		< 0.05	< 0.05	NA	< 0.05	90%	60%	130%	97%	60%	130%	110%	60%	130%
F1 (C6 to C10)	9076246		< 5	< 5	NA	< 5	79%	60%	130%	91%	85%	115%	95%	70%	130%
O. Reg. 153(511) - PAHs (Soil)															
Naphthalene	9018617		< 0.05	< 0.05	NA	< 0.05	109%	50%	140%	104%	50%	140%	106%	50%	140%
Acenaphthylene	9018617		< 0.05	< 0.05	NA	< 0.05	116%	50%	140%	104%	50%	140%	94%	50%	140%
Acenaphthene	9018617		< 0.05	< 0.05	NA	< 0.05	102%	50%	140%	102%	50%	140%	95%	50%	140%
Fluorene	9018617		< 0.05	< 0.05	NA	< 0.05	110%	50%	140%	105%	50%	140%	110%	50%	140%
Phenanthrene	9018617		< 0.05	< 0.05	NA	< 0.05	105%	50%	140%	93%	50%	140%	109%	50%	140%
Anthracene	9018617		< 0.05	< 0.05	NA	< 0.05	95%	50%	140%	98%	50%	140%	105%	50%	140%
Fluoranthene	9018617		< 0.05	< 0.05	NA	< 0.05	101%	50%	140%	101%	50%	140%	110%	50%	140%
Pyrene	9018617		< 0.05	< 0.05	NA	< 0.05	98%	50%	140%	93%	50%	140%	115%	50%	140%
Benz(a)anthracene	9018617		< 0.05	< 0.05	NA	< 0.05	109%	50%	140%	81%	50%	140%	98%	50%	140%
Chrysene	9018617		< 0.05	< 0.05	NA	< 0.05	103%	50%	140%	96%	50%	140%	107%	50%	140%
Benzo(b)fluoranthene	9018617		< 0.05	< 0.05	NA	< 0.05	116%	50%	140%	99%	50%	140%	104%	50%	140%
Benzo(k)fluoranthene	9018617		< 0.05	< 0.05	NA	< 0.05	97%	50%	140%	105%	50%	140%	89%	50%	140%
Benzo(a)pyrene	9018617		< 0.05	< 0.05	NA	< 0.05	104%	50%	140%	95%	50%	140%	88%	50%	140%
Indeno(1,2,3-cd)pyrene	9018617		< 0.05	< 0.05	NA	< 0.05	114%	50%	140%	105%	50%	140%	102%	50%	140%
Dibenz(a,h)anthracene	9018617		< 0.05	< 0.05	NA	< 0.05	105%	50%	140%	97%	50%	140%	103%	50%	140%
Benzo(g,h,i)perylene	9018617		< 0.05	< 0.05	NA	< 0.05	105%	50%	140%	87%	50%	140%	96%	50%	140%
2-and 1-methyl Naphthalene	9018617		< 0.05	< 0.05	NA	< 0.05	114%	50%	140%	104%	50%	140%	102%	50%	140%
O. Reg. 153(511) - OC Pesticides (Soil)															
Hexachloroethane	9074911		< 0.01	< 0.01	NA	< 0.01	98%	50%	140%	64%	50%	140%	62%	50%	140%
Gamma-Hexachlorocyclohexane	9074911		< 0.005	< 0.005	NA	< 0.005	83%	50%	140%	68%	50%	140%	69%	50%	140%
Heptachlor	9074911		< 0.005	< 0.005	NA	< 0.005	79%	50%	140%	90%	50%	140%	78%	50%	140%
Aldrin	9074911		< 0.005	< 0.005	NA	< 0.005	80%	50%	140%	96%	50%	140%	86%	50%	140%
Heptachlor Epoxide	9074911		< 0.005	< 0.005	NA	< 0.005	81%	50%	140%	90%	50%	140%	88%	50%	140%
Endosulfan	9074911		< 0.005	< 0.005	NA	< 0.005	80%	50%	140%	78%	50%	140%	78%	50%	140%
Chlordane	9074911		< 0.007	< 0.007	NA	< 0.007	79%	50%	140%	86%	50%	140%	80%	50%	140%
DDE	9074911		< 0.007	< 0.007	NA	< 0.007	81%	50%	140%	96%	50%	140%	86%	50%	140%
DDD	9074911		< 0.007	< 0.007	NA	< 0.007	81%	50%	140%	82%	50%	140%	75%	50%	140%

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Quality Assurance

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AGAT WORK ORDER: 18Z312176

PROJECT: 64153.50

ATTENTION TO: Nicole Soucy

SAMPLING SITE:Kizell Lands

SAMPLED BY:N.S.

Trace Organics Analysis (Continued)

RPT Date:			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
DDT	9074911		< 0.007	< 0.007	NA	< 0.007	87%	50%	140%	84%	50%	140%	75%	50%	140%
Dieldrin	9074911		< 0.005	< 0.005	NA	< 0.005	77%	50%	140%	90%	50%	140%	90%	50%	140%
Endrin	9074911		< 0.005	< 0.005	NA	< 0.005	88%	50%	140%	86%	50%	140%	98%	50%	140%
Methoxychlor	9074911		< 0.005	< 0.005	NA	< 0.005	84%	50%	140%	102%	50%	140%	94%	50%	140%
Hexachlorobenzene	9074911		< 0.005	< 0.005	NA	< 0.005	84%	50%	140%	88%	50%	140%	88%	50%	140%
Hexachlorobutadiene	9074911		< 0.01	< 0.01	NA	< 0.01	108%	50%	140%	76%	50%	140%	65%	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: N Popnikolof

AGAT Laboratories

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Method Summary

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

AGAT WORK ORDER: 18Z312176

PROJECT: 64153.50

ATTENTION TO: Nicole Soucy

SAMPLING SITE:Kizell Lands

SAMPLED BY:N.S.

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
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
Electrical Conductivity	INOR-93-6036	McKeague 4.12, SM 2510 B	EC METER
Sodium Adsorption Ratio	INOR-93-6007	McKeague 4.12 & 3.26 & EPA SW-846 6010B	ICP/OES
pH, 2:1 CaCl2 Extraction	INOR-93-6031	MSA part 3 & SM 4500-H+ B	PH METER

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Method Summary

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

AGAT WORK ORDER: 18Z312176

PROJECT: 64153.50

ATTENTION TO: Nicole Soucy

SAMPLING SITE:Kizell Lands

SAMPLED BY:N.S.

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Hexachloroethane	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Gamma-Hexachlorocyclohexane	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Heptachlor	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Aldrin	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Heptachlor Epoxide	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Endosulfan	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Chlordane	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
DDE	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
DDD	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
DDT	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Dieldrin	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Endrin	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Methoxychlor	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Hexachlorobenzene	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
Hexachlorobutadiene	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
TCMX	ORG-91-5112	EPA SW-846 3541,3620 & 8081	GC/ECD
Decachlorobiphenyl	ORG-91-5113	EPA SW-846 3541,3620 & 8081	GC/ECD
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
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
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
Benzene	VOL-91-5009	EPA SW-846 5035 & 8260	P & T GC/MS
Toluene	VOL-91-5009	EPA SW-846 5035 & 8260	P & T GC/MS
Ethylbenzene	VOL-91-5009	EPA SW-846 5035 & 8260	P & T GC/MS
Xylene Mixture	VOL-91-5009	EPA SW-846 5035 & 8260	P & T GC/MS
F1 (C6 to C10)	VOL-91-5009	CCME Tier 1 Method	GC / FID

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Method Summary

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

AGAT WORK ORDER: 18Z312176

PROJECT: 64153.50

ATTENTION TO: Nicole Soucy

SAMPLING SITE:Kizell Lands

SAMPLED BY:N.S.

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
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
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

AGAT Laboratories

1 Lg

5835 Coopers Avenue
Mississauga, Ontario L4Z 1Y2
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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 #: 1BZ312176

Cooler Quantity: one-onice.

Arrival Temperatures: 8.1 8.2 8.0 / 51 52 47

Custody Seal Intact: ☐ Yes ☐ No ☐ N/A

Notes:

Report Information:

Company: Gemtec
Contact: Nicole Soucy
Address: 32 Steacie Dr.
Kanata ON
Phone: B 613-836-1422 Fax:
Reports to be sent to:
1. Email: nicole.soucy@gemtec.ca
2. Email:

Regulatory Requirements:

☐ No Regulatory Requirement

(Please check all applicable boxes)

☒ Regulation 153/04
Table 1 (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: 64153.50
Site Location: Kizell Lands
Sampled By: NS
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	Y / N	Field Filtered - Metals, Hg, CrVI	O. Reg 153: Metals and Inorganics	All Metals ☐ 153 Metals (excl. Hydrides)	Hydride Metals ☒ 153 Metals (incl. Hydrides)	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	CCME Fractions 1 to 4 PHCs	ABNs	PAHs	PCBs: ☐ Total ☐ Aroclors	Organochlorine Pesticides	TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	Sewer Use	BTEX
BH18-10 SA4	Feb 9/18		3	S				X							X	X						
BH18-10 SA1	↓		↓	↓				X								X		X		X		X
BH18-9 SA2	↓		↓	↓				X								X		X		X		X

Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time
Nicole Soucy	Feb 15/18	4:49PM	Linda Bertrelet	15-Feb-18	16h50
NS	16-Feb-18	16h00	Sina Z	18/2/17	9:21

Page 1 of 1

Nº: T 051501

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CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS
32 STEACIE DRIVE
OTTAWA, ON K2K 2A9
(613) 836-1422

ATTENTION TO: Nicole Soucy

PROJECT: 64153.50

AGAT WORK ORDER: 18Z312196

TRACE ORGANICS REVIEWED BY: Neli Popnikolova, Senior Chemist

WATER ANALYSIS REVIEWED BY: Parvathi Malemath, Data Reviewer

DATE REPORTED: Feb 27, 2018

PAGES (INCLUDING COVER): 12

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.

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Certificate of Analysis

AGAT WORK ORDER: 18Z312196

PROJECT: 64153.50

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Nicole Soucy

SAMPLING SITE:Kizell Lands

SAMPLED BY:N.S.

O. Reg. 153(511) - PHCs F1 - F4 (-BTEX) (Water)

DATE RECEIVED: 2018-02-15

DATE REPORTED: 2018-02-23

		SAMPLE DESCRIPTION:		BH18-9	BH18-10
		SAMPLE TYPE:		Water	Water
		DATE SAMPLED:		2018-02-15	2018-02-15
Parameter	**Unit**	**G / S**	**RDL**	**9071332**	**9071338**
F1 (C6 to C10)	µg/L	420	25	<25	<25
F1 (C6 to C10) minus BTEX	µg/L	420	25	<25	<25
F2 (C10 to C16)	µg/L	150	100	<100	<100
F3 (C16 to C34)	µg/L	500	100	<100	<100
F4 (C34 to C50)	µg/L	500	100	<100	<100
Gravimetric Heavy Hydrocarbons	µg/L	500	500	NA	NA
Surrogate	**Unit**	**Acceptable Limits**			
Terphenyl	%	60-140		106	98

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Ground Water - All Types of Property Uses
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.

9071332-9071338 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.

Certified By: N Popowich

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 18Z312196

PROJECT: 64153.50

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Nicole Soucy

SAMPLING SITE:Kizell Lands

SAMPLED BY:N.S.

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2018-02-15

DATE REPORTED: 2018-02-23

		SAMPLE DESCRIPTION:		BH18-9	BH18-10
		SAMPLE TYPE:		Water	Water
		DATE SAMPLED:		2018-02-15	2018-02-15
Parameter	Unit	G / S	RDL	9071332	9071338
Dichlorodifluoromethane	µg/L	590	0.20	<0.20	<0.20
Vinyl Chloride	µg/L	0.5	0.17	<0.17	<0.17
Bromomethane	µg/L	0.89	0.20	<0.20	<0.20
Trichlorofluoromethane	µg/L	150	0.40	<0.40	<0.40
Acetone	µg/L	2700	1.0	<1.0	<1.0
1,1-Dichloroethylene	µg/L	0.5	0.30	<0.30	<0.30
Methylene Chloride	µg/L	5	0.30	<0.30	<0.30
trans- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20	<0.20
Methyl tert-butyl ether	µg/L	15	0.20	<0.20	<0.20
1,1-Dichloroethane	µg/L	0.5	0.30	<0.30	<0.30
Methyl Ethyl Ketone	µg/L	400	1.0	<1.0	<1.0
cis- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20	<0.20
Chloroform	µg/L	2	0.20	<0.20	<0.20
1,2-Dichloroethane	µg/L	0.5	0.20	<0.20	<0.20
1,1,1-Trichloroethane	µg/L	0.5	0.30	<0.30	<0.30
Carbon Tetrachloride	µg/L	0.2	0.20	<0.20	<0.20
Benzene	µg/L	0.5	0.20	<0.20	<0.20
1,2-Dichloropropane	µg/L	0.5	0.20	<0.20	<0.20
Trichloroethylene	µg/L	0.5	0.20	**0.66**	0.25
Bromodichloromethane	µg/L	2	0.20	<0.20	<0.20
Methyl Isobutyl Ketone	µg/L	640	1.0	<1.0	<1.0
1,1,2-Trichloroethane	µg/L	0.5	0.20	<0.20	<0.20
Toluene	µg/L	0.8	0.20	<0.20	<0.20
Dibromochloromethane	µg/L	2	0.10	<0.10	<0.10
Ethylene Dibromide	µg/L	0.2	0.10	<0.10	<0.10
Tetrachloroethylene	µg/L	0.5	0.20	<0.20	<0.20
1,1,1,2-Tetrachloroethane	µg/L	1.1	0.10	<0.10	<0.10
Chlorobenzene	µg/L	0.5	0.10	<0.10	<0.10
Ethylbenzene	µg/L	0.5	0.10	<0.10	<0.10
m & p-Xylene	µg/L		0.20	<0.20	<0.20

Certified By: N Popowkolof

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 18Z312196

PROJECT: 64153.50

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Nicole Soucy

SAMPLING SITE:Kizell Lands

SAMPLED BY:N.S.

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2018-02-15

DATE REPORTED: 2018-02-23

		SAMPLE DESCRIPTION:		BH18-9	BH18-10
		SAMPLE TYPE:		Water	Water
		DATE SAMPLED:		2018-02-15	2018-02-15
Parameter	**Unit**	**G / S**	**RDL**	**9071332**	**9071338**
Bromoform	µg/L	5	0.10	<0.10	<0.10
Styrene	µg/L	0.5	0.10	<0.10	<0.10
1,1,2,2-Tetrachloroethane	µg/L	0.5	0.10	<0.10	<0.10
o-Xylene	µg/L		0.10	<0.10	<0.10
1,3-Dichlorobenzene	µg/L	0.5	0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	0.5	0.10	<0.10	<0.10
1,2-Dichlorobenzene	µg/L	0.5	0.10	<0.10	<0.10
1,3-Dichloropropene	µg/L	0.5	0.30	<0.30	<0.30
Xylene Mixture	µg/L	72	0.20	<0.20	<0.20
n-Hexane	µg/L	5	0.20	<0.20	<0.20
Surrogate	**Unit**	**Acceptable Limits**			
Toluene-d8	% Recovery	50-140		90	89
4-Bromofluorobenzene	% Recovery	50-140		95	94

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Ground Water - All Types of Property Uses
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.

Certified By: N Popnikolof

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Certificate of Analysis

AGAT WORK ORDER: 18Z312196

PROJECT: 64153.50

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Nicole Soucy

SAMPLING SITE:Kizell Lands

SAMPLED BY:N.S.

O. Reg. 153(511) - All Metals (Water)

DATE RECEIVED: 2018-02-15

DATE REPORTED: 2018-02-23

		SAMPLE DESCRIPTION:		BH18-9	BH18-10
		SAMPLE TYPE:		Water	Water
		DATE SAMPLED:		2018-02-15	2018-02-15
Parameter	Unit	G / S	RDL	9071332	9071338
Antimony	µg/L	1.5	1.0	<1.0	<1.0
Arsenic	µg/L	13	1.0	<1.0	<1.0
Barium	µg/L	610	2.0	52.5	178
Beryllium	µg/L	0.5	0.5	<0.5	<0.5
Boron	µg/L	1700	10.0	21.9	13.4
Cadmium	µg/L	0.5	0.2	<0.2	<0.2
Chromium	µg/L	11	2.0	<2.0	2.3
Cobalt	µg/L	3.8	0.5	0.6	1.3
Copper	µg/L	5	1.0	1.0	3.1
Lead	µg/L	1.9	0.5	<0.5	<0.5
Molybdenum	µg/L	23	0.5	1.4	0.7
Nickel	µg/L	14	1.0	3.6	3.5
Selenium	µg/L	5	1.0	<1.0	<1.0
Silver	µg/L	0.3	0.2	<0.2	<0.2
Thallium	µg/L	0.5	0.3	<0.3	<0.3
Uranium	µg/L	8.9	0.5	<0.5	0.8
Vanadium	µg/L	3.9	0.4	0.7	0.9
Zinc	µg/L	160	5.0	<5.0	<5.0
Mercury	µg/L	0.1	0.02	<0.02	<0.02
Chromium VI	µg/L	25	5	<5	<5

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Ground Water - All Types of Property Uses
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.

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Guideline Violation

AGAT WORK ORDER: 18Z312196

PROJECT: 64153.50

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Nicole Soucy

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
9071332	BH18-9	ON T1 GW	O. Reg. 153(511) - VOCs (Water)	Trichloroethylene	µg/L	0.5	0.66

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Quality Assurance

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

AGAT WORK ORDER: 18Z312196

PROJECT: 64153.50

ATTENTION TO: Nicole Soucy

SAMPLING SITE:Kizell Lands

SAMPLED BY:N.S.

Trace Organics Analysis

RPT Date:			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) (Water)															
F1 (C6 to C10)	9078541		< 25	< 25	NA	< 25	86%	60%	140%	89%	60%	140%	101%	60%	140%
F2 (C10 to C16)		TW	< 100	< 100	NA	< 100	92%	60%	140%	61%	60%	140%	63%	60%	140%
F3 (C16 to C34)		TW	< 100	< 100	NA	< 100	98%	60%	140%	91%	60%	140%	94%	60%	140%
F4 (C34 to C50)		TW	< 100	< 100	NA	< 100	89%	60%	140%	94%	60%	140%	88%	60%	140%
O. Reg. 153(511) - VOCs (Water)															
Dichlorodifluoromethane	9070856		< 0.20	< 0.20	NA	< 0.20	110%	50%	140%	104%	50%	140%	89%	50%	140%
Vinyl Chloride	9070856		< 0.17	< 0.17	NA	< 0.17	123%	50%	140%	102%	50%	140%	100%	50%	140%
Bromomethane	9070856		< 0.20	< 0.20	NA	< 0.20	125%	50%	140%	112%	50%	140%	84%	50%	140%
Trichlorofluoromethane	9070856		< 0.40	< 0.40	NA	< 0.40	104%	50%	140%	127%	50%	140%	73%	50%	140%
Acetone	9070856		< 1.0	< 1.0	NA	< 1.0	96%	50%	140%	80%	50%	140%	114%	50%	140%
1,1-Dichloroethylene	9070856		< 0.30	< 0.30	NA	< 0.30	77%	50%	140%	103%	60%	130%	92%	50%	140%
Methylene Chloride	9070856		< 0.30	< 0.30	NA	< 0.30	100%	50%	140%	99%	60%	130%	113%	50%	140%
trans- 1,2-Dichloroethylene	9070856		< 0.20	< 0.20	NA	< 0.20	81%	50%	140%	100%	60%	130%	97%	50%	140%
Methyl tert-butyl ether	9070856		< 0.20	< 0.20	NA	< 0.20	119%	50%	140%	108%	60%	130%	120%	50%	140%
1,1-Dichloroethane	9070856		< 0.30	< 0.30	NA	< 0.30	89%	50%	140%	102%	60%	130%	118%	50%	140%
Methyl Ethyl Ketone	9070856		< 1.0	< 1.0	NA	< 1.0	93%	50%	140%	121%	50%	140%	95%	50%	140%
cis- 1,2-Dichloroethylene	9070856		< 0.20	< 0.20	NA	< 0.20	75%	50%	140%	114%	60%	130%	88%	50%	140%
Chloroform	9070856		< 0.20	< 0.20	NA	< 0.20	83%	50%	140%	109%	60%	130%	99%	50%	140%
1,2-Dichloroethane	9070856		< 0.20	< 0.20	NA	< 0.20	84%	50%	140%	119%	60%	130%	102%	50%	140%
1,1,1-Trichloroethane	9070856		< 0.30	< 0.30	NA	< 0.30	73%	50%	140%	119%	60%	130%	85%	50%	140%
Carbon Tetrachloride	9070856		< 0.20	< 0.20	NA	< 0.20	70%	50%	140%	101%	60%	130%	84%	50%	140%
Benzene	9070856		< 0.20	< 0.20	NA	< 0.20	78%	50%	140%	111%	60%	130%	82%	50%	140%
1,2-Dichloropropane	9070856		< 0.20	< 0.20	NA	< 0.20	76%	50%	140%	112%	60%	130%	86%	50%	140%
Trichloroethylene	9070856		< 0.20	< 0.20	NA	< 0.20	74%	50%	140%	110%	60%	130%	79%	50%	140%
Bromodichloromethane	9070856		< 0.20	< 0.20	NA	< 0.20	80%	50%	140%	114%	60%	130%	86%	50%	140%
Methyl Isobutyl Ketone	9070856		< 1.0	< 1.0	NA	< 1.0	92%	50%	140%	114%	50%	140%	101%	50%	140%
1,1,2-Trichloroethane	9070856		< 0.20	< 0.20	NA	< 0.20	110%	50%	140%	120%	60%	130%	106%	50%	140%
Toluene	9070856		< 0.20	< 0.20	NA	< 0.20	104%	50%	140%	119%	60%	130%	99%	50%	140%
Dibromochloromethane	9070856		< 0.10	< 0.10	NA	< 0.10	104%	50%	140%	114%	60%	130%	96%	50%	140%
Ethylene Dibromide	9070856		< 0.10	< 0.10	NA	< 0.10	116%	50%	140%	113%	60%	130%	100%	50%	140%
Tetrachloroethylene	9070856		< 0.20	< 0.20	NA	< 0.20	99%	50%	140%	121%	60%	130%	92%	50%	140%
1,1,1,2-Tetrachloroethane	9070856		< 0.10	< 0.10	NA	< 0.10	98%	50%	140%	110%	60%	130%	91%	50%	140%
Chlorobenzene	9070856		< 0.10	< 0.10	NA	< 0.10	109%	50%	140%	118%	60%	130%	100%	50%	140%
Ethylbenzene	9070856		< 0.10	< 0.10	NA	< 0.10	94%	50%	140%	111%	60%	130%	87%	50%	140%
m & p-Xylene	9070856		< 0.20	< 0.20	NA	< 0.20	102%	50%	140%	117%	60%	130%	94%	50%	140%
Bromoform	9070856		< 0.10	< 0.10	NA	< 0.10	107%	50%	140%	104%	60%	130%	91%	50%	140%
Styrene	9070856		< 0.10	< 0.10	NA	< 0.10	87%	50%	140%	100%	60%	130%	81%	50%	140%
1,1,2,2-Tetrachloroethane	9070856		< 0.10	< 0.10	NA	< 0.10	86%	50%	140%	119%	60%	130%	119%	50%	140%
o-Xylene	9070856		< 0.10	< 0.10	NA	< 0.10	106%	50%	140%	117%	60%	130%	98%	50%	140%

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Quality Assurance

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

AGAT WORK ORDER: 18Z312196

PROJECT: 64153.50

ATTENTION TO: Nicole Soucy

SAMPLING SITE:Kizell Lands

SAMPLED BY:N.S.

Trace Organics Analysis (Continued)

RPT Date:			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	9070856		< 0.10	< 0.10	NA	< 0.10	102%	50%	140%	103%	60%	130%	87%	50%	140%
1,4-Dichlorobenzene	9070856		< 0.10	< 0.10	NA	< 0.10	115%	50%	140%	114%	60%	130%	97%	50%	140%
1,2-Dichlorobenzene	9070856		< 0.10	< 0.10	NA	< 0.10	108%	50%	140%	102%	60%	130%	90%	50%	140%
1,3-Dichloropropene	9070856		< 0.30	< 0.30	NA	< 0.30	85%	50%	140%	97%	60%	130%	95%	50%	140%
n-Hexane	9070856		< 0.20	< 0.20	NA	< 0.20	93%	50%	140%	84%	60%	130%	70%	50%	140%

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: N Popnikolof

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Quality Assurance

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

AGAT WORK ORDER: 18Z312196

PROJECT: 64153.50

ATTENTION TO: Nicole Soucy

SAMPLING SITE:Kizell Lands

SAMPLED BY:N.S.

Water Analysis

RPT Date:			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) - All Metals (Water)															
Antimony	9077754		<1.0	<1.0	NA	< 1.0	98%	70%	130%	101%	80%	120%	112%	70%	130%
Arsenic	9077754		1.6	1.5	NA	< 1.0	97%	70%	130%	95%	80%	120%	105%	70%	130%
Barium	9077754		56.1	55.7	0.7%	< 2.0	99%	70%	130%	97%	80%	120%	95%	70%	130%
Beryllium	9077754		<0.5	<0.5	NA	< 0.5	98%	70%	130%	92%	80%	120%	104%	70%	130%
Boron	9077754		167	186	10.8%	< 10.0	103%	70%	130%	98%	80%	120%	104%	70%	130%
Cadmium	9077754		<0.2	<0.2	NA	< 0.2	105%	70%	130%	108%	80%	120%	116%	70%	130%
Chromium	9077754		4.1	4.0	NA	< 2.0	105%	70%	130%	104%	80%	120%	106%	70%	130%
Cobalt	9077754		0.6	0.7	NA	< 0.5	95%	70%	130%	91%	80%	120%	94%	70%	130%
Copper	9077754		3.0	2.8	NA	< 1.0	98%	70%	130%	94%	80%	120%	94%	70%	130%
Lead	9077754		<0.5	<0.5	NA	< 0.5	103%	70%	130%	101%	80%	120%	99%	70%	130%
Molybdenum	9077754		25.5	25.7	0.8%	< 0.5	99%	70%	130%	98%	80%	120%	99%	70%	130%
Nickel	9077754		2.6	2.9	NA	< 1.0	101%	70%	130%	95%	80%	120%	100%	70%	130%
Selenium	9077754		<1.0	<1.0	NA	< 1.0	105%	70%	130%	98%	80%	120%	104%	70%	130%
Silver	9077754		<0.2	<0.2	NA	< 0.2	103%	70%	130%	103%	80%	120%	108%	70%	130%
Thallium	9077754		<0.3	<0.3	NA	< 0.3	104%	70%	130%	104%	80%	120%	102%	70%	130%
Uranium	9077754		3.7	3.7	0.0%	< 0.5	94%	70%	130%	92%	80%	120%	95%	70%	130%
Vanadium	9077754		1.5	1.5	NA	< 0.4	98%	70%	130%	95%	80%	120%	99%	70%	130%
Zinc	9077754		<5.0	<5.0	NA	< 5.0	97%	70%	130%	104%	80%	120%	103%	70%	130%
Mercury	9078529		<0.02	<0.02	NA	< 0.02	103%	70%	130%	105%	80%	120%	95%	70%	130%
Chromium VI	9080980		<5	<5	NA	< 5	100%	70%	130%	102%	80%	120%	100%	70%	130%

Comments: NA signifies Not Applicable.
Duplicate Qualifier: As the measured result approaches the Reporting Limit (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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Method Summary

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS | **AGAT WORK ORDER: 18Z312196**

PROJECT: 64153.50 | **ATTENTION TO: Nicole Soucy**

SAMPLING SITE:Kizell Lands | **SAMPLED BY:N.S.**

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
F1 (C6 to 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
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
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

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Method Summary

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

AGAT WORK ORDER: 18Z312196

PROJECT: 64153.50

ATTENTION TO: Nicole Soucy

SAMPLING SITE:Kizell Lands

SAMPLED BY:N.S.

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
Mercury	MET-93-6100	EPA SW-846 7470 & 245.1	CVAAS
Chromium VI	INOR-93-6034	SM 3500-Cr B	SPECTROPHOTOMETER

AGAT Laboratories

ILG

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Mississauga, Ontario L4Z 1Y2
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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 #: 1823121 96

Cooler Quantity: one - on ice

Arrival Temperatures: 8.1 | 8.3 | 8.2

5' | 5.2 | 4.7

Custody Seal Intact: ☐ Yes ☐ No ☐ N/A

Notes:

Report Information:

Company: Gemtec
Contact: Nicole Soucy
Address: 32 Steacie Dr.
Kanata, ON
Phone: 613-836-1422 Fax:

Reports to be sent to:
1. Email: nicole.soucy@gemtec.ca
2. Email:

Regulatory Requirements:

☐ No Regulatory Requirement

(Please check all applicable boxes)

☒ Regulation 153/04
Table 1 (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: 64153.50
Site Location: Kizell Lands
Sampled By: NS
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) ☒ 153 Metals (incl. Hydrides) ☐ Hydride Metals	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	CCME Fractions 1 to 4 PHCs F1-F4	ABNs	PAHs	PCBs: ☐ Total ☐ Aroclors	Organochlorine Pesticides	TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	Sewer Use
BH18-9			13	GW			X					X	X						
BH18-10			13	GW			X					X	X						
analyze																			
* ~~Sample~~ non-filtered					metals - put filtered on hold														

Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time
Nicole Soucy	Feb 15/18	4:30pm	[illegible]	15-Feb-18	16h50
[illegible]	16Feb18	16h00	Sima Z	18/2/17	921

Page 1 of 1

N°: T 051502

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CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS
32 STEACIE DRIVE
OTTAWA, ON K2K 2A9
(613) 836-1422

ATTENTION TO: Nicole Soucy

PROJECT: 64153.50

AGAT WORK ORDER: 18Z338338

TRACE ORGANICS REVIEWED BY: Oksana Gushyla, Trace Organics Lab Supervisor

DATE REPORTED: May 22, 2018

PAGES (INCLUDING COVER): 9

VERSION*: 3

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

NOTES

VERSION 3: V3 - Issued 2018-05-25. Added VOC analysis for sample ID "MW18-109 SA2". Supersedes previous versions.

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

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Certificate of Analysis

AGAT WORK ORDER: 18Z338338

PROJECT: 64153.50

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Nicole Soucy

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - PHCs F1/BTEX (Water)

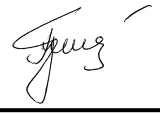
DATE RECEIVED: 2018-05-11 **DATE REPORTED: 2018-05-22**

		SAMPLE DESCRIPTION:		MW18-9 SA2	MW18-10 SA2
		SAMPLE TYPE:		Water	Water
		DATE SAMPLED:		2018-05-11	2018-05-11
Parameter	Unit	G / S	RDL	9236213	9236215
F1 (C6 - C10)	µg/L	420	25	<25	<25
F1 (C6 to C10) minus BTEX	µg/L	420	25	<25	<25

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Ground Water - All Types of Property Uses
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.

9236213-9236215 The C6-C10 fraction is calculated using Toluene response factor.
Total C6-C10 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.
Extraction and holding times were met for this sample.
NA = Not Applicable

Certified By:



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Certificate of Analysis

AGAT WORK ORDER: 18Z338338

PROJECT: 64153.50

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Nicole Soucy

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2018-05-11

DATE REPORTED: 2018-05-22

		SAMPLE DESCRIPTION:		MW18-9 SA2	MW18-109 SA2	MW18-10 SA2
		SAMPLE TYPE:		Water	Water	Water
		DATE SAMPLED:		2018-05-11	2018-05-11	2018-05-11
Parameter	Unit	G / S	RDL	9236213	9236214	9236215
Dichlorodifluoromethane	µg/L	590	0.20	<0.20	<0.20	<0.20
Vinyl Chloride	µg/L	0.5	0.17	<0.17	<0.17	<0.17
Bromomethane	µg/L	0.89	0.20	<0.20	<0.20	<0.20
Trichlorofluoromethane	µg/L	150	0.40	<0.40	<0.40	<0.40
Acetone	µg/L	2700	1.0	<1.0	<1.0	<1.0
1,1-Dichloroethylene	µg/L	0.5	0.30	<0.30	<0.30	<0.30
Methylene Chloride	µg/L	5	0.30	<0.30	<0.30	<0.30
trans- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20	<0.20	<0.20
Methyl tert-butyl ether	µg/L	15	0.20	<0.20	<0.20	<0.20
1,1-Dichloroethane	µg/L	0.5	0.30	<0.30	<0.30	<0.30
Methyl Ethyl Ketone	µg/L	400	1.0	<1.0	<1.0	<1.0
cis- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20	<0.20	<0.20
Chloroform	µg/L	2	0.20	<0.20	<0.20	<0.20
1,2-Dichloroethane	µg/L	0.5	0.20	<0.20	<0.20	<0.20
1,1,1-Trichloroethane	µg/L	0.5	0.30	<0.30	<0.30	<0.30
Carbon Tetrachloride	µg/L	0.2	0.20	<0.20	<0.20	<0.20
Benzene	µg/L	0.5	0.20	<0.20	<0.20	<0.20
1,2-Dichloropropane	µg/L	0.5	0.20	<0.20	<0.20	<0.20
Trichloroethylene	µg/L	0.5	0.20	**1.3**	**1.6**	<0.20
Bromodichloromethane	µg/L	2	0.20	<0.20	<0.20	<0.20
Methyl Isobutyl Ketone	µg/L	640	1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	µg/L	0.5	0.20	<0.20	<0.20	<0.20
Toluene	µg/L	0.8	0.20	<0.20	<0.20	<0.20
Dibromochloromethane	µg/L	2	0.10	<0.10	<0.10	<0.10
Ethylene Dibromide	µg/L	0.2	0.10	<0.10	<0.10	<0.10
Tetrachloroethylene	µg/L	0.5	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
Chlorobenzene	µg/L	0.5	0.10	<0.10	<0.10	<0.10
Ethylbenzene	µg/L	0.5	0.10	<0.10	<0.10	<0.10
m & p-Xylene	µg/L		0.20	<0.20	<0.20	<0.20

Certified By:

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Certificate of Analysis

AGAT WORK ORDER: 18Z338338

PROJECT: 64153.50

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Nicole Soucy

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - VOCs (Water)

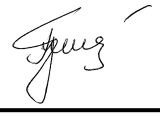
DATE RECEIVED: 2018-05-11

DATE REPORTED: 2018-05-22

		SAMPLE DESCRIPTION:		MW18-9 SA2	MW18-109 SA2	MW18-10 SA2
		SAMPLE TYPE:		Water	Water	Water
		DATE SAMPLED:		2018-05-11	2018-05-11	2018-05-11
Parameter	**Unit**	**G / S**	**RDL**	**9236213**	**9236214**	**9236215**
Bromoform	µg/L	5	0.10	<0.10	<0.10	<0.10
Styrene	µg/L	0.5	0.10	<0.10	<0.10	<0.10
1,1,2,2-Tetrachloroethane	µg/L	0.5	0.10	<0.10	<0.10	<0.10
o-Xylene	µg/L		0.10	<0.10	<0.10	<0.10
1,3-Dichlorobenzene	µg/L	0.5	0.10	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	0.5	0.10	<0.10	<0.10	<0.10
1,2-Dichlorobenzene	µg/L	0.5	0.10	<0.10	<0.10	<0.10
1,3-Dichloropropene	µg/L	0.5	0.30	<0.30	<0.30	<0.30
Xylene Mixture	µg/L	72	0.20	<0.20	<0.20	<0.20
n-Hexane	µg/L	5	0.20	<0.20	<0.20	<0.20
Surrogate	**Unit**	**Acceptable Limits**				
Toluene-d8	% Recovery	50-140		85	100	92
4-Bromofluorobenzene	% Recovery	50-140		98	94	91

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Ground Water - All Types of Property Uses
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.

Certified By:



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Guideline Violation

AGAT WORK ORDER: 18Z338338

PROJECT: 64153.50

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Nicole Soucy

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
9236213	MW18-9 SA2	ON T1 GW	O. Reg. 153(511) - VOCs (Water)	Trichloroethylene	µg/L	0.5	1.3
9236214	MW18-109 SA2	ON T1 GW	O. Reg. 153(511) - VOCs (Water)	Trichloroethylene	µg/L	0.5	1.6

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Quality Assurance

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

AGAT WORK ORDER: 18Z338338

PROJECT: 64153.50

ATTENTION TO: Nicole Soucy

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis

RPT Date: May 22, 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/BTEX (Water)															
F1 (C6 - C10)	9251239		< 25	< 25	NA	< 25	98%	60%	140%	96%	60%	140%	99%	60%	140%
O. Reg. 153(511) - VOCs (Water)															
Dichlorodifluoromethane	9236213	9236213	< 0.20	< 0.20	NA	< 0.20	108%	50%	140%	122%	50%	140%	94%	50%	140%
Vinyl Chloride	9236213	9236213	< 0.17	< 0.17	NA	< 0.17	113%	50%	140%	105%	50%	140%	98%	50%	140%
Bromomethane	9236213	9236213	< 0.20	< 0.20	NA	< 0.20	94%	50%	140%	125%	50%	140%	97%	50%	140%
Trichlorofluoromethane	9236213	9236213	< 0.40	< 0.40	NA	< 0.40	130%	50%	140%	123%	50%	140%	126%	50%	140%
Acetone	9236213	9236213	< 1.0	< 1.0	NA	< 1.0	105%	50%	140%	117%	50%	140%	120%	50%	140%
1,1-Dichloroethylene	9236213	9236213	< 0.30	< 0.30	NA	< 0.30	81%	50%	140%	107%	60%	130%	102%	50%	140%
Methylene Chloride	9236213	9236213	< 0.30	< 0.30	NA	< 0.30	105%	50%	140%	93%	60%	130%	118%	50%	140%
trans- 1,2-Dichloroethylene	9236213	9236213	< 0.20	< 0.20	NA	< 0.20	115%	50%	140%	114%	60%	130%	110%	50%	140%
Methyl tert-butyl ether	9236213	9236213	< 0.20	< 0.20	NA	< 0.20	76%	50%	140%	90%	60%	130%	104%	50%	140%
1,1-Dichloroethane	9236213	9236213	< 0.30	< 0.30	NA	< 0.30	92%	50%	140%	98%	60%	130%	108%	50%	140%
Methyl Ethyl Ketone	9236213	9236213	< 1.0	< 1.0	NA	< 1.0	103%	50%	140%	101%	50%	140%	95%	50%	140%
cis- 1,2-Dichloroethylene	9236213	9236213	< 0.20	< 0.20	NA	< 0.20	97%	50%	140%	91%	60%	130%	111%	50%	140%
Chloroform	9236213	9236213	< 0.20	< 0.20	NA	< 0.20	119%	50%	140%	75%	60%	130%	98%	50%	140%
1,2-Dichloroethane	9236213	9236213	< 0.20	< 0.20	NA	< 0.20	108%	50%	140%	93%	60%	130%	120%	50%	140%
1,1,1-Trichloroethane	9236213	9236213	< 0.30	< 0.30	NA	< 0.30	109%	50%	140%	97%	60%	130%	89%	50%	140%
Carbon Tetrachloride	9236213	9236213	< 0.20	< 0.20	NA	< 0.20	104%	50%	140%	89%	60%	130%	110%	50%	140%
Benzene	9236213	9236213	< 0.20	< 0.20	NA	< 0.20	109%	50%	140%	96%	60%	130%	113%	50%	140%
1,2-Dichloropropane	9236213	9236213	< 0.20	< 0.20	NA	< 0.20	100%	50%	140%	82%	60%	130%	94%	50%	140%
Trichloroethylene	9236213	9236213	1.3	1.6	20.7%	< 0.20	88%	50%	140%	93%	60%	130%	115%	50%	140%
Bromodichloromethane	9236213	9236213	< 0.20	< 0.20	NA	< 0.20	86%	50%	140%	71%	60%	130%	103%	50%	140%
Methyl Isobutyl Ketone	9236213	9236213	< 1.0	< 1.0	NA	< 1.0	79%	50%	140%	82%	50%	140%	110%	50%	140%
1,1,2-Trichloroethane	9236213	9236213	< 0.20	< 0.20	NA	< 0.20	106%	50%	140%	100%	60%	130%	116%	50%	140%
Toluene	9236213	9236213	< 0.20	< 0.20	NA	< 0.20	89%	50%	140%	108%	60%	130%	107%	50%	140%
Dibromochloromethane	9236213	9236213	< 0.10	< 0.10	NA	< 0.10	78%	50%	140%	85%	60%	130%	117%	50%	140%
Ethylene Dibromide	9236213	9236213	< 0.10	< 0.10	NA	< 0.10	97%	50%	140%	94%	60%	130%	112%	50%	140%
Tetrachloroethylene	9236213	9236213	< 0.20	< 0.20	NA	< 0.20	116%	50%	140%	109%	60%	130%	118%	50%	140%
1,1,1,2-Tetrachloroethane	9236213	9236213	< 0.10	< 0.10	NA	< 0.10	84%	50%	140%	94%	60%	130%	114%	50%	140%
Chlorobenzene	9236213	9236213	< 0.10	< 0.10	NA	< 0.10	109%	50%	140%	118%	60%	130%	117%	50%	140%
Ethylbenzene	9236213	9236213	< 0.10	< 0.10	NA	< 0.10	116%	50%	140%	109%	60%	130%	99%	50%	140%
m & p-Xylene	9236213	9236213	< 0.20	< 0.20	NA	< 0.20	120%	50%	140%	97%	60%	130%	127%	50%	140%
Bromoform	9236213	9236213	< 0.10	< 0.10	NA	< 0.10	76%	50%	140%	81%	60%	130%	113%	50%	140%
Styrene	9236213	9236213	< 0.10	< 0.10	NA	< 0.10	101%	50%	140%	95%	60%	130%	94%	50%	140%
1,1,2,2-Tetrachloroethane	9236213	9236213	< 0.10	< 0.10	NA	< 0.10	100%	50%	140%	107%	60%	130%	92%	50%	140%
o-Xylene	9236213	9236213	< 0.10	< 0.10	NA	< 0.10	98%	50%	140%	96%	60%	130%	117%	50%	140%
1,3-Dichlorobenzene	9236213	9236213	< 0.10	< 0.10	NA	< 0.10	102%	50%	140%	111%	60%	130%	80%	50%	140%
1,4-Dichlorobenzene	9236213	9236213	< 0.10	< 0.10	NA	< 0.10	113%	50%	140%	89%	60%	130%	103%	50%	140%

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Quality Assurance

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

AGAT WORK ORDER: 18Z338338

PROJECT: 64153.50

ATTENTION TO: Nicole Soucy

SAMPLING SITE:

SAMPLED BY:

Trace Organics Analysis (Continued)

RPT Date: May 22, 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
1,2-Dichlorobenzene	9236213	9236213	< 0.10	< 0.10	NA	< 0.10	100%	50%	140%	106%	60%	130%	104%	50%	140%
1,3-Dichloropropene	9236213	9236213	< 0.30	< 0.30	NA	< 0.30	72%	50%	140%	96%	60%	130%	81%	50%	140%
n-Hexane	9236213	9236213	< 0.20	< 0.20	NA	< 0.20	88%	50%	140%	118%	60%	130%	71%	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:

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: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

AGAT WORK ORDER: 18Z338338

PROJECT: 64153.50

ATTENTION TO: Nicole Soucy

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
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
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
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

AGAT Laboratories

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Mississauga, Ontario L4Z 1Y2
Ph: 905.712.5100 Fax: 905.712.5122
webearth.agatlabs.com

Laboratory Use Only

Work Order #: 18Z338338

Cooler Quantity: one-on ice

Arrival Temperatures: 10.4 10.6 10.7 / 10.6 13.1 13.6

Custody Seal Intact: ☐ Yes ☐ No ☐ N/A

Notes:

Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water intended for human consumption)

Report Information:

Company: Gemtec
Contact: Nicole Soucy
Address: 32 Steacie Dr.
Phone: 613-836-1422 Fax:
Reports to be sent to:
1. Email: nicole.soucy@gemtec.ca
2. Email:

Regulatory Requirements:

☐ No Regulatory Requirement

(Please check all applicable boxes)

☒ Regulation 153/04
Table 1 *(Indicate One)*
☐ Ind/Com
☐ Res/Park
☐ Agriculture

Soil Texture *(Check One)*
☐ Coarse
☐ Fine

☐ Sewer Use
☐ Sanitary
☐ Storm
Region ____ *Indicate One*

☐ 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: 64153.50
Site Location:
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)	Metals and Inorganics (O. Reg 153)	☐ All Metals ☐ 153 Metals (excl. Hydrides) ☐ Hydride Metals	ORPs: ☐ B-HWS ☐ Cl⁻ ☐ CN ☐ Cr⁶⁺ ☐ EC ☐ FOC ☐ Hg ☐ pH ☐ SAR	Full Metals Scan	Regulation/Custom Metals	Nutrients: ☐ TP ☐ NH₃ ☐ TKN ☐ NO₃ ☐ NO₂ ☐ NO₃+NO₂	Volatiles: ☐ VOC ☐ BTEX ☐ THM	CCME Fractions 1 to 4	ABNs	PAHs	PCBs: ☐ Total ☐ Aroclors	Organochlorine Pesticides	TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	Sewer Use	VOC + F1					
MW 18-9 SA2	11/5/18	11:16AM	3	GW																	X					
MW 18-109 SA2	↓	"	3	↓	ON HOLD																					
MW 18-10 SA1	↓	11:40AM	3	↓																	X					

Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time
	11/5/18		[signature] Linda	18-05-11	14h00
O. St Bernelot to Pura 18-05-11	18-05-11	16h00	[signature] 18/5/11	10	END

Page 1 of 1

Nº: T 041800

AGAT Laboratories

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CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS
32 STEACIE DRIVE
OTTAWA, ON K2K 2A9
(613) 836-1422

ATTENTION TO: Nicole Soucy

PROJECT: 64153.50

AGAT WORK ORDER: 18Z366834

TRACE ORGANICS REVIEWED BY: Neli Popnikolova, Senior Chemist

DATE REPORTED: Jul 31, 2018

PAGES (INCLUDING COVER): 7

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.

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 18Z366834

PROJECT: 64153.50

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Nicole Soucy

SAMPLING SITE:Kizell

SAMPLED BY:NS

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2018-07-26

DATE REPORTED: 2018-07-31

SAMPLE DESCRIPTION:				MW18-9	MW18-10S	MW18-10D		MW18-11		MW18-12	MW18-13
SAMPLE TYPE:				Water	Water	Water		Water		Water	Water
DATE SAMPLED:				2018-07-26	2018-07-26	2018-07-26		2018-07-26		2018-07-26	2018-07-26
Parameter	Unit	G / S	RDL	9428120	9428122	9428123	RDL	9428124	RDL	9428125	9428126
Dichlorodifluoromethane	µg/L		0.20	<0.20	<0.20	<0.20	0.80	<0.80	0.20	<0.20	<0.20
Vinyl Chloride	µg/L		0.17	<0.17	<0.17	<0.17	0.68	<0.68	0.17	<0.17	<0.17
Bromomethane	µg/L		0.20	<0.20	<0.20	<0.20	0.80	<0.80	0.20	<0.20	<0.20
Trichlorofluoromethane	µg/L		0.40	<0.40	<0.40	<0.40	1.60	<1.60	0.40	<0.40	<0.40
Acetone	µg/L		1.0	<1.0	<1.0	<1.0	4.0	<4.0	1.0	<1.0	<1.0
1,1-Dichloroethylene	µg/L		0.30	<0.30	<0.30	<0.30	1.20	<1.20	0.30	<0.30	<0.30
Methylene Chloride	µg/L		0.30	<0.30	<0.30	<0.30	1.20	<1.20	0.30	<0.30	<0.30
trans- 1,2-Dichloroethylene	µg/L		0.20	<0.20	<0.20	<0.20	0.80	<0.80	0.20	<0.20	<0.20
Methyl tert-butyl ether	µg/L		0.20	<0.20	<0.20	<0.20	0.80	<0.80	0.20	<0.20	<0.20
1,1-Dichloroethane	µg/L		0.30	<0.30	<0.30	<0.30	1.20	<1.20	0.30	<0.30	<0.30
Methyl Ethyl Ketone	µg/L		1.0	<1.0	<1.0	3.7	4.0	<4.0	1.0	<1.0	<1.0
cis- 1,2-Dichloroethylene	µg/L		0.20	<0.20	<0.20	<0.20	0.80	<0.80	0.20	<0.20	<0.20
Chloroform	µg/L		0.20	<0.20	<0.20	<0.20	0.80	<0.80	0.20	<0.20	<0.20
1,2-Dichloroethane	µg/L		0.20	<0.20	<0.20	<0.20	0.80	<0.80	0.20	<0.20	<0.20
1,1,1-Trichloroethane	µg/L		0.30	<0.30	<0.30	<0.30	1.20	<1.20	0.30	<0.30	<0.30
Carbon Tetrachloride	µg/L		0.20	<0.20	<0.20	<0.20	0.80	<0.80	0.20	<0.20	<0.20
Benzene	µg/L		0.20	<0.20	<0.20	0.66	0.80	1.1	0.20	0.65	1.1
1,2-Dichloropropane	µg/L		0.20	<0.20	<0.20	<0.20	0.80	<0.80	0.20	<0.20	<0.20
Trichloroethylene	µg/L		0.20	<0.20	<0.20	<0.20	0.80	<0.80	0.20	<0.20	<0.20
Bromodichloromethane	µg/L		0.20	<0.20	<0.20	<0.20	0.80	<0.80	0.20	<0.20	<0.20
Methyl Isobutyl Ketone	µg/L		1.0	<1.0	<1.0	<1.0	4.0	<4.0	1.0	<1.0	<1.0
1,1,2-Trichloroethane	µg/L		0.20	<0.20	<0.20	<0.20	0.80	<0.80	0.20	<0.20	<0.20
Toluene	µg/L		0.20	<0.20	<0.20	2.1	0.80	2.6	0.20	1.3	1.7
Dibromochloromethane	µg/L		0.10	<0.10	<0.10	<0.10	0.40	<0.40	0.10	<0.10	<0.10
Ethylene Dibromide	µg/L		0.10	<0.10	<0.10	<0.10	0.40	<0.40	0.10	<0.10	<0.10
Tetrachloroethylene	µg/L		0.20	<0.20	<0.20	<0.20	0.80	<0.80	0.20	<0.20	<0.20
1,1,1,2-Tetrachloroethane	µg/L		0.10	<0.10	<0.10	<0.10	0.40	<0.40	0.10	<0.10	<0.10
Chlorobenzene	µg/L		0.10	<0.10	<0.10	<0.10	0.40	<0.40	0.10	<0.10	<0.10
Ethylbenzene	µg/L		0.10	<0.10	<0.10	0.13	0.40	<0.40	0.10	0.13	0.13
m & p-Xylene	µg/L		0.20	<0.20	<0.20	1.4	0.80	<0.80	0.20	0.71	1.1

Certified By: N Popnikolof

AGAT Laboratories

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http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 18Z366834

PROJECT: 64153.50

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Nicole Soucy

SAMPLING SITE:Kizell

SAMPLED BY:NS

O. Reg. 153(511) - VOCs (Water)

DATE RECEIVED: 2018-07-26 **DATE REPORTED: 2018-07-31**

		SAMPLE DESCRIPTION:		MW18-9	MW18-10S	MW18-10D		MW18-11		MW18-12	MW18-13
		SAMPLE TYPE:		Water	Water	Water		Water		Water	Water
		DATE SAMPLED:		2018-07-26	2018-07-26	2018-07-26		2018-07-26		2018-07-26	2018-07-26
Parameter	**Unit**	**G / S**	**RDL**	**9428120**	**9428122**	**9428123**	**RDL**	**9428124**	**RDL**	**9428125**	**9428126**
Bromoform	µg/L		0.10	<0.10	<0.10	<0.10	0.40	<0.40	0.10	<0.10	<0.10
Styrene	µg/L		0.10	<0.10	<0.10	<0.10	0.40	<0.40	0.10	<0.10	<0.10
1,1,2,2-Tetrachloroethane	µg/L		0.10	<0.10	<0.10	<0.10	0.40	<0.40	0.10	<0.10	<0.10
o-Xylene	µg/L		0.10	<0.10	<0.10	0.56	0.40	<0.40	0.10	0.19	0.34
1,3-Dichlorobenzene	µg/L		0.10	<0.10	<0.10	<0.10	0.40	<0.40	0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L		0.10	<0.10	<0.10	<0.10	0.40	<0.40	0.10	<0.10	<0.10
1,2-Dichlorobenzene	µg/L		0.10	<0.10	<0.10	<0.10	0.40	<0.40	0.10	<0.10	<0.10
1,3-Dichloropropene	µg/L		0.30	<0.30	<0.30	<0.30	1.20	<1.20	0.30	<0.30	<0.30
Xylene Mixture	µg/L		0.20	<0.20	<0.20	2.0	0.80	<0.80	0.20	0.90	1.4
n-Hexane	µg/L		0.20	<0.20	<0.20	0.45	0.80	<0.80	0.20	<0.20	<0.20
Surrogate	**Unit**	**Acceptable Limits**									
Toluene-d8	% Recovery	50-140		99	98	105		107		98	89
4-Bromofluorobenzene	% Recovery	50-140		88	94	106		91		99	111

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

9428124 Dilution factor=4
The sample was diluted because it was foamy. The reporting detection limit has been corrected for the dilution factor used.

Certified By: N Popnikolof

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http://www.agatlabs.com

Quality Assurance

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

AGAT WORK ORDER: 18Z366834

PROJECT: 64153.50

ATTENTION TO: Nicole Soucy

SAMPLING SITE:Kizell

SAMPLED BY:NS

Trace Organics Analysis

RPT Date:			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 (Water)															
Dichlorodifluoromethane	9422402		< 0.20	< 0.20	NA	< 0.20	89%	50%	140%	80%	50%	140%	81%	50%	140%
Vinyl Chloride	9422402		< 0.17	< 0.17	NA	< 0.17	80%	50%	140%	98%	50%	140%	83%	50%	140%
Bromomethane	9422402		< 0.20	< 0.20	NA	< 0.20	116%	50%	140%	107%	50%	140%	78%	50%	140%
Trichlorofluoromethane	9422402		< 0.40	< 0.40	NA	< 0.40	100%	50%	140%	99%	50%	140%	111%	50%	140%
Acetone	9422402		< 1.0	< 1.0	NA	< 1.0	114%	50%	140%	90%	50%	140%	108%	50%	140%
1,1-Dichloroethylene	9422402		< 0.30	< 0.30	NA	< 0.30	73%	50%	140%	107%	60%	130%	93%	50%	140%
Methylene Chloride	9422402		< 0.30	< 0.30	NA	< 0.30	115%	50%	140%	95%	60%	130%	113%	50%	140%
trans- 1,2-Dichloroethylene	9422402		< 0.20	< 0.20	NA	< 0.20	78%	50%	140%	116%	60%	130%	108%	50%	140%
Methyl tert-butyl ether	9422402		< 0.20	< 0.20	NA	< 0.20	93%	50%	140%	88%	60%	130%	104%	50%	140%
1,1-Dichloroethane	9422402		< 0.30	< 0.30	NA	< 0.30	90%	50%	140%	87%	60%	130%	115%	50%	140%
Methyl Ethyl Ketone	9422402		< 1.0	< 1.0	NA	< 1.0	88%	50%	140%	91%	50%	140%	93%	50%	140%
cis- 1,2-Dichloroethylene	9422402		< 0.20	< 0.20	NA	< 0.20	72%	50%	140%	91%	60%	130%	81%	50%	140%
Chloroform	9422402		< 0.20	< 0.20	NA	< 0.20	93%	50%	140%	99%	60%	130%	107%	50%	140%
1,2-Dichloroethane	9422402		< 0.20	< 0.20	NA	< 0.20	83%	50%	140%	98%	60%	130%	96%	50%	140%
1,1,1-Trichloroethane	9422402		< 0.30	< 0.30	NA	< 0.30	77%	50%	140%	118%	60%	130%	108%	50%	140%
Carbon Tetrachloride	9422402		< 0.20	< 0.20	NA	< 0.20	82%	50%	140%	95%	60%	130%	81%	50%	140%
Benzene	9422402		< 0.20	< 0.20	NA	< 0.20	79%	50%	140%	89%	60%	130%	73%	50%	140%
1,2-Dichloropropane	9422402		< 0.20	< 0.20	NA	< 0.20	83%	50%	140%	75%	60%	130%	80%	50%	140%
Trichloroethylene	9422402		< 0.20	< 0.20	NA	< 0.20	77%	50%	140%	89%	60%	130%	97%	50%	140%
Bromodichloromethane	9422402		< 0.20	< 0.20	NA	< 0.20	77%	50%	140%	98%	60%	130%	100%	50%	140%
Methyl Isobutyl Ketone	9422402		< 1.0	< 1.0	NA	< 1.0	72%	50%	140%	109%	50%	140%	77%	50%	140%
1,1,2-Trichloroethane	9422402		< 0.20	< 0.20	NA	< 0.20	120%	50%	140%	81%	60%	130%	87%	50%	140%
Toluene	9422402		< 0.20	< 0.20	NA	< 0.20	100%	50%	140%	95%	60%	130%	90%	50%	140%
Dibromochloromethane	9422402		< 0.10	< 0.10	NA	< 0.10	117%	50%	140%	98%	60%	130%	91%	50%	140%
Ethylene Dibromide	9422402		< 0.10	< 0.10	NA	< 0.10	115%	50%	140%	100%	60%	130%	84%	50%	140%
Tetrachloroethylene	9422402		< 0.20	< 0.20	NA	< 0.20	106%	50%	140%	108%	60%	130%	97%	50%	140%
1,1,1,2-Tetrachloroethane	9422402		< 0.10	< 0.10	NA	< 0.10	98%	50%	140%	117%	60%	130%	107%	50%	140%
Chlorobenzene	9422402		< 0.10	< 0.10	NA	< 0.10	99%	50%	140%	114%	60%	130%	103%	50%	140%
Ethylbenzene	9422402		< 0.10	< 0.10	NA	< 0.10	89%	50%	140%	95%	60%	130%	83%	50%	140%
m & p-Xylene	9422402		< 0.20	< 0.20	NA	< 0.20	104%	50%	140%	109%	60%	130%	99%	50%	140%
Bromoform	9422402		< 0.10	< 0.10	NA	< 0.10	97%	50%	140%	111%	60%	130%	100%	50%	140%
Styrene	9422402		< 0.10	< 0.10	NA	< 0.10	86%	50%	140%	82%	60%	130%	79%	50%	140%
1,1,2,2-Tetrachloroethane	9422402		< 0.10	< 0.10	NA	< 0.10	90%	50%	140%	115%	60%	130%	96%	50%	140%
o-Xylene	9422402		< 0.10	< 0.10	NA	< 0.10	118%	50%	140%	117%	60%	130%	104%	50%	140%
1,3-Dichlorobenzene	9422402		< 0.10	< 0.10	NA	< 0.10	85%	50%	140%	86%	60%	130%	108%	50%	140%
1,4-Dichlorobenzene	9422402		< 0.10	< 0.10	NA	< 0.10	89%	50%	140%	84%	60%	130%	117%	50%	140%
1,2-Dichlorobenzene	9422402		< 0.10	< 0.10	NA	< 0.10	90%	50%	140%	111%	60%	130%	105%	50%	140%
1,3-Dichloropropene	9422402		< 0.30	< 0.30	NA	< 0.30	90%	50%	140%	81%	60%	130%	81%	50%	140%
n-Hexane	9422402		< 0.20	< 0.20	NA	< 0.20	114%	50%	140%	97%	60%	130%	88%	50%	140%

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Quality Assurance

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

AGAT WORK ORDER: 18Z366834

PROJECT: 64153.50

ATTENTION TO: Nicole Soucy

SAMPLING SITE:Kizell

SAMPLED BY:NS

Trace Organics Analysis (Continued)

RPT Date:			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

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: N Popnikolof

AGAT Laboratories

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MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
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Method Summary

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

AGAT WORK ORDER: 18Z366834

PROJECT: 64153.50

ATTENTION TO: Nicole Soucy

SAMPLING SITE:Kizell

SAMPLED BY:NS

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
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
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

AGAT Laboratories

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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 #: 1873666834

Cooler Quantity: one on ice

Arrival Temperatures: 5.7 | 5.6 | 5.9

Custody Seal Intact: ☐Yes ☐No ☐N/A

Notes:

Report Information:

Company: GEMTEC
Contact: Nicole Soucy
Address: 32 Steacie Dr.

Phone: 613-836-1422 Fax:

Reports to be sent to:
1. Email: nicole.soucy@gemtec.ca
2. Email:

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: 64153.50
Site Location: Kizell
Sampled By: NS
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))	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	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
MW18-9	7/26/18		3	GW								X							
MW 18-10S	↓		↓	↓								X							
MW 18-10D												X							
MW 18-11												X							
MW 18-12												X							
MW 18-13												X							

Samples Relinquished By (Print Name and Sign): Nicole Soucy NS	Date: July 26/18	Time:	Samples Received By (Print Name and Sign): [illegible]	Date: 18-07-26	Time: 12h25
Samples Relinquished By (Print Name and Sign): UPS / FedEx	Date: 18-07-26	Time: 16h00	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 067369

Document ID: DIV-79-1511.014

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Date Issued: February 22, 2017

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Certificate of Analysis

GEMTEC Consulting Engineers and Scientists Limited

32 Steacie Drive
Kanata, ON K2K 2A9
Attn: Nicole Soucy

Client PO:
Project: 64153.50
Custody: 112283

Report Date: 24-Aug-2018
Order Date: 20-Aug-2018

Order #: 1834100

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
1834100-01	MW18-12 GW2

Approved By: Mark Foto

Mark Foto, M.Sc.
Lab Supervisor

Certificate of Analysis
Client: GEMTEC Consulting Engineers and Scientists Limited
Client PO:

Report Date: 24-Aug-2018
Order Date: 20-Aug-2018
Project Description: 64153.50

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
REG 153: VOCs by P&T GC/MS	EPA 624 - P&T GC-MS	23-Aug-18	24-Aug-18

Certificate of Analysis

Client: GEMTEC Consulting Engineers and Scientists Limited

Client PO:

Report Date: 24-Aug-2018

Order Date: 20-Aug-2018

Project Description: 64153.50

	Client ID:	MW18-12 GW2	-	-	-
	Sample Date:	08/10/2018 14:30	-	-	-
	Sample ID:	1834100-01	-	-	-
	MDL/Units	Water	-	-	-
Volatiles					
Acetone	5.0 ug/L	<5.0	-	-	-
Benzene	0.5 ug/L	<0.5	-	-	-
Bromodichloromethane	0.5 ug/L	<0.5	-	-	-
Bromoform	0.5 ug/L	<0.5	-	-	-
Bromomethane	0.5 ug/L	<0.5	-	-	-
Carbon Tetrachloride	0.2 ug/L	<0.2	-	-	-
Chlorobenzene	0.5 ug/L	<0.5	-	-	-
Chloroform	0.5 ug/L	<0.5	-	-	-
Dibromochloromethane	0.5 ug/L	<0.5	-	-	-
Dichlorodifluoromethane	1.0 ug/L	<1.0	-	-	-
1,2-Dichlorobenzene	0.5 ug/L	<0.5	-	-	-
1,3-Dichlorobenzene	0.5 ug/L	<0.5	-	-	-
1,4-Dichlorobenzene	0.5 ug/L	<0.5	-	-	-
1,1-Dichloroethane	0.5 ug/L	<0.5	-	-	-
1,2-Dichloroethane	0.5 ug/L	<0.5	-	-	-
1,1-Dichloroethylene	0.5 ug/L	<0.5	-	-	-
cis-1,2-Dichloroethylene	0.5 ug/L	<0.5	-	-	-
trans-1,2-Dichloroethylene	0.5 ug/L	<0.5	-	-	-
1,2-Dichloropropane	0.5 ug/L	<0.5	-	-	-
cis-1,3-Dichloropropylene	0.5 ug/L	<0.5	-	-	-
trans-1,3-Dichloropropylene	0.5 ug/L	<0.5	-	-	-
1,3-Dichloropropene, total	0.5 ug/L	<0.5	-	-	-
Ethylbenzene	0.5 ug/L	<0.5	-	-	-
Ethylene dibromide (dibromoethan	0.2 ug/L	<0.2	-	-	-
Hexane	1.0 ug/L	<1.0	-	-	-
Methyl Ethyl Ketone (2-Butanone)	5.0 ug/L	<5.0	-	-	-
Methyl Isobutyl Ketone	5.0 ug/L	<5.0	-	-	-
Methyl tert-butyl ether	2.0 ug/L	<2.0	-	-	-
Methylene Chloride	5.0 ug/L	<5.0	-	-	-
Styrene	0.5 ug/L	<0.5	-	-	-
1,1,1,2-Tetrachloroethane	0.5 ug/L	<0.5	-	-	-
1,1,2,2-Tetrachloroethane	0.5 ug/L	<0.5	-	-	-
Tetrachloroethylene	0.5 ug/L	<0.5	-	-	-
Toluene	0.5 ug/L	<0.5	-	-	-
1,1,1-Trichloroethane	0.5 ug/L	<0.5	-	-	-

Certificate of Analysis

Client: GEMTEC Consulting Engineers and Scientists Limited

Client PO:

Report Date: 24-Aug-2018

Order Date: 20-Aug-2018

Project Description: 64153.50

	Client ID:	MW18-12 GW2	-	-	-
	Sample Date:	08/10/2018 14:30	-	-	-
	Sample ID:	1834100-01	-	-	-
	MDL/Units	Water	-	-	-
1,1,2-Trichloroethane	0.5 ug/L	<0.5	-	-	-
Trichloroethylene	0.5 ug/L	<0.5	-	-	-
Trichlorofluoromethane	1.0 ug/L	<1.0	-	-	-
Vinyl chloride	0.5 ug/L	<0.5	-	-	-
m,p-Xylenes	0.5 ug/L	<0.5	-	-	-
o-Xylene	0.5 ug/L	<0.5	-	-	-
Xylenes, total	0.5 ug/L	<0.5	-	-	-
4-Bromofluorobenzene	Surrogate	95.8%	-	-	-
Dibromofluoromethane	Surrogate	102%	-	-	-
Toluene-d8	Surrogate	98.4%	-	-	-

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Volatiles									
Acetone	ND	5.0	ug/L						
Benzene	ND	0.5	ug/L						
Bromodichloromethane	ND	0.5	ug/L						
Bromoform	ND	0.5	ug/L						
Bromomethane	ND	0.5	ug/L						
Carbon Tetrachloride	ND	0.2	ug/L						
Chlorobenzene	ND	0.5	ug/L						
Chloroform	ND	0.5	ug/L						
Dibromochloromethane	ND	0.5	ug/L						
Dichlorodifluoromethane	ND	1.0	ug/L						
1,2-Dichlorobenzene	ND	0.5	ug/L						
1,3-Dichlorobenzene	ND	0.5	ug/L						
1,4-Dichlorobenzene	ND	0.5	ug/L						
1,1-Dichloroethane	ND	0.5	ug/L						
1,2-Dichloroethane	ND	0.5	ug/L						
1,1-Dichloroethylene	ND	0.5	ug/L						
cis-1,2-Dichloroethylene	ND	0.5	ug/L						
trans-1,2-Dichloroethylene	ND	0.5	ug/L						
1,2-Dichloropropane	ND	0.5	ug/L						
cis-1,3-Dichloropropylene	ND	0.5	ug/L						
trans-1,3-Dichloropropylene	ND	0.5	ug/L						
1,3-Dichloropropene, total	ND	0.5	ug/L						
Ethylbenzene	ND	0.5	ug/L						
Ethylene dibromide (dibromoethane	ND	0.2	ug/L						
Hexane	ND	1.0	ug/L						
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L						
Methyl Isobutyl Ketone	ND	5.0	ug/L						
Methyl tert-butyl ether	ND	2.0	ug/L						
Methylene Chloride	ND	5.0	ug/L						
Styrene	ND	0.5	ug/L						
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L						
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L						
Tetrachloroethylene	ND	0.5	ug/L						
Toluene	ND	0.5	ug/L						
1,1,1-Trichloroethane	ND	0.5	ug/L						
1,1,2-Trichloroethane	ND	0.5	ug/L						
Trichloroethylene	ND	0.5	ug/L						
Trichlorofluoromethane	ND	1.0	ug/L						
Vinyl chloride	ND	0.5	ug/L						
m,p-Xylenes	ND	0.5	ug/L						
o-Xylene	ND	0.5	ug/L						
Xylenes, total	ND	0.5	ug/L						
Surrogate: 4-Bromofluorobenzene	*82.1*		*ug/L*		*103*	*50-140*			
Surrogate: Dibromofluoromethane	*69.7*		*ug/L*		*87.1*	*50-140*			
Surrogate: Toluene-d8	*88.0*		*ug/L*		*110*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Volatiles									
Acetone	ND	5.0	ug/L	ND				30	
Benzene	ND	0.5	ug/L	ND				30	
Bromodichloromethane	ND	0.5	ug/L	ND				30	
Bromoform	ND	0.5	ug/L	ND				30	
Bromomethane	ND	0.5	ug/L	ND				30	
Carbon Tetrachloride	ND	0.2	ug/L	ND				30	
Chlorobenzene	ND	0.5	ug/L	ND				30	
Chloroform	ND	0.5	ug/L	ND				30	
Dibromochloromethane	ND	0.5	ug/L	ND				30	
Dichlorodifluoromethane	ND	1.0	ug/L	ND				30	
1,2-Dichlorobenzene	ND	0.5	ug/L	ND				30	
1,3-Dichlorobenzene	ND	0.5	ug/L	ND				30	
1,4-Dichlorobenzene	ND	0.5	ug/L	ND				30	
1,1-Dichloroethane	ND	0.5	ug/L	ND				30	
1,2-Dichloroethane	ND	0.5	ug/L	ND				30	
1,1-Dichloroethylene	ND	0.5	ug/L	ND				30	
cis-1,2-Dichloroethylene	ND	0.5	ug/L	ND				30	
trans-1,2-Dichloroethylene	ND	0.5	ug/L	ND				30	
1,2-Dichloropropane	ND	0.5	ug/L	ND				30	
cis-1,3-Dichloropropylene	ND	0.5	ug/L	ND				30	
trans-1,3-Dichloropropylene	ND	0.5	ug/L	ND				30	
Ethylbenzene	ND	0.5	ug/L	ND				30	
Ethylene dibromide (dibromoethane	ND	0.2	ug/L	ND				30	
Hexane	ND	1.0	ug/L	ND				30	
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L	ND				30	
Methyl Isobutyl Ketone	ND	5.0	ug/L	ND				30	
Methyl tert-butyl ether	ND	2.0	ug/L	ND				30	
Methylene Chloride	ND	5.0	ug/L	ND				30	
Styrene	ND	0.5	ug/L	ND				30	
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L	ND				30	
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L	ND				30	
Tetrachloroethylene	ND	0.5	ug/L	ND				30	
Toluene	ND	0.5	ug/L	ND				30	
1,1,1-Trichloroethane	ND	0.5	ug/L	ND				30	
1,1,2-Trichloroethane	ND	0.5	ug/L	ND				30	
Trichloroethylene	ND	0.5	ug/L	ND				30	
Trichlorofluoromethane	ND	1.0	ug/L	ND				30	
Vinyl chloride	ND	0.5	ug/L	ND				30	
m,p-Xylenes	ND	0.5	ug/L	ND				30	
o-Xylene	ND	0.5	ug/L	ND				30	
Surrogate: 4-Bromofluorobenzene	*76.7*		*ug/L*		*95.9*	*50-140*			
Surrogate: Dibromofluoromethane	*78.6*		*ug/L*		*98.2*	*50-140*			
Surrogate: Toluene-d8	*79.2*		*ug/L*		*99.0*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Volatiles									
Acetone	88.3	5.0	ug/L	ND	88.3	50-140			
Benzene	35.4	0.5	ug/L	ND	88.5	50-140			
Bromodichloromethane	44.0	0.5	ug/L	3.47	101	50-140			
Bromoform	35.0	0.5	ug/L	ND	87.6	50-140			
Bromomethane	36.4	0.5	ug/L	ND	91.1	50-140			
Carbon Tetrachloride	40.8	0.2	ug/L	ND	102	50-140			
Chlorobenzene	31.5	0.5	ug/L	ND	78.8	50-140			
Chloroform	51.6	0.5	ug/L	7.94	109	50-140			
Dibromochloromethane	40.6	0.5	ug/L	2.55	95.1	50-140			
Dichlorodifluoromethane	40.0	1.0	ug/L	ND	100	50-140			
1,2-Dichlorobenzene	32.5	0.5	ug/L	ND	81.3	50-140			
1,3-Dichlorobenzene	33.8	0.5	ug/L	ND	84.6	50-140			
1,4-Dichlorobenzene	37.4	0.5	ug/L	ND	93.5	50-140			
1,1-Dichloroethane	49.6	0.5	ug/L	ND	124	50-140			
1,2-Dichloroethane	42.3	0.5	ug/L	ND	106	50-140			
1,1-Dichloroethylene	36.3	0.5	ug/L	ND	90.7	50-140			
cis-1,2-Dichloroethylene	36.5	0.5	ug/L	ND	91.4	50-140			
trans-1,2-Dichloroethylene	37.5	0.5	ug/L	ND	93.7	50-140			
1,2-Dichloropropane	38.1	0.5	ug/L	ND	95.2	50-140			
cis-1,3-Dichloropropylene	37.9	0.5	ug/L	ND	94.8	50-140			
trans-1,3-Dichloropropylene	32.9	0.5	ug/L	ND	82.3	50-140			
Ethylbenzene	29.9	0.5	ug/L	ND	74.8	50-140			
Ethylene dibromide (dibromoethane	36.6	0.2	ug/L	ND	91.5	50-140			
Hexane	26.1	1.0	ug/L	ND	65.4	50-140			
Methyl Ethyl Ketone (2-Butanone)	104	5.0	ug/L	ND	104	50-140			
Methyl Isobutyl Ketone	72.7	5.0	ug/L	ND	72.7	50-140			
Methyl tert-butyl ether	108	2.0	ug/L	ND	108	50-140			
Methylene Chloride	37.1	5.0	ug/L	ND	92.7	50-140			
Styrene	1.26	0.5	ug/L	ND	3.15	50-140			
1,1,1,2-Tetrachloroethane	37.7	0.5	ug/L	ND	94.2	50-140			
1,1,2,2-Tetrachloroethane	36.5	0.5	ug/L	ND	91.2	50-140			
Tetrachloroethylene	37.2	0.5	ug/L	ND	92.9	50-140			
Toluene	33.5	0.5	ug/L	ND	83.8	50-140			
1,1,1-Trichloroethane	39.1	0.5	ug/L	ND	97.8	50-140			
1,1,2-Trichloroethane	40.6	0.5	ug/L	ND	101	50-140			
Trichloroethylene	34.0	0.5	ug/L	ND	85.0	50-140			
Trichlorofluoromethane	44.5	1.0	ug/L	ND	111	50-140			
Vinyl chloride	40.8	0.5	ug/L	ND	102	50-140			
m,p-Xylenes	68.7	0.5	ug/L	ND	85.9	50-140			
o-Xylene	28.7	0.5	ug/L	ND	71.8	50-140			
Surrogate: 4-Bromofluorobenzene	*66.8*		*ug/L*		*83.5*	*50-140*			

Qualifier Notes:

Login Qualifiers :

Container(s) - Bottle and COC sample ID don't match -
Applies to samples: MW18-12 GW2

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable
ND: Not Detected
MDL: Method Detection Limit
Source Result: Data used as source for matrix and duplicate samples
%REC: Percent recovery.
RPD: Relative percent difference.

PARACEL LABORATORIES LTD.

Paracel ID: 1834100

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300-2319 St. Laurent Blvd.
Ottawa, Ontario K1G 4J8
p: 1-800-749-1947
e: paracel@paracellabs.com

Chain of Custody (Lab Use Only)

№ 112283

Page 1 of 1

Client Name: GEMTEC	Project Reference: 64153.50	**Turnaround Time:**	
Contact Name: NS	Quote #	☐ 1 Day	☐ 3 Day
Address: 32 Steacie Dr.	PO #		
	Email Address:	☐ 2 Day	☒ Regular
Telephone: 613-836-1422	nicole.soucy@gemtec.ca	Date Required:	

Criteria: ☒ O. Reg. 153/04 (As Amended) Table __ ☐ RSC Filing ☐ O. Reg. 558/00 ☐ PWQO ☐ CCME ☐ SUB (Storm) ☐ SUB (Sanitary) Municipality: ______ ☐ Other: ______

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

Required Analyses

Paracel Order Number: 1834100

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken Date	Sample Taken Time	PHCs F1-F4+BTEX	VOCs	PAHs	Metals by ICP	Hg	CrVI	B (HWS)									
1	MW18-12 GW2	GW		2	8/10/18	2:30pm		x														
2					~~8/20/18~~																	
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						

Comments: :- sample ID on 2 bottles read = MW18-12 GS2. → Should read GW as per Nicole. SC

Method of Delivery: walk-in

Relinquished By (Sign): [signature]	Received by Driver/Depot: Kevin [signature]	Received at Lab: Suneetaroi Dohmai	Verified By: [signature]
Relinquished By (Print): Lucas, Moren	Date/Time: Aug 20/18 11:41	Date/Time: Aug 20, 2018 04.15	Date/Time: Aug 20/18 4:21pm
Date/Time: Aug 20/18	Temperature: 9.2 °C	Temperature: 10.4 °C	pH Verified [ ] By:

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Certificate of Analysis

GEMTEC Consulting Engineers and Scientists Limited

32 Steacie Drive
Kanata, ON K2K 2A9
Attn: Nicole Soucy

Client PO:
Project: 64153.50
Custody: 120061

Report Date: 11-Dec-2018
Order Date: 6-Dec-2018

Order #: 1849504

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
1849504-01	BH 18-10 S GW1
1849504-02	BH 18-10 D GW1
1849504-03	BH 18-13 GW1
1849504-04	BH 18-9 GW1
1849504-05	BH 18-9 GW101
1849504-06	BH 18-11 GW1
1849504-07	BH 18-12 GW1

Approved By:

Mark Foto, M.Sc.
Lab Supervisor

Certificate of Analysis
Client: GEMTEC Consulting Engineers and Scientists Limited
Client PO:

Report Date: 11-Dec-2018
Order Date: 6-Dec-2018
Project Description: 64153.50

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
REG 153: VOCs by P&T GC/MS	EPA 624 - P&T GC-MS	7-Dec-18	8-Dec-18

Certificate of Analysis

Client: GEMTEC Consulting Engineers and Scientists Limited

Client PO:

Report Date: 11-Dec-2018

Order Date: 6-Dec-2018

Project Description: 64153.50

	Client ID:	BH 18-10 S GW1	BH 18-10 D GW1	BH 18-13 GW1	BH 18-9 GW1
	Sample Date:	12/06/2018 09:00	12/06/2018 09:00	12/06/2018 09:00	12/06/2018 09:00
	Sample ID:	1849504-01	1849504-02	1849504-03	1849504-04
	MDL/Units	Water	Water	Water	Water
Volatiles					
Acetone	5.0 ug/L	<5.0	<5.0	<5.0	<5.0
Benzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Bromoform	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Bromomethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Carbon Tetrachloride	0.2 ug/L	<0.2	<0.2	<0.2	<0.2
Chlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Chloroform	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Dichlorodifluoromethane	1.0 ug/L	<1.0	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
cis-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
trans-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,3-Dichloropropene, total	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Ethylene dibromide (dibromoethan	0.2 ug/L	<0.2	<0.2	<0.2	<0.2
Hexane	1.0 ug/L	<1.0	<1.0	<1.0	<1.0
Methyl Ethyl Ketone (2-Butanone)	5.0 ug/L	<5.0	<5.0	<5.0	<5.0
Methyl Isobutyl Ketone	5.0 ug/L	<5.0	<5.0	<5.0	<5.0
Methyl tert-butyl ether	2.0 ug/L	<2.0	<2.0	<2.0	<2.0
Methylene Chloride	5.0 ug/L	<5.0	<5.0	<5.0	<5.0
Styrene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,1,1,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Tetrachloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Toluene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5

Certificate of Analysis

Client: GEMTEC Consulting Engineers and Scientists Limited

Client PO:

Report Date: 11-Dec-2018

Order Date: 6-Dec-2018

Project Description: 64153.50

	Client ID:	BH 18-10 S GW1	BH 18-10 D GW1	BH 18-13 GW1	BH 18-9 GW1
	Sample Date:	12/06/2018 09:00	12/06/2018 09:00	12/06/2018 09:00	12/06/2018 09:00
	Sample ID:	1849504-01	1849504-02	1849504-03	1849504-04
	MDL/Units	Water	Water	Water	Water
1,1,2-Trichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Trichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane	1.0 ug/L	<1.0	<1.0	<1.0	<1.0
Vinyl chloride	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
m,p-Xylenes	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
o-Xylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Xylenes, total	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
4-Bromofluorobenzene	Surrogate	100%	102%	103%	110%
Dibromofluoromethane	Surrogate	119%	113%	117%	113%
Toluene-d8	Surrogate	96.6%	103%	102%	109%

Certificate of Analysis

Client: GEMTEC Consulting Engineers and Scientists Limited

Client PO:

Report Date: 11-Dec-2018

Order Date: 6-Dec-2018

Project Description: 64153.50

	Client ID:	BH 18-9 GW101	BH 18-11 GW1	BH 18-12 GW1	-
	Sample Date:	12/06/2018 09:00	12/06/2018 09:00	12/06/2018 09:00	-
	Sample ID:	1849504-05	1849504-06	1849504-07	-
	MDL/Units	Water	Water	Water	-
Volatiles					
Acetone	5.0 ug/L	<5.0	<5.0	<5.0	-
Benzene	0.5 ug/L	<0.5	<0.5	<0.5	-
Bromodichloromethane	0.5 ug/L	<0.5	<0.5	<0.5	-
Bromoform	0.5 ug/L	<0.5	<0.5	<0.5	-
Bromomethane	0.5 ug/L	<0.5	<0.5	<0.5	-
Carbon Tetrachloride	0.2 ug/L	<0.2	<0.2	<0.2	-
Chlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	-
Chloroform	0.5 ug/L	<0.5	<0.5	<0.5	-
Dibromochloromethane	0.5 ug/L	<0.5	<0.5	<0.5	-
Dichlorodifluoromethane	1.0 ug/L	<1.0	<1.0	<1.0	-
1,2-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	-
1,3-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	-
1,4-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	-
1,1-Dichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	-
1,2-Dichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	-
1,1-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	-
cis-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	-
trans-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	-
1,2-Dichloropropane	0.5 ug/L	<0.5	<0.5	<0.5	-
cis-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	<0.5	-
trans-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	<0.5	-
1,3-Dichloropropene, total	0.5 ug/L	<0.5	<0.5	<0.5	-
Ethylbenzene	0.5 ug/L	<0.5	<0.5	<0.5	-
Ethylene dibromide (dibromoethar	0.2 ug/L	<0.2	<0.2	<0.2	-
Hexane	1.0 ug/L	<1.0	<1.0	<1.0	-
Methyl Ethyl Ketone (2-Butanone)	5.0 ug/L	<5.0	<5.0	<5.0	-
Methyl Isobutyl Ketone	5.0 ug/L	<5.0	<5.0	<5.0	-
Methyl tert-butyl ether	2.0 ug/L	<2.0	<2.0	<2.0	-
Methylene Chloride	5.0 ug/L	<5.0	<5.0	<5.0	-
Styrene	0.5 ug/L	<0.5	<0.5	<0.5	-
1,1,1,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	<0.5	-
1,1,2,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	<0.5	-
Tetrachloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	-
Toluene	0.5 ug/L	<0.5	<0.5	<0.5	-

Certificate of Analysis

Client: GEMTEC Consulting Engineers and Scientists Limited

Client PO:

Report Date: 11-Dec-2018

Order Date: 6-Dec-2018

Project Description: 64153.50

	Client ID:	BH 18-9 GW101	BH 18-11 GW1	BH 18-12 GW1	-
	Sample Date:	12/06/2018 09:00	12/06/2018 09:00	12/06/2018 09:00	-
	Sample ID:	1849504-05	1849504-06	1849504-07	-
	MDL/Units	Water	Water	Water	-
1,1,1-Trichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	-
1,1,2-Trichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	-
Trichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	-
Trichlorofluoromethane	1.0 ug/L	<1.0	<1.0	<1.0	-
Vinyl chloride	0.5 ug/L	<0.5	<0.5	<0.5	-
m,p-Xylenes	0.5 ug/L	<0.5	<0.5	<0.5	-
o-Xylene	0.5 ug/L	<0.5	<0.5	<0.5	-
Xylenes, total	0.5 ug/L	<0.5	<0.5	<0.5	-
4-Bromofluorobenzene	Surrogate	111%	112%	105%	-
Dibromofluoromethane	Surrogate	116%	113%	110%	-
Toluene-d8	Surrogate	101%	103%	96.8%	-

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Volatiles									
Acetone	ND	5.0	ug/L						
Benzene	ND	0.5	ug/L						
Bromodichloromethane	ND	0.5	ug/L						
Bromoform	ND	0.5	ug/L						
Bromomethane	ND	0.5	ug/L						
Carbon Tetrachloride	ND	0.2	ug/L						
Chlorobenzene	ND	0.5	ug/L						
Chloroform	ND	0.5	ug/L						
Dibromochloromethane	ND	0.5	ug/L						
Dichlorodifluoromethane	ND	1.0	ug/L						
1,2-Dichlorobenzene	ND	0.5	ug/L						
1,3-Dichlorobenzene	ND	0.5	ug/L						
1,4-Dichlorobenzene	ND	0.5	ug/L						
1,1-Dichloroethane	ND	0.5	ug/L						
1,2-Dichloroethane	ND	0.5	ug/L						
1,1-Dichloroethylene	ND	0.5	ug/L						
cis-1,2-Dichloroethylene	ND	0.5	ug/L						
trans-1,2-Dichloroethylene	ND	0.5	ug/L						
1,2-Dichloropropane	ND	0.5	ug/L						
cis-1,3-Dichloropropylene	ND	0.5	ug/L						
trans-1,3-Dichloropropylene	ND	0.5	ug/L						
1,3-Dichloropropene, total	ND	0.5	ug/L						
Ethylbenzene	ND	0.5	ug/L						
Ethylene dibromide (dibromoethane	ND	0.2	ug/L						
Hexane	ND	1.0	ug/L						
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L						
Methyl Isobutyl Ketone	ND	5.0	ug/L						
Methyl tert-butyl ether	ND	2.0	ug/L						
Methylene Chloride	ND	5.0	ug/L						
Styrene	ND	0.5	ug/L						
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L						
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L						
Tetrachloroethylene	ND	0.5	ug/L						
Toluene	ND	0.5	ug/L						
1,1,1-Trichloroethane	ND	0.5	ug/L						
1,1,2-Trichloroethane	ND	0.5	ug/L						
Trichloroethylene	ND	0.5	ug/L						
Trichlorofluoromethane	ND	1.0	ug/L						
Vinyl chloride	ND	0.5	ug/L						
m,p-Xylenes	ND	0.5	ug/L						
o-Xylene	ND	0.5	ug/L						
Xylenes, total	ND	0.5	ug/L						
Surrogate: 4-Bromofluorobenzene	*88.8*		*ug/L*		*111*	*50-140*			
Surrogate: Dibromofluoromethane	*85.9*		*ug/L*		*107*	*50-140*			
Surrogate: Toluene-d8	*79.0*		*ug/L*		*98.7*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Volatiles									
Acetone	ND	5.0	ug/L	ND				30	
Benzene	ND	0.5	ug/L	ND				30	
Bromodichloromethane	ND	0.5	ug/L	ND				30	
Bromoform	ND	0.5	ug/L	ND				30	
Bromomethane	ND	0.5	ug/L	ND				30	
Carbon Tetrachloride	ND	0.2	ug/L	ND				30	
Chlorobenzene	ND	0.5	ug/L	ND				30	
Chloroform	ND	0.5	ug/L	ND				30	
Dibromochloromethane	ND	0.5	ug/L	ND				30	
Dichlorodifluoromethane	ND	1.0	ug/L	ND				30	
1,2-Dichlorobenzene	ND	0.5	ug/L	ND				30	
1,3-Dichlorobenzene	ND	0.5	ug/L	ND				30	
1,4-Dichlorobenzene	ND	0.5	ug/L	ND				30	
1,1-Dichloroethane	ND	0.5	ug/L	ND				30	
1,2-Dichloroethane	ND	0.5	ug/L	ND				30	
1,1-Dichloroethylene	ND	0.5	ug/L	ND				30	
cis-1,2-Dichloroethylene	ND	0.5	ug/L	ND				30	
trans-1,2-Dichloroethylene	ND	0.5	ug/L	ND				30	
1,2-Dichloropropane	ND	0.5	ug/L	ND				30	
cis-1,3-Dichloropropylene	ND	0.5	ug/L	ND				30	
trans-1,3-Dichloropropylene	ND	0.5	ug/L	ND				30	
Ethylbenzene	ND	0.5	ug/L	ND				30	
Ethylene dibromide (dibromoethane	ND	0.2	ug/L	ND				30	
Hexane	ND	1.0	ug/L	ND				30	
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L	ND				30	
Methyl Isobutyl Ketone	ND	5.0	ug/L	ND				30	
Methyl tert-butyl ether	ND	2.0	ug/L	ND				30	
Methylene Chloride	ND	5.0	ug/L	ND				30	
Styrene	ND	0.5	ug/L	ND				30	
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L	ND				30	
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L	ND				30	
Tetrachloroethylene	ND	0.5	ug/L	ND				30	
Toluene	ND	0.5	ug/L	ND				30	
1,1,1-Trichloroethane	ND	0.5	ug/L	ND				30	
1,1,2-Trichloroethane	ND	0.5	ug/L	ND				30	
Trichloroethylene	ND	0.5	ug/L	ND				30	
Trichlorofluoromethane	ND	1.0	ug/L	ND				30	
Vinyl chloride	ND	0.5	ug/L	ND				30	
m,p-Xylenes	ND	0.5	ug/L	ND				30	
o-Xylene	ND	0.5	ug/L	ND				30	
Surrogate: 4-Bromofluorobenzene	*93.5*		*ug/L*		*117*	*50-140*			
Surrogate: Dibromofluoromethane	*93.9*		*ug/L*		*117*	*50-140*			
Surrogate: Toluene-d8	*85.8*		*ug/L*		*107*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Volatiles									
Acetone	69.6	5.0	ug/L		69.6	50-140			
Benzene	38.4	0.5	ug/L		95.9	60-130			
Bromodichloromethane	42.1	0.5	ug/L		105	60-130			
Bromoform	31.8	0.5	ug/L		79.4	60-130			
Bromomethane	42.4	0.5	ug/L		106	50-140			
Carbon Tetrachloride	35.2	0.2	ug/L		88.1	60-130			
Chlorobenzene	39.2	0.5	ug/L		98.0	60-130			
Chloroform	41.8	0.5	ug/L		105	60-130			
Dibromochloromethane	33.6	0.5	ug/L		83.9	60-130			
Dichlorodifluoromethane	43.3	1.0	ug/L		108	50-140			
1,2-Dichlorobenzene	31.2	0.5	ug/L		78.1	60-130			
1,3-Dichlorobenzene	30.5	0.5	ug/L		76.2	60-130			
1,4-Dichlorobenzene	39.7	0.5	ug/L		99.3	60-130			
1,1-Dichloroethane	43.6	0.5	ug/L		109	60-130			
1,2-Dichloroethane	38.2	0.5	ug/L		95.4	60-130			
1,1-Dichloroethylene	42.2	0.5	ug/L		106	60-130			
cis-1,2-Dichloroethylene	39.9	0.5	ug/L		99.7	60-130			
trans-1,2-Dichloroethylene	43.4	0.5	ug/L		109	60-130			
1,2-Dichloropropane	37.2	0.5	ug/L		93.0	60-130			
cis-1,3-Dichloropropylene	30.0	0.5	ug/L		75.0	60-130			
trans-1,3-Dichloropropylene	30.0	0.5	ug/L		75.1	60-130			
Ethylbenzene	39.0	0.5	ug/L		97.5	60-130			
Ethylene dibromide (dibromoethane	26.3	0.2	ug/L		65.8	60-130			
Hexane	35.7	1.0	ug/L		89.3	60-130			
Methyl Ethyl Ketone (2-Butanone)	79.5	5.0	ug/L		79.5	50-140			
Methyl Isobutyl Ketone	81.0	5.0	ug/L		81.0	50-140			
Methyl tert-butyl ether	83.0	2.0	ug/L		83.0	50-140			
Methylene Chloride	40.2	5.0	ug/L		100	60-130			
Styrene	27.2	0.5	ug/L		68.1	60-130			
1,1,1,2-Tetrachloroethane	38.5	0.5	ug/L		96.2	60-130			
1,1,2,2-Tetrachloroethane	31.3	0.5	ug/L		78.3	60-130			
Tetrachloroethylene	35.4	0.5	ug/L		88.6	60-130			
Toluene	40.5	0.5	ug/L		101	60-130			
1,1,1-Trichloroethane	36.0	0.5	ug/L		89.9	60-130			
1,1,2-Trichloroethane	32.9	0.5	ug/L		82.3	60-130			
Trichloroethylene	34.0	0.5	ug/L		85.0	60-130			
Trichlorofluoromethane	51.8	1.0	ug/L		129	60-130			
Vinyl chloride	51.3	0.5	ug/L		128	50-140			
m,p-Xylenes	88.2	0.5	ug/L		110	60-130			
o-Xylene	50.3	0.5	ug/L		126	60-130			
Surrogate: 4-Bromofluorobenzene	*57.6*		*ug/L*		*72.0*	*50-140*			

Qualifier Notes:

None

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable
ND: Not Detected
MDL: Method Detection Limit
Source Result: Data used as source for matrix and duplicate samples
%REC: Percent recovery.
RPD: Relative percent difference.

Paracel ID: 1849504

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Chain of Custody
(Lab Use Only)
№ 120061

Page 1 of 1

Client Name: Genivar.	Project Reference: 64153.50
Contact Name: Nicole Savoy.	Quote #
Address: 32 Steacie Drive	PO #
Telephone: 613 836 1422	Email Address: Nicole.Savoy@genivar.ca

Turnaround Time:
☐ 1 Day ☐ 3 Day
☐ 2 Day ☑ Regular
Date Required:

Criteria: ☒ O. Reg. 153/04 (As Amended) Table __ ☐ RSC Filing ☐ O. Reg. 558/00 ☐ PWQO ☐ CCME ☐ SUB (Storm) ☐ SUB (Sanitary) Municipality: ☐ Other:

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

Required Analyses

Paracel Order Number: 1849504

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken: Date	Sample Taken: Time	PHCs F1-F4+BTEX	VOCs	PAHs	Metals by ICP	Hg	CrVI	B (HWS)
1	BH 18-10 S GW-1	GW		2	Dec 6 2018			✓					
2	BH 18-10 D GW-1							✓					
3	BH 18-13 GW-1							✓					
4	BH 18-9 GW-1							✓					
5	BH 18-9 GW-101							✓					
6	BH 18-11 GW-1							✓					
7	BH 18-12 GW-1							✓					
8													
9													
10													

Comments:

Method of Delivery: Walk-in

Relinquished By (Sign): Mich L.	Received by Driver/Depot: Karen Gall	Received at Lab: Sasha	Verified By:
Relinquished By (Print):	Date/Time: Dec 6/18 1:50	Date/Time: Dec 6, 18 4:40	Date/Time: Dec 6/18 5:12
Date/Time: Dec 6, 2018 1:50 pm	Temperature: 6.4 °C	Temperature: 7.7 °C	pH Verified ☐ By:

Chain of Custody (Env) - Rev 0.7 Feb. 2016

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Certificate of Analysis

GEMTEC Consulting Engineers and Scientists Limited

32 Steacie Drive
Kanata, ON K2K 2A9
Attn: Nicole Soucy

Client PO:
Project: 64153.50
Custody: 121196

Report Date: 7-Mar-2019
Order Date: 1-Mar-2019

Order #: 1909515

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
1909515-01	BH18-9 GW2
1909515-02	BH18-10 S GW2
1909515-03	BH18-10 D GW2
1909515-04	BH18-11 GW2
1909515-05	BH18-12 GW2
1909515-06	BH18-9 GW102

Approved By:

Mark Foto, M.Sc.
Lab Supervisor

Certificate of Analysis
Client: GEMTEC Consulting Engineers and Scientists Limited
Client PO:

Report Date: 07-Mar-2019
Order Date: 1-Mar-2019
Project Description: 64153.50

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
REG 153: VOCs by P&T GC/MS	EPA 624 - P&T GC-MS	4-Mar-19	5-Mar-19

Certificate of Analysis

Client: GEMTEC Consulting Engineers and Scientists Limited

Client PO:

Report Date: 07-Mar-2019

Order Date: 1-Mar-2019

Project Description: 64153.50

	Client ID:	BH18-9 GW2	BH18-10 S GW2	BH18-10 D GW2	BH18-11 GW2
	Sample Date:	03/01/2019 00:00	03/01/2019 00:00	03/01/2019 00:00	03/01/2019 00:00
	Sample ID:	1909515-01	1909515-02	1909515-03	1909515-04
	MDL/Units	Water	Water	Water	Water
Volatiles					
Acetone	5.0 ug/L	<5.0	<5.0	<5.0	<5.0
Benzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Bromoform	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Bromomethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Carbon Tetrachloride	0.2 ug/L	<0.2	<0.2	<0.2	<0.2
Chlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Chloroform	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Dichlorodifluoromethane	1.0 ug/L	<1.0	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
cis-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
trans-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,3-Dichloropropene, total	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Ethylene dibromide (dibromoethan	0.2 ug/L	<0.2	<0.2	<0.2	<0.2
Hexane	1.0 ug/L	<1.0	<1.0	<1.0	<1.0
Methyl Ethyl Ketone (2-Butanone)	5.0 ug/L	<5.0	<5.0	<5.0	<5.0
Methyl Isobutyl Ketone	5.0 ug/L	<5.0	<5.0	<5.0	<5.0
Methyl tert-butyl ether	2.0 ug/L	<2.0	<2.0	<2.0	<2.0
Methylene Chloride	5.0 ug/L	<5.0	<5.0	<5.0	<5.0
Styrene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,1,1,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Tetrachloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Toluene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5

Certificate of Analysis

Report Date: 07-Mar-2019

Client: GEMTEC Consulting Engineers and Scientists Limited

Order Date: 1-Mar-2019

Client PO:

Project Description: 64153.50

	Client ID:	BH18-9 GW2	BH18-10 S GW2	BH18-10 D GW2	BH18-11 GW2
	Sample Date:	03/01/2019 00:00	03/01/2019 00:00	03/01/2019 00:00	03/01/2019 00:00
	Sample ID:	1909515-01	1909515-02	1909515-03	1909515-04
	MDL/Units	Water	Water	Water	Water
1,1,2-Trichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Trichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane	1.0 ug/L	<1.0	<1.0	<1.0	<1.0
Vinyl chloride	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
m,p-Xylenes	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
o-Xylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Xylenes, total	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
4-Bromofluorobenzene	Surrogate	120%	117%	112%	120%
Dibromofluoromethane	Surrogate	97.8%	98.7%	101%	94.6%
Toluene-d8	Surrogate	109%	108%	106%	105%

Certificate of Analysis

Client: GEMTEC Consulting Engineers and Scientists Limited

Client PO:

Report Date: 07-Mar-2019

Order Date: 1-Mar-2019

Project Description: 64153.50

	Client ID:	BH18-12 GW2	BH18-9 GW102	-	-
	Sample Date:	03/01/2019 00:00	03/01/2019 00:00	-	-
	Sample ID:	1909515-05	1909515-06	-	-
	MDL/Units	Water	Water	-	-
Volatiles					
Acetone	5.0 ug/L	<5.0	<5.0	-	-
Benzene	0.5 ug/L	<0.5	<0.5	-	-
Bromodichloromethane	0.5 ug/L	<0.5	<0.5	-	-
Bromoform	0.5 ug/L	<0.5	<0.5	-	-
Bromomethane	0.5 ug/L	<0.5	<0.5	-	-
Carbon Tetrachloride	0.2 ug/L	<0.2	<0.2	-	-
Chlorobenzene	0.5 ug/L	<0.5	<0.5	-	-
Chloroform	0.5 ug/L	<0.5	<0.5	-	-
Dibromochloromethane	0.5 ug/L	<0.5	<0.5	-	-
Dichlorodifluoromethane	1.0 ug/L	<1.0	<1.0	-	-
1,2-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	-	-
1,3-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	-	-
1,4-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	-	-
1,1-Dichloroethane	0.5 ug/L	<0.5	<0.5	-	-
1,2-Dichloroethane	0.5 ug/L	<0.5	<0.5	-	-
1,1-Dichloroethylene	0.5 ug/L	<0.5	<0.5	-	-
cis-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	-	-
trans-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	-	-
1,2-Dichloropropane	0.5 ug/L	<0.5	<0.5	-	-
cis-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	-	-
trans-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	-	-
1,3-Dichloropropene, total	0.5 ug/L	<0.5	<0.5	-	-
Ethylbenzene	0.5 ug/L	<0.5	<0.5	-	-
Ethylene dibromide (dibromoethar	0.2 ug/L	<0.2	<0.2	-	-
Hexane	1.0 ug/L	<1.0	<1.0	-	-
Methyl Ethyl Ketone (2-Butanone)	5.0 ug/L	<5.0	<5.0	-	-
Methyl Isobutyl Ketone	5.0 ug/L	<5.0	<5.0	-	-
Methyl tert-butyl ether	2.0 ug/L	<2.0	<2.0	-	-
Methylene Chloride	5.0 ug/L	<5.0	<5.0	-	-
Styrene	0.5 ug/L	<0.5	<0.5	-	-
1,1,1,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	-	-
1,1,2,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	-	-
Tetrachloroethylene	0.5 ug/L	<0.5	<0.5	-	-
Toluene	0.5 ug/L	<0.5	<0.5	-	-

Certificate of Analysis

Client: GEMTEC Consulting Engineers and Scientists Limited

Client PO:

Report Date: 07-Mar-2019

Order Date: 1-Mar-2019

Project Description: 64153.50

	Client ID:	BH18-12 GW2	BH18-9 GW102	-	-
	Sample Date:	03/01/2019 00:00	03/01/2019 00:00	-	-
	Sample ID:	1909515-05	1909515-06	-	-
	MDL/Units	Water	Water	-	-
1,1,1-Trichloroethane	0.5 ug/L	<0.5	<0.5	-	-
1,1,2-Trichloroethane	0.5 ug/L	<0.5	<0.5	-	-
Trichloroethylene	0.5 ug/L	<0.5	<0.5	-	-
Trichlorofluoromethane	1.0 ug/L	<1.0	<1.0	-	-
Vinyl chloride	0.5 ug/L	<0.5	<0.5	-	-
m,p-Xylenes	0.5 ug/L	<0.5	<0.5	-	-
o-Xylene	0.5 ug/L	<0.5	<0.5	-	-
Xylenes, total	0.5 ug/L	<0.5	<0.5	-	-
4-Bromofluorobenzene	Surrogate	127%	124%	-	-
Dibromofluoromethane	Surrogate	98.5%	96.9%	-	-
Toluene-d8	Surrogate	106%	109%	-	-

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Volatiles									
Acetone	ND	5.0	ug/L						
Benzene	ND	0.5	ug/L						
Bromodichloromethane	ND	0.5	ug/L						
Bromoform	ND	0.5	ug/L						
Bromomethane	ND	0.5	ug/L						
Carbon Tetrachloride	ND	0.2	ug/L						
Chlorobenzene	ND	0.5	ug/L						
Chloroform	ND	0.5	ug/L						
Dibromochloromethane	ND	0.5	ug/L						
Dichlorodifluoromethane	ND	1.0	ug/L						
1,2-Dichlorobenzene	ND	0.5	ug/L						
1,3-Dichlorobenzene	ND	0.5	ug/L						
1,4-Dichlorobenzene	ND	0.5	ug/L						
1,1-Dichloroethane	ND	0.5	ug/L						
1,2-Dichloroethane	ND	0.5	ug/L						
1,1-Dichloroethylene	ND	0.5	ug/L						
cis-1,2-Dichloroethylene	ND	0.5	ug/L						
trans-1,2-Dichloroethylene	ND	0.5	ug/L						
1,2-Dichloropropane	ND	0.5	ug/L						
cis-1,3-Dichloropropylene	ND	0.5	ug/L						
trans-1,3-Dichloropropylene	ND	0.5	ug/L						
1,3-Dichloropropene, total	ND	0.5	ug/L						
Ethylbenzene	ND	0.5	ug/L						
Ethylene dibromide (dibromoethane	ND	0.2	ug/L						
Hexane	ND	1.0	ug/L						
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L						
Methyl Isobutyl Ketone	ND	5.0	ug/L						
Methyl tert-butyl ether	ND	2.0	ug/L						
Methylene Chloride	ND	5.0	ug/L						
Styrene	ND	0.5	ug/L						
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L						
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L						
Tetrachloroethylene	ND	0.5	ug/L						
Toluene	ND	0.5	ug/L						
1,1,1-Trichloroethane	ND	0.5	ug/L						
1,1,2-Trichloroethane	ND	0.5	ug/L						
Trichloroethylene	ND	0.5	ug/L						
Trichlorofluoromethane	ND	1.0	ug/L						
Vinyl chloride	ND	0.5	ug/L						
m,p-Xylenes	ND	0.5	ug/L						
o-Xylene	ND	0.5	ug/L						
Xylenes, total	ND	0.5	ug/L						
Surrogate: 4-Bromofluorobenzene	*93.8*		*ug/L*		*117*	*50-140*			
Surrogate: Dibromofluoromethane	*78.9*		*ug/L*		*98.6*	*50-140*			
Surrogate: Toluene-d8	*82.7*		*ug/L*		*103*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Volatiles									
Acetone	ND	5.0	ug/L	ND				30	
Benzene	ND	0.5	ug/L	ND				30	
Bromodichloromethane	ND	0.5	ug/L	ND				30	
Bromoform	ND	0.5	ug/L	ND				30	
Bromomethane	ND	0.5	ug/L	ND				30	
Carbon Tetrachloride	ND	0.2	ug/L	ND				30	
Chlorobenzene	ND	0.5	ug/L	ND				30	
Chloroform	2.46	0.5	ug/L	3.22			26.8	30	
Dibromochloromethane	ND	0.5	ug/L	ND				30	
Dichlorodifluoromethane	ND	1.0	ug/L	ND				30	
1,2-Dichlorobenzene	ND	0.5	ug/L	ND				30	
1,3-Dichlorobenzene	ND	0.5	ug/L	ND				30	
1,4-Dichlorobenzene	ND	0.5	ug/L	ND				30	
1,1-Dichloroethane	ND	0.5	ug/L	ND				30	
1,2-Dichloroethane	ND	0.5	ug/L	ND				30	
1,1-Dichloroethylene	ND	0.5	ug/L	ND				30	
cis-1,2-Dichloroethylene	ND	0.5	ug/L	ND				30	
trans-1,2-Dichloroethylene	ND	0.5	ug/L	ND				30	
1,2-Dichloropropane	ND	0.5	ug/L	ND				30	
cis-1,3-Dichloropropylene	ND	0.5	ug/L	ND				30	
trans-1,3-Dichloropropylene	ND	0.5	ug/L	ND				30	
Ethylbenzene	ND	0.5	ug/L	ND				30	
Ethylene dibromide (dibromoethane	ND	0.2	ug/L	ND				30	
Hexane	ND	1.0	ug/L	ND				30	
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L	ND				30	
Methyl Isobutyl Ketone	ND	5.0	ug/L	ND				30	
Methyl tert-butyl ether	ND	2.0	ug/L	ND				30	
Methylene Chloride	ND	5.0	ug/L	ND				30	
Styrene	ND	0.5	ug/L	ND				30	
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L	ND				30	
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L	ND				30	
Tetrachloroethylene	ND	0.5	ug/L	ND				30	
Toluene	ND	0.5	ug/L	ND				30	
1,1,1-Trichloroethane	ND	0.5	ug/L	ND				30	
1,1,2-Trichloroethane	ND	0.5	ug/L	ND				30	
Trichloroethylene	ND	0.5	ug/L	ND				30	
Trichlorofluoromethane	ND	1.0	ug/L	ND				30	
Vinyl chloride	ND	0.5	ug/L	ND				30	
m,p-Xylenes	ND	0.5	ug/L	ND				30	
o-Xylene	ND	0.5	ug/L	ND				30	
Surrogate: 4-Bromofluorobenzene	*95.9*		*ug/L*		*120*	*50-140*			
Surrogate: Dibromofluoromethane	*77.0*		*ug/L*		*96.2*	*50-140*			
Surrogate: Toluene-d8	*84.9*		*ug/L*		*106*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Volatiles									
Acetone	85.7	5.0	ug/L		85.7	50-140			
Benzene	41.0	0.5	ug/L		103	60-130			
Bromodichloromethane	40.1	0.5	ug/L		100	60-130			
Bromoform	34.5	0.5	ug/L		86.3	60-130			
Bromomethane	32.5	0.5	ug/L		81.4	50-140			
Carbon Tetrachloride	49.2	0.2	ug/L		123	60-130			
Chlorobenzene	33.7	0.5	ug/L		84.3	60-130			
Chloroform	33.1	0.5	ug/L		82.7	60-130			
Dibromochloromethane	41.0	0.5	ug/L		102	60-130			
Dichlorodifluoromethane	43.3	1.0	ug/L		108	50-140			
1,2-Dichlorobenzene	32.9	0.5	ug/L		82.3	60-130			
1,3-Dichlorobenzene	33.5	0.5	ug/L		83.8	60-130			
1,4-Dichlorobenzene	38.3	0.5	ug/L		95.8	60-130			
1,1-Dichloroethane	34.0	0.5	ug/L		85.1	60-130			
1,2-Dichloroethane	35.3	0.5	ug/L		88.2	60-130			
1,1-Dichloroethylene	31.3	0.5	ug/L		78.2	60-130			
cis-1,2-Dichloroethylene	32.3	0.5	ug/L		80.8	60-130			
trans-1,2-Dichloroethylene	32.7	0.5	ug/L		81.8	60-130			
1,2-Dichloropropane	33.9	0.5	ug/L		84.8	60-130			
cis-1,3-Dichloropropylene	32.2	0.5	ug/L		80.5	60-130			
trans-1,3-Dichloropropylene	37.9	0.5	ug/L		94.7	60-130			
Ethylbenzene	30.4	0.5	ug/L		76.1	60-130			
Ethylene dibromide (dibromoethane	37.9	0.2	ug/L		94.8	60-130			
Hexane	32.0	1.0	ug/L		80.0	60-130			
Methyl Ethyl Ketone (2-Butanone)	84.1	5.0	ug/L		84.1	50-140			
Methyl Isobutyl Ketone	123	5.0	ug/L		123	50-140			
Methyl tert-butyl ether	89.6	2.0	ug/L		89.6	50-140			
Methylene Chloride	38.5	5.0	ug/L		96.4	60-130			
Styrene	31.3	0.5	ug/L		78.3	60-130			
1,1,1,2-Tetrachloroethane	36.1	0.5	ug/L		90.2	60-130			
1,1,2,2-Tetrachloroethane	44.9	0.5	ug/L		112	60-130			
Tetrachloroethylene	31.3	0.5	ug/L		78.2	60-130			
Toluene	35.5	0.5	ug/L		88.8	60-130			
1,1,1-Trichloroethane	36.6	0.5	ug/L		91.6	60-130			
1,1,2-Trichloroethane	37.0	0.5	ug/L		92.6	60-130			
Trichloroethylene	31.4	0.5	ug/L		78.4	60-130			
Trichlorofluoromethane	37.9	1.0	ug/L		94.8	60-130			
Vinyl chloride	37.7	0.5	ug/L		94.2	50-140			
m,p-Xylenes	71.3	0.5	ug/L		89.1	60-130			
o-Xylene	41.6	0.5	ug/L		104	60-130			
Surrogate: 4-Bromofluorobenzene	*67.1*		*ug/L*		*83.9*	*50-140*			

Certificate of Analysis
Client: GEMTEC Consulting Engineers and Scientists Limited
Client PO:

Report Date: 07-Mar-2019
Order Date: 1-Mar-2019
Project Description: 64153.50

Qualifier Notes:

Login Qualifiers :

Container(s) - Bottle and COC sample ID don't match -
Applies to samples: BH18-12 GW2

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable
ND: Not Detected
MDL: Method Detection Limit
Source Result: Data used as source for matrix and duplicate samples
%REC: Percent recovery.
RPD: Relative percent difference.

Paracel ID: 1909515

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№ 121196

Page 1 of 1

Client Name: Gemtec	Project Reference: 64153.50
Contact Name: Nicole Soucy	Quote #
Address: 32 Steacie Dr.	PO #
Telephone: 613-836-1422	Email Address: nicole.soucy@gemtec.ca

Turnaround Time:
☐ 1 Day ☐ 3 Day
☐ 2 Day ☒ Regular
Date Required:

Criteria: ☒ O. Reg. 153/04 (As Amended) Table __ ☐ RSC Filing ☐ O. Reg. 558/00 ☐ PWQO ☐ CCME ☐ SUB (Storm) ☐ SUB (Sanitary) Municipality: ☐ Other:

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

Paracel Order Number: 1909515

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken Date	Sample Taken Time	PHCs F1-F4+BTEX	VOCs	PAHs	Metals by ICP	Hg	CrVI	B (HWS)	Required Analyses
1	~~MW~~ BH 18-9 GW2	GW		2	March 1/19			X						
2	BH 18-10 S GW2	↓		↓	↓			X						
3	BH 18-10 D GW2							X						
4	BH 18-11 GW2							X						
5	BH 18-12 GW2							X						→ one vial reads GW-1
6	~~BH 18-13 GW2~~							X						↳ Should read GW2 per Nicole
7	BH 18-9 GW102	↓		↓	↓			X						
8														
9														
10														

Comments:

Method of Delivery: Swift

Relinquished By (Sign):	Received by Driver/Depot: JOHN NUYENS	Received at Lab:	Verified By:
Relinquished By (Print):	Date/Time: 1 MARCH	Date/Time: May 1/19	Date/Time: May 1/19
Date/Time:	Temperature: °C	Temperature: 10.9°C 4:50p	pH Verified [ ] By: N/A

5:04p

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Certificate of Analysis

GEMTEC Consulting Engineers and Scientists Limited

32 Steacie Drive
Kanata, ON K2K 2A9
Attn: Nicole Soucy

Client PO:
Project: 64153.50
Custody: 121201

Report Date: 8-Mar-2019
Order Date: 5-Mar-2019

Order #: 1910190

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
1910190-01	BH18-13 GW-2

Approved By: Mark Foto

Mark Foto, M.Sc.
Lab Supervisor

Certificate of Analysis
Client: GEMTEC Consulting Engineers and Scientists Limited
Client PO:

Report Date: 08-Mar-2019
Order Date: 5-Mar-2019
Project Description: 64153.50

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
REG 153: VOCs by P&T GC/MS	EPA 624 - P&T GC-MS	6-Mar-19	7-Mar-19

Certificate of Analysis

Client: GEMTEC Consulting Engineers and Scientists Limited

Client PO:

Report Date: 08-Mar-2019

Order Date: 5-Mar-2019

Project Description: 64153.50

	Client ID:	BH18-13 GW-2	-	-	-
	Sample Date:	03/05/2019 10:45	-	-	-
	Sample ID:	1910190-01	-	-	-
	MDL/Units	Water	-	-	-
Volatiles					
Acetone	5.0 ug/L	<5.0	-	-	-
Benzene	0.5 ug/L	<0.5	-	-	-
Bromodichloromethane	0.5 ug/L	<0.5	-	-	-
Bromoform	0.5 ug/L	<0.5	-	-	-
Bromomethane	0.5 ug/L	<0.5	-	-	-
Carbon Tetrachloride	0.2 ug/L	<0.2	-	-	-
Chlorobenzene	0.5 ug/L	<0.5	-	-	-
Chloroform	0.5 ug/L	<0.5	-	-	-
Dibromochloromethane	0.5 ug/L	<0.5	-	-	-
Dichlorodifluoromethane	1.0 ug/L	<1.0	-	-	-
1,2-Dichlorobenzene	0.5 ug/L	<0.5	-	-	-
1,3-Dichlorobenzene	0.5 ug/L	<0.5	-	-	-
1,4-Dichlorobenzene	0.5 ug/L	<0.5	-	-	-
1,1-Dichloroethane	0.5 ug/L	<0.5	-	-	-
1,2-Dichloroethane	0.5 ug/L	<0.5	-	-	-
1,1-Dichloroethylene	0.5 ug/L	<0.5	-	-	-
cis-1,2-Dichloroethylene	0.5 ug/L	<0.5	-	-	-
trans-1,2-Dichloroethylene	0.5 ug/L	<0.5	-	-	-
1,2-Dichloropropane	0.5 ug/L	<0.5	-	-	-
cis-1,3-Dichloropropylene	0.5 ug/L	<0.5	-	-	-
trans-1,3-Dichloropropylene	0.5 ug/L	<0.5	-	-	-
1,3-Dichloropropene, total	0.5 ug/L	<0.5	-	-	-
Ethylbenzene	0.5 ug/L	<0.5	-	-	-
Ethylene dibromide (dibromoethan	0.2 ug/L	<0.2	-	-	-
Hexane	1.0 ug/L	<1.0	-	-	-
Methyl Ethyl Ketone (2-Butanone)	5.0 ug/L	<5.0	-	-	-
Methyl Isobutyl Ketone	5.0 ug/L	<5.0	-	-	-
Methyl tert-butyl ether	2.0 ug/L	<2.0	-	-	-
Methylene Chloride	5.0 ug/L	<5.0	-	-	-
Styrene	0.5 ug/L	<0.5	-	-	-
1,1,1,2-Tetrachloroethane	0.5 ug/L	<0.5	-	-	-
1,1,2,2-Tetrachloroethane	0.5 ug/L	<0.5	-	-	-
Tetrachloroethylene	0.5 ug/L	<0.5	-	-	-
Toluene	0.5 ug/L	<0.5	-	-	-
1,1,1-Trichloroethane	0.5 ug/L	<0.5	-	-	-

Certificate of Analysis

Client: GEMTEC Consulting Engineers and Scientists Limited

Client PO:

Report Date: 08-Mar-2019

Order Date: 5-Mar-2019

Project Description: 64153.50

	Client ID:	BH18-13 GW-2	-	-	-
	Sample Date:	03/05/2019 10:45	-	-	-
	Sample ID:	1910190-01	-	-	-
	MDL/Units	Water	-	-	-
1,1,2-Trichloroethane	0.5 ug/L	<0.5	-	-	-
Trichloroethylene	0.5 ug/L	<0.5	-	-	-
Trichlorofluoromethane	1.0 ug/L	<1.0	-	-	-
Vinyl chloride	0.5 ug/L	<0.5	-	-	-
m,p-Xylenes	0.5 ug/L	<0.5	-	-	-
o-Xylene	0.5 ug/L	<0.5	-	-	-
Xylenes, total	0.5 ug/L	<0.5	-	-	-
4-Bromofluorobenzene	Surrogate	110%	-	-	-
Dibromofluoromethane	Surrogate	96.7%	-	-	-
Toluene-d8	Surrogate	114%	-	-	-

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Volatiles									
Acetone	ND	5.0	ug/L						
Benzene	ND	0.5	ug/L						
Bromodichloromethane	ND	0.5	ug/L						
Bromoform	ND	0.5	ug/L						
Bromomethane	ND	0.5	ug/L						
Carbon Tetrachloride	ND	0.2	ug/L						
Chlorobenzene	ND	0.5	ug/L						
Chloroform	ND	0.5	ug/L						
Dibromochloromethane	ND	0.5	ug/L						
Dichlorodifluoromethane	ND	1.0	ug/L						
1,2-Dichlorobenzene	ND	0.5	ug/L						
1,3-Dichlorobenzene	ND	0.5	ug/L						
1,4-Dichlorobenzene	ND	0.5	ug/L						
1,1-Dichloroethane	ND	0.5	ug/L						
1,2-Dichloroethane	ND	0.5	ug/L						
1,1-Dichloroethylene	ND	0.5	ug/L						
cis-1,2-Dichloroethylene	ND	0.5	ug/L						
trans-1,2-Dichloroethylene	ND	0.5	ug/L						
1,2-Dichloropropane	ND	0.5	ug/L						
cis-1,3-Dichloropropylene	ND	0.5	ug/L						
trans-1,3-Dichloropropylene	ND	0.5	ug/L						
1,3-Dichloropropene, total	ND	0.5	ug/L						
Ethylbenzene	ND	0.5	ug/L						
Ethylene dibromide (dibromoethane	ND	0.2	ug/L						
Hexane	ND	1.0	ug/L						
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L						
Methyl Isobutyl Ketone	ND	5.0	ug/L						
Methyl tert-butyl ether	ND	2.0	ug/L						
Methylene Chloride	ND	5.0	ug/L						
Styrene	ND	0.5	ug/L						
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L						
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L						
Tetrachloroethylene	ND	0.5	ug/L						
Toluene	ND	0.5	ug/L						
1,1,1-Trichloroethane	ND	0.5	ug/L						
1,1,2-Trichloroethane	ND	0.5	ug/L						
Trichloroethylene	ND	0.5	ug/L						
Trichlorofluoromethane	ND	1.0	ug/L						
Vinyl chloride	ND	0.5	ug/L						
m,p-Xylenes	ND	0.5	ug/L						
o-Xylene	ND	0.5	ug/L						
Xylenes, total	ND	0.5	ug/L						
Surrogate: 4-Bromofluorobenzene	*90.4*		*ug/L*		*113*	*50-140*			
Surrogate: Dibromofluoromethane	*77.1*		*ug/L*		*96.4*	*50-140*			
Surrogate: Toluene-d8	*89.6*		*ug/L*		*112*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Volatiles									
Acetone	ND	5.0	ug/L	ND				30	
Benzene	ND	0.5	ug/L	ND				30	
Bromodichloromethane	ND	0.5	ug/L	ND				30	
Bromoform	ND	0.5	ug/L	ND				30	
Bromomethane	ND	0.5	ug/L	ND				30	
Carbon Tetrachloride	ND	0.2	ug/L	ND				30	
Chlorobenzene	ND	0.5	ug/L	ND				30	
Chloroform	ND	0.5	ug/L	ND				30	
Dibromochloromethane	ND	0.5	ug/L	ND				30	
Dichlorodifluoromethane	ND	1.0	ug/L	ND				30	
1,2-Dichlorobenzene	ND	0.5	ug/L	ND				30	
1,3-Dichlorobenzene	ND	0.5	ug/L	ND				30	
1,4-Dichlorobenzene	ND	0.5	ug/L	ND				30	
1,1-Dichloroethane	ND	0.5	ug/L	ND				30	
1,2-Dichloroethane	ND	0.5	ug/L	ND				30	
1,1-Dichloroethylene	ND	0.5	ug/L	ND				30	
cis-1,2-Dichloroethylene	ND	0.5	ug/L	ND				30	
trans-1,2-Dichloroethylene	ND	0.5	ug/L	ND				30	
1,2-Dichloropropane	ND	0.5	ug/L	ND				30	
cis-1,3-Dichloropropylene	ND	0.5	ug/L	ND				30	
trans-1,3-Dichloropropylene	ND	0.5	ug/L	ND				30	
Ethylbenzene	ND	0.5	ug/L	ND				30	
Ethylene dibromide (dibromoethane	ND	0.2	ug/L	ND				30	
Hexane	ND	1.0	ug/L	ND				30	
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L	ND				30	
Methyl Isobutyl Ketone	ND	5.0	ug/L	ND				30	
Methyl tert-butyl ether	ND	2.0	ug/L	ND				30	
Methylene Chloride	ND	5.0	ug/L	ND				30	
Styrene	ND	0.5	ug/L	ND				30	
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L	ND				30	
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L	ND				30	
Tetrachloroethylene	ND	0.5	ug/L	ND				30	
Toluene	ND	0.5	ug/L	ND				30	
1,1,1-Trichloroethane	3.34	0.5	ug/L	3.30			1.2	30	
1,1,2-Trichloroethane	ND	0.5	ug/L	ND				30	
Trichloroethylene	ND	0.5	ug/L	ND				30	
Trichlorofluoromethane	ND	1.0	ug/L	ND				30	
Vinyl chloride	ND	0.5	ug/L	ND				30	
m,p-Xylenes	ND	0.5	ug/L	ND				30	
o-Xylene	ND	0.5	ug/L	ND				30	
Surrogate: 4-Bromofluorobenzene	*95.4*		*ug/L*		*119*	*50-140*			
Surrogate: Dibromofluoromethane	*79.0*		*ug/L*		*98.7*	*50-140*			
Surrogate: Toluene-d8	*90.0*		*ug/L*		*112*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Volatiles									
Acetone	80.5	5.0	ug/L		80.5	50-140			
Benzene	36.9	0.5	ug/L		92.3	60-130			
Bromodichloromethane	38.7	0.5	ug/L		96.7	60-130			
Bromoform	31.1	0.5	ug/L		77.8	60-130			
Bromomethane	28.9	0.5	ug/L		72.3	50-140			
Carbon Tetrachloride	40.3	0.2	ug/L		101	60-130			
Chlorobenzene	32.0	0.5	ug/L		79.9	60-130			
Chloroform	30.1	0.5	ug/L		75.2	60-130			
Dibromochloromethane	37.0	0.5	ug/L		92.4	60-130			
Dichlorodifluoromethane	47.7	1.0	ug/L		119	50-140			
1,2-Dichlorobenzene	35.2	0.5	ug/L		88.1	60-130			
1,3-Dichlorobenzene	32.9	0.5	ug/L		82.3	60-130			
1,4-Dichlorobenzene	38.7	0.5	ug/L		96.7	60-130			
1,1-Dichloroethane	30.3	0.5	ug/L		75.8	60-130			
1,2-Dichloroethane	33.6	0.5	ug/L		84.0	60-130			
1,1-Dichloroethylene	27.6	0.5	ug/L		69.1	60-130			
cis-1,2-Dichloroethylene	30.3	0.5	ug/L		75.8	60-130			
trans-1,2-Dichloroethylene	31.0	0.5	ug/L		77.5	60-130			
1,2-Dichloropropane	34.0	0.5	ug/L		85.0	60-130			
cis-1,3-Dichloropropylene	33.7	0.5	ug/L		84.2	60-130			
trans-1,3-Dichloropropylene	35.4	0.5	ug/L		88.4	60-130			
Ethylbenzene	28.1	0.5	ug/L		70.3	60-130			
Ethylene dibromide (dibromoethane	34.4	0.2	ug/L		86.0	60-130			
Hexane	32.3	1.0	ug/L		80.7	60-130			
Methyl Ethyl Ketone (2-Butanone)	94.1	5.0	ug/L		94.1	50-140			
Methyl Isobutyl Ketone	133	5.0	ug/L		133	50-140			
Methyl tert-butyl ether	87.0	2.0	ug/L		87.0	50-140			
Methylene Chloride	35.6	5.0	ug/L		88.9	60-130			
Styrene	32.0	0.5	ug/L		80.0	60-130			
1,1,1,2-Tetrachloroethane	32.6	0.5	ug/L		81.5	60-130			
1,1,2,2-Tetrachloroethane	40.4	0.5	ug/L		101	60-130			
Tetrachloroethylene	27.7	0.5	ug/L		69.2	60-130			
Toluene	32.4	0.5	ug/L		81.1	60-130			
1,1,1-Trichloroethane	31.8	0.5	ug/L		79.6	60-130			
1,1,2-Trichloroethane	33.3	0.5	ug/L		83.3	60-130			
Trichloroethylene	28.7	0.5	ug/L		71.8	60-130			
Trichlorofluoromethane	35.5	1.0	ug/L		88.8	60-130			
Vinyl chloride	34.9	0.5	ug/L		87.3	50-140			
m,p-Xylenes	67.3	0.5	ug/L		84.1	60-130			
o-Xylene	37.9	0.5	ug/L		94.8	60-130			
Surrogate: 4-Bromofluorobenzene	*72.8*		*ug/L*		*91.0*	*50-140*			

Qualifier Notes:

None

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable
ND: Not Detected
MDL: Method Detection Limit
Source Result: Data used as source for matrix and duplicate samples
%REC: Percent recovery.
RPD: Relative percent difference.

Paracel ID: 1910190

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Chain of Custody
(Lab Use Only)
№ 121201

Page 1 of 1

Client Name: Gemtec	Project Reference: 64153.50
Contact Name: Nicole Soucy	Quote #
Address:	PO #
Telephone: 613 836 1422	Email Address: nicole.soucy@gemtec.ca

Turnaround Time:
☐ 1 Day ☐ 3 Day
☐ 2 Day ☑ Regular
Date Required:

Criteria: ☐ O. Reg. 153/04 (As Amended) Table __ ☐ RSC Filing ☐ O. Reg. 558/00 ☐ PWQO ☐ CCME ☐ SUB (Storm) ☐ SUB (Sanitary) Municipality: ☐ Other:

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

Required Analyses

	Paracel Order Number: 1910190 / Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken Date	Sample Taken Time	PHCs F1-F4+BTEX	VOCs	PAHs	Metals by ICP	Hg	CrVI	B (HWS)							
1	BH18-13 GW-2	GW		2	March 5, 2019	10:45 am		✓												✓
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				

Comments: * bottles labelled March 1, 2019. → actual sample date is March 5, 2019 Walk-in

Method of Delivery:

Relinquished By (Sign): M. Lucas	Received by Driver/Depot: Karen Cull	Received at Lab:	Verified By:
Relinquished By (Print):	Date/Time: Mar 5/19 11:33	Date/Time: March 5/19	Date/Time: 03/05/19 11:43am
Date/Time: March 5, 2019 11:32 am	Temperature: 5.1 °C	Temperature: 8.9 °C	pH Verified [ ] By:

APPENDIX E

FIO Search Results

Ministry of the Environment, Conservation and Parks

Access and Privacy Office
12th Floor
40 St. Clair Avenue West
Toronto ON M4V 1M2
Tel: (416) 314-4075
Fax: (416) 314-4285

Ministère de l'Environnement, de la Protection de la nature et des Parcs

Bureau de l'accès à l'information et de la protection de la vie privée
12e étage
40, avenue St. Clair ouest
Toronto ON M4V 1M2
Tél. : (416) 314-4075
Téléc.: (416) 314-4285

Ontario

December 3, 2018

Nicole Soucy
Gemtec
32 Steacie Drive
Stittsville, ON K2K2A9

Dear Nicole Soucy:

RE: ***Freedom of Information and Protection of Privacy Act* Request**
Our File # A-2018-08016, Your Reference 64153.50

The Ministry is in receipt of your request made pursuant to the *Freedom of Information and Protection of Privacy Act* and has received your payment in the amount of $5.00 (non-refundable application fee).

The search is being conducted on the following: 109 Iber Road, Stittsville. If there is any discrepancy please contact us immediately.

You may expect a reply or additional communication as your request is processed. For your information, the Ministry charges for search, copying and preparation time.

If you have any questions regarding this matter, please contact Rebeka Bogdan at 416-314-4075 or Rebeka.Bogdan@ontario.ca.

Yours truly,

Janet Dadufalza
Manager, Access and Privacy

Ministry of the Environment, Conservation and Parks

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Ontario

December 3, 2018

Nicole Soucy
Gemtec
32 Steacie Drive
Stittsville, ON K2K2A9

Dear Nicole Soucy:

RE: ***Freedom of Information and Protection of Privacy Act*** **Request**
Our File # A-2018-08017, Your Reference 64153.50

The Ministry is in receipt of your request made pursuant to the *Freedom of Information and Protection of Privacy Act* and has received your payment in the amount of $5.00 (non-refundable application fee), along with your $30.00 deposit.

The search is being conducted on the following: 113 Iber Road, Stittsville. If there is any discrepancy please contact us immediately.

You may expect a reply or additional communication as your request is processed. For your information, the Ministry charges for search, copying and preparation time.

If you have any questions regarding this matter, please contact Rebeka Bogdan at Rebeka.Bogdan@ontario.ca.

Yours truly,

Janet Dadufalza
Manager, Access and Privacy

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Ontario

December 3, 2018

Nicole Soucy
Gemtec
32 Steacie Drive
Stittsville, ON K2K2A9

Dear Nicole Soucy:

RE: ***Freedom of Information and Protection of Privacy Act* Request**
Our File # A-2018-08018, Your Reference 64153.50

The Ministry is in receipt of your request made pursuant to the *Freedom of Information and Protection of Privacy Act* and has received your payment in the amount of $5.00 (non-refundable application fee).

The search is being conducted on the following: 119 Iber Road, Stittsville. If there is any discrepancy please contact us immediately.

You may expect a reply or additional communication as your request is processed. For your information, the Ministry charges for search, copying and preparation time.

If you have any questions regarding this matter, please contact Rebeka Bogdan at 416-314-4075 or Rebeka.Bogdan@ontario.ca.

Yours truly,

Janet Dadufalza
Manager, Access and Privacy

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Téléc.: (416) 314-4285

Ontario

December 3, 2018

Nicole Soucy
Gemtec
32 Steacie Drive
Stittsville, ON K2K2A9

Dear Nicole Soucy:

RE: ***Freedom of Information and Protection of Privacy Act* Request**
Our File # A-2018-08019, Your Reference 64153.50

The Ministry is in receipt of your request made pursuant to the *Freedom of Information and Protection of Privacy Act* and has received your payment in the amount of $5.00 (non-refundable application fee).

The search is being conducted on the following: 135 Iber Road, Stittsville. If there is any discrepancy please contact us immediately.

You may expect a reply or additional communication as your request is processed. For your information, the Ministry charges for search, copying and preparation time.

If you have any questions regarding this matter, please contact Rebeka Bogdan at 416-314-4075 or Rebeka.Bogdan@ontario.ca.

Yours truly,

Janet Dadufalza
Manager, Access and Privacy

Ministry of the Environment, Conservation and Parks

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Ontario

December 10, 2018

Nicole Soucy
Gemtec
32 Steacie Drive
Stittsville, ON K2K 2A9

Dear Nicole Soucy:

RE: *Freedom of Information and Protection of Privacy Act* Request
Our File #: A-2018-08016, Your Reference #: 64153.50

This letter is in response to your request made pursuant to the *Freedom of Information and Protection of Privacy Act* relating to 109 Iber Road, Stittsville.

After a thorough search through the files of the Ministry's Ottawa District Office, Investigations and Enforcement Branch, Environmental Monitoring and Reporting Branch, Sector Compliance Branch and Safe Drinking Water Branch, no records were located in response to your request. To provide you with this response and in accordance with Section 57 of the *Freedom of Information and Protection of Privacy Act*, the fee owed is $30.00 for 1 hour of search time @ $30.00 per hour. **Please forward to me at the above address payment by cheque (made payable to the "Minister of Finance (FOI)") or credit card in the amount of $30.00 in order that we may close this file. When remitting payment, please quote our file number or attach a copy of this letter.** Credit card forms are available on the Ministry's website http://www.ontario.ca/environment-and-energy/freedom-information-request-form.

You may request a review of my decision by contacting the Information and Privacy Commissioner/Ontario, 2 Bloor Street East, Suite 1400, Toronto, ON M4W 1A8 (800-387-0073 or 416-326-3333). Please note that there is a $25.00 fee and you only have 30 days from receipt of this letter to request a review.

If you have any questions regarding this matter, please contact Sharon Menzies at (416) 327-1429.

Yours truly,

Janet Dadufalza
Manager, Access and Privacy

Ministry of the Environment, Conservation and Parks

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12th Floor
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Ontario

December 11, 2018

Nicole Soucy
Gemtec
32 Steacie Drive
Stittsville, ON K2K2A9

Dear Nicole Soucy:

RE: *Freedom of Information and Protection of Privacy Act* Request
Our File #: A-2018-08017, Your Reference #: 64153.50

This letter is in response to your request made pursuant to the *Freedom of Information and Protection of Privacy Act* relating to 113 Iber Road, Stittsville.

After a thorough search of the Ministry's Ottawa District Office, Investigations and Enforcement Branch, Environmental Monitoring and Reporting Branch, Sector Compliance Branch and Safe Drinking Water Branch, records were located in response to your request. It is my decision to provide full access to the information.

In accordance with Section 57 of the *Freedom of Information and Protection of Privacy Act*, the estimated fee is:

• Search Time 1 hour @ $30/hour	$30.00
• Copying 2 pages @ $0.20/page	0.40
• Delivery	3.00
• **Total**	**$33.40**

In order to receive a copy of the records please forward this amount to our office. You may pay by money order or cheque (made payable to the "Minister of Finance (FOI)") or by credit card. Credit card forms are available on the Ministry's website http://www.ontario.ca/environment-and-energy/freedom-information-request-form. Please do not mail cash.

If payment has not been received within 45 days or should you no longer require the records, please remit $30.00 for the work already undertaken and this file will be closed. When remitting payment, please quote our file number or attach a copy of this letter.

You may request a review of my decision by contacting the Information and Privacy Commissioner/Ontario, 2 Bloor Street East, Suite 1400, Toronto, ON M4W 1A8 (800-387-0073 or 416-326-3333). Please note that there is a $25.00 fee and you only have 30 days from receipt of this letter to request a review.

If you have any questions regarding this matter, please contact Sharon Menzies at (416) 327-1429.

Yours truly,

Janet Dadufalza
Manager, Access and Privacy

Ministry of the Environment, Conservation and Parks

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Tél. : (416) 314-4075

Ontario

December 10, 2018

Nicole Soucy
Gemtec
32 Steacie Drive
Stittsville, ON K2K2A9

Dear Nicole Soucy:

RE: *Freedom of Information and Protection of Privacy Act* Request
Our File #: A-2018-08018, Your Reference #: 64153.50

This letter is in response to your request made pursuant to the *Freedom of Information and Protection of Privacy Act* relating to 119 Iber Road, Stittsville.

After a thorough search of the Ministry's Ottawa District Office, Investigations and Enforcement Branch, Environmental Monitoring and Reporting Branch, Sector Compliance Branch and Safe Drinking Water Branch, records were located in response to your request. It is my decision to provide full access to the information.

In accordance with Section 57 of the *Freedom of Information and Protection of Privacy Act*, detailed below are our charges:

• Search Time 1 hour @ $30/hour	$30.00
• Copying 2 pages @ $0.20/page	0.40
• Delivery	3.00
• **Total**	**$33.40**

In order to receive a copy of the records please forward this amount to our office. You may pay by money order or cheque (made payable to the "Minister of Finance (FOI)") or by credit card. Credit card forms are available on the Ministry's website http://www.ontario.ca/environment-and-energy/freedom-information-request-form. Please do not mail cash.

If payment has not been received within 45 days or should you no longer require the records, please remit $30.00 for the work already undertaken and this file will be closed. When remitting payment, please quote our file number or attach a copy of this letter.

You may request a review of my decision by contacting the Information and Privacy Commissioner/Ontario, 2 Bloor Street East, Suite 1400, Toronto, ON M4W 1A8 (800-387-0073 or 416-326-3333). Please note that there is a $25.00 fee and you only have 30 days from receipt of this letter to request a review.

If you have any questions regarding this matter, please contact Sharon Menzies at (416) 327-1429.

Yours truly,

Janet Dadufalza
Manager, Access and Privacy

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Ontario

December 11, 2018

Nicole Soucy
Gemtec
32 Steacie Drive
Stittsville, ON K2K 2A9

Dear Nicole Soucy:

RE: *Freedom of Information and Protection of Privacy Act* Request
Our File #: A-2018-08019, Your Reference #: 64153.50

This letter is in response to your request made pursuant to the *Freedom of Information and Protection of Privacy Act* relating to 135 Iber Road, Stittsville.

After a thorough search of the Ministry's Ottawa District Office, Investigations and Enforcement Branch, Environmental Monitoring and Reporting Branch, Sector Compliance Branch and Safe Drinking Water Branch, records were located in response to your request. It is my preliminary decision to provide partial access to the information as the identity of complainants will be removed to protect privacy (Section 21(1)(f) of the Act).

In accordance with Section 57 of the *Freedom of Information and Protection of Privacy Act*, the estimated fee is:

• Search Time 1 hour @ $30/hour	$30.00
• Copying approx. 40 pages @ $0.20/page	8.00
• Delivery	3.00
• **Total**	**$41.00**

Please note, that upon completion of the Ministry's review, preparation charges may be applied to account for any severances made to the records in accordance with the exemptions under the Act. These severances will be charged at a rate of $30.00 per hour, calculated at a rate of two minutes per page.

In order to receive a copy of the records please forward this amount to our office. You may pay by money order or cheque (made payable to the "Minister of Finance (FOI)") or by credit card. Credit card forms are available on the Ministry's website http://www.ontario.ca/environment-and-energy/freedom-information-request-form. Please do not mail cash.

If payment has not been received within 45 days or should you no longer require the records, please remit $30.00 for the work already undertaken and this file will be closed. When remitting payment, please quote our file number or attach a copy of this letter.

The District Office and Sector Compliance Branch have advised that there may be records in the Records Centre, Mississauga. To retrieve these files there is a charge of $60.00 with no guarantee that any records will be located responsive to your request. If you would like us to retrieve these files, $60.00 in addition to the above amount is required. Please note, a request for records must usually be answered within 30 calendar days, however Section 27 allows for time extensions under certain circumstances. If you choose to have the files retrieved from the Records Centre, the time for answering your request will be extended for an additional 30 days.

You may request a review of my decision by contacting the Information and Privacy Commissioner/Ontario, 2 Bloor Street East, Suite 1400, Toronto, ON M4W 1A8 (800-387-0073 or 416-326-3333). Please note that there is a $25.00 fee and you only have 30 days from receipt of this letter to request a review.

If you have any questions regarding this matter, please contact Sharon Menzies at (416) 327-1429.

Yours truly,

Janet Dadufalza
Manager, Access and Privacy

Ministry of the Environment, Conservation and Parks

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40 St. Clair Avenue West
Toronto ON M4V 1M2
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Toronto ON M4V 1M2
Tél. : (416) 314-4075

Ontario

December 11, 2018

Nicole Soucy
Gemtec
32 Steacie Drive
Stittsville, ON K2K2A9

Dear Nicole Soucy:

RE: *Freedom of Information and Protection of Privacy Act* Request
Our File #: A-2018-08020, Your Reference #: 64153.50

This letter is in response to your request made pursuant to the *Freedom of Information and Protection of Privacy Act* relating to 139 Iber Road, Stittsville.

After a thorough search of the Ministry's Ottawa District Office, Investigations and Enforcement Branch, Environmental Monitoring and Reporting Branch, Sector Compliance Branch and Safe Drinking Water Branch, records were located in response to your request. It is my preliminary decision to provide partial access to the information as the identity of complainants will be removed to protect privacy (Section 21(1)(f) of the Act).

In accordance with Section 57 of the *Freedom of Information and Protection of Privacy Act*, the estimated fee is:

• Search Time 1 hour @ $30/hour	$30.00
• Copying 23 pages @ $0.20/page	4.60
• Delivery	3.00
• **Total**	**$37.60**

Please note, that upon completion of the Ministry's review, additional preparation charges may be applied to account for any severances made to the records in accordance with the exemptions under the Act. These severances will be charged at a rate of $30.00 per hour, calculated at a rate of two minutes per page.

In order to receive a copy of the records please forward this amount to our office. You may pay by money order or cheque (made payable to the "Minister of Finance (FOI)") or by credit card. Credit card forms are available on the Ministry's website http://www.ontario.ca/environment-and-energy/freedom-information-request-form. Please do not mail cash.

If payment has not been received within 45 days or should you no longer require the records, please remit $30.00 for the work already undertaken and this file will be closed. When remitting payment, please quote our file number or attach a copy of this letter.

You may request a review of my decision by contacting the Information and Privacy Commissioner/Ontario, 2 Bloor Street East, Suite 1400, Toronto, ON M4W 1A8 (800-387-0073 or 416-326-3333). Please note that there is a $25.00 fee and you only have 30 days from receipt of this letter to request a review.

If you have any questions regarding this matter, please contact Sharon Menzies at (416) 327-1429.

Yours truly,

Janet Dadufalza
Manager, Access and Privacy

Ministry of the Environment, Conservation and Parks

Access and Privacy Office
12th Floor
40 St. Clair Avenue West
Toronto ON M4V 1M2
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12e étage
40, avenue St. Clair ouest
Toronto ON M4V 1M2
Tél. : (416) 314-4075

Ontario

December 20, 2018

Nicole Soucy
Gemtec
32 Steacie Drive
Kanata, ON K2K 2A9

Dear Nicole Soucy:

RE: ***Freedom of Information and Protection of Privacy Act* Request**
Our File #: A-2018-08017, Your Reference #: 64153.50

This letter is further to your request made pursuant to the *Freedom of Information and Protection of Privacy Act* relating to 113 Iber Road, Stittsville.

After a review of the records received from the Ministry's Ottawa District Office, Investigations and Enforcement Branch, Environmental Monitoring and Reporting Branch, Sector Compliance Branch and Safe Drinking Water Branch, the final decision has been made to provide full access to the attached information.

You may request a review of my decision by contacting the Information and Privacy Commissioner/Ontario, 2 Bloor Street East, Suite 1400, Toronto, ON M4W 1A8 (800-387-0073 or 416-326-3333). Please note that there is a $25.00 fee and you only have 30 days from receipt of this letter to request a review.

If you have any questions regarding this matter, contact Moliann Weir at Moliann.Weir4@ontario.ca.

Yours truly,

for

Janet Dadufalza
Manager, Access and Privacy

Attachment

Ontario

Ministry of the
Environment

OCCURENCE REPORT

Location of Occurence: GOULBOURN TOWNSHIP IN DITCH IN STITTSVILLE AT 113 IBER RD. **Reg:** 4 **Dist:** OT **Municipality:** 20604		**Source:** ALLIED VAN LINES TRANSPORT TRUCK (CARGO) **Sector:** TA **Source:** TP **SIC:** 4561 **UTM:** **N:** [] **E:** [] **Zone:** []	
Entered: 1992/04/08 15:45	**ORIS No.** 9240000858	**Abstracts:**	**Diaries:**
Received By: BRIAN PARK		**Batch:** 599	**I. E. B. No.**
Occurence Type: S	**Subtype:** W	**Occurence Date:**	1992/04/08
Work Plan:		**Occurence Time:**	15:32
Reported By: MR. JOE BECKETT GOULBOURN TWP. FIRE DEPT		**Report to MOE :** 1992/04/08 15:32 **MOE at Scene:** 92/04/08 16:55	
Telephone No. 613-836-3337 x	**Alternate No.** - - x	**Assigned To:**	TOR RUSTAD
Address: GOULBOURN TWP. **Postal Code:**		**ERP Contacted:** : **Callout:** [] **ERP Name:**	**NSP:** [N]

Syn: ALLIED VAN LINES - OIL IN DITCH.

Brief Summary:
NOTE: THIS SPILL RELAYED TO SAC BY OTTAWA MOE'S TOR RUSTAD. CALLER REPORTED TO THE OTTAWA MOE THAT THERE IS OIL IN A DITCH AT THE ABOVE-MENTIONED LOCATION FROM AND UNKNOWN SOURCE. OTTAWA MOE'S TOR RUSTAD EN ROUTE TO SCENE AND WILL UPDATE SAC TONIGHT. 18:40: FROM E.O. TOR RUSTAD AT SCENE, CONFIRMED THAT THERE IS OIL IN THE DITCH AND FUEL ODOURS IN THE AREA. LEGAL SAMPLES OF WATER, SOIL AND CREEK BED TAKEN. SUSPECTED SOURCE OF THE OIL IS NEARBY DIVISION OF ALLIED VAN LINES. TOR SPOKE TO SOMEONE AT ALLIED AND UPDATED THE GUOULBOURN FIRE DEPT. TOR WILL REFER INCIDENT TO MOE'S I.E.B. BRANCH.

If there are related reports, record initial/master ORIS No. here >> 9203212

Followup Action: X **Abatement** IEB **Other**
BF Date:
FIELD REPORT REC'D ON MAY 4/92, GOULBOURN TWP. TO MORE STRICTLY ENFORCE SNOW DUMPING BY-LAW, FILE CLOSED BY ABATEMENT.

File Closed: X **Abatement:** IEB **Other**
Suspected Violation:

Report Prepared By: TOR RUSTAD	**Date:** 04/13/92	**IEB Investigator:**	**IEB BF Date**
Approving Officer ILLEGIBLE	**Date:** 04/22/92	**Reviewing Officer:** NOT APPLICABLE	**Date**

Specify number(s) for routing Original [ ] [ ] [ ] [ ]
Specify number(s) for copy distribution [ ] [ ] [ ] [ ] [ ]
Continued [ ] Yes

1. Investigator/E.O. **2. D. O. /File** **3. SAC (initial spills)**
4. Reg. Dir. /_____ Mgr. **5. IEB Reg. Spv** **6. IEB H.O./file** **7. Other _____**

SAC Action Class: 1:10 2:

Material 1: PETROLEUM OIL (N.O.S.) **Code :** 15
Amount : UKN **UN No.:** 1270
Material 2: **Code :**

Amount :		UN No.:
Material 3:		Code :
Amount :		UN No.:
Cause. . . . . :		Code. . : 98
Reason. . . . . :		Code. . : 98
Person in Control: ALLIED VAN LINES		Waste GenNum :
Owner . . . . . : ALLIED VAN LINES		Waste GenNum :
Agencies Involved . . . . : FIRE DEPT., WORKS DEPT.		

Clean up and Restoration Carried out by:

[v] Controller	[v] Owner	[N] Other
N	N	

% Cleaned up: 0 Estimated Cost: 0

Were Directions or Approval Given Under

EPA Part X [v]	Regulation 362 [v]	Manifest No.
N	N	

Waste Class :		
Hauler :		Code . . : 000
Disposal Site :		Code . . :
		Code . . :

Environmental Impact:	Nature of Impact:	
C	Surface Water Pollution	Code . . : 06

People/Business Damaged	
(Other than to Owner/Controller) :	
Nature of Damage:	Code . . :

Ministry of the Environment, Conservation and Parks

Access and Privacy Office

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Ministère de l'Environnement, de la Protection de la nature et des Parcs

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Tél. : (416) 314-4075

Ontario

January 2, 2019

Nicole Soucy
Gemtec
32 Steacie Drive
Stittsville, ON K2K2A9

Dear Nicole Soucy:

RE: *Freedom of Information and Protection of Privacy Act* Request
Our File #: A-2018-08020, Your Reference #: 64153.50

This letter is in response to your request made pursuant to the *Freedom of Information and Protection of Privacy Act* relating to 139 Iber Road, Stittsville.

After a thorough search of the Ministry's Ottawa District Office, Investigations and Enforcement Branch, Environmental Monitoring and Reporting Branch, Sector Compliance Branch and Safe Drinking Water Branch, records were located in response to your request. It is my decision to provide full access to the attached information.

In accordance with Section 57 of the *Freedom of Information and Protection of Privacy Act*, detailed below are our charges:

• Search Time 1 hour @ $30/hour	$ 30.00
• Copying 25 pages @ $0.20/page	$ 5.00
• Delivery	$ 3.00
• **Total**	**$ 38.00**
• Payment Received	- 37.60
• **BALANCE WAIVED (NOT REQUIRED)**	**$ 0.40**

You may request a review of my decision by contacting the Information and Privacy Commissioner/Ontario, 2 Bloor Street East, Suite 1400, Toronto, ON M4W 1A8 (800-387-0073 or 416-326-3333). Please note that there is a $25.00 fee and you only have 30 days from receipt of this letter to request a review.

If you have any questions regarding this matter, please contact Rhea Fernandes at rhea.fernandes@ontario.ca.

Yours truly,

Janet Dadufalza
for Manager, Access and Privacy

Attachments

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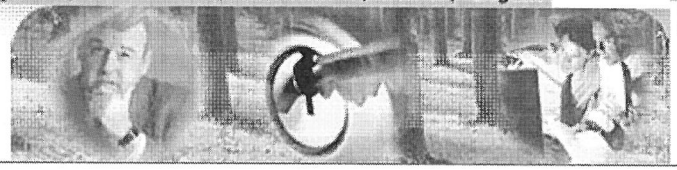

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Generator Details

Registration/Notification Number

ON4028257

Legal Company Name

Primary Name:	DNA Genotek Inc.	Division Name:	NA

Company Operating Name

Primary Name:	DNA Genotek Inc.	Division Name:	NA

Mailing Address

Division Building:	DNA Genotek Inc.	Post Box Number:	NA
Address Line 1:	500 Palladium Drive	Address Line 2:	NA
Town/City:	Ottawa	Postal Code / Zip Code:	K2V1C2
County: (if inside Ontario)	OTTAWA CARLTON (RM)	Province/State (If inside Canada/US)	ONTARIO
County: (if outside Ontario)	NA	Province / State (If outside Canada / US)	NA
Country:	Canada		

Site Location

This should be the street address of the site that is being registered. You are required to register each site that generates hazardous waste separately.

Division Building:	LD Tool & Die	Post Box Number:	NA
Address Line 1:	139 Iber Road		
Address Line 2:	NA		
Town/City:	Stittsville	Postal Code / Zip Code:	K2S 1E7
County: (if inside Ontario)	OTTAWA CARLTON (RM)	Province / State (If inside Canada / US)	ONTARIO
County: (if outside Ontario)	NA	Province / State (If outside Canada / US)	NA
Country:	Canada		

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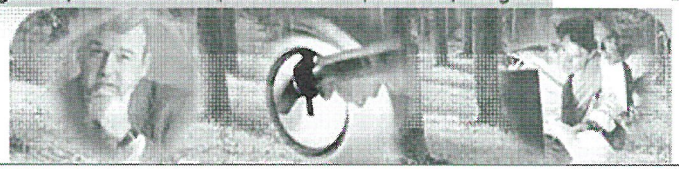

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Company Name: **DNA Genotek Inc.**
Company Number: **ON4028257 (Generator)**

Active Waste Classes

Active Waste Class Listing

Add New Waste Class | Inactive waste classes

Active Off-site Waste Classes

Waste Class	View Details	Hazardous Waste Number (per waste stream)	Reg. 347 Schedules	Disposal Method	Part 2B required	Part 2B complete	Physical State	Off-Site	Status	UnRegister Waste Class
263 - I	View Details	D001	5, 13	Land Disposal	Y	Y	Liquid	Off-Site	Active	☐
263 - L	View Details	N/A					Liquid	Off-Site	Active	☐

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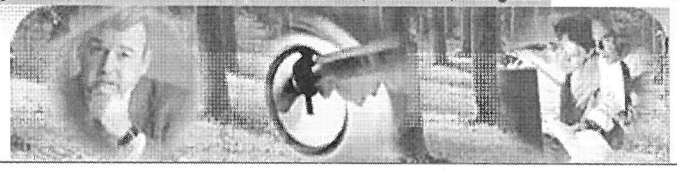

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Company Name: **Madix Engineering Inc.**
Company Number: **ON5094526 (Generator)**

Active Waste Classes

Active Waste Class Listing

Add New Waste Class | Inactive waste classes

Active On-site Waste Classes

Waste Class	Physical State	On-Site	Status	View Details	UnRegister Waste Class
263 - L	Liquid	On-site Processing/Storage	Active	View Details	☐

Active Off-site Waste Classes

Waste Class	View Details	Hazardous Waste Number (per waste stream)	Reg. 347 Schedules	Disposal Method	Part 2B required	Part 2B complete	Physical State	Off-Site	Status	UnRegister Waste Class
251 - L	View Details	N/A					Liquid	Off-Site	Active	☐
252 - L	View Details	N/A					Liquid	Off-Site	Active	☐
253 - T	View Details	D008	5, 13	Land Disposal	Y	Y	Liquid	Off-Site	Active	☐

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Administration

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Generator Details

Registration/Notification Number

ON5094526

Legal Company Name

Primary Name:	Madix Engineering Inc.	Division Name:	NA

Company Operating Name

Primary Name:	L-D Tool & Die	Division Name:	NA

Mailing Address

Division Building:	NA	Post Box Number:	NA
Address Line 1:	139 Iber Road	Address Line 2:	NA
Town/City:	Ottawa	Postal Code / Zip Code:	K2S 1E7
County: (if inside Ontario)	OTTAWA CARLTON (RM)	Province/State (If inside Canada/US)	ONTARIO
County: (if outside Ontario)	NA	Province / State (If outside Canada / US)	NA
Country:	Canada		

Site Location

This should be the street address of the site that is being registered. You are required to register each site that generates hazardous waste separately.

Division Building:	NA	Post Box Number:	NA
Address Line 1:	139 Iber Road		
Address Line 2:	NA		
Town/City:	Ottawa	Postal Code / Zip Code:	K2S 1E7
County: (if inside Ontario)	OTTAWA CARLTON (RM)	Province / State (If inside Canada / US)	ONTARIO
County: (if outside Ontario)	NA	Province / State (If outside Canada / US)	NA
Country:	Canada		

Ministry of the Environment

Ottawa District Office

2430 Don Reid Drive
Ottawa ON K1H 1E1

Tel: (613) 521-3450
Fax: (613) 521-5437

Ministère de l'Environnement

Bureau du district d'Ottawa

2430, promenade Don Reid
Ottawa (Ontario) K1H 1E1

Tél. : (613) 521-3450
Téléc. : (613) 521-5437

Ontario

September 27, 2012

L-D Tool & Die
139 Iber Road,
Ottawa, ON
K2S 1E7

Attention: Iain Fullerton

Dear Mr. Fullerton

Re: Air Facility, Industrial Sewage Works & Subject Waste Generator Inspection Report(s)

Following the Ministry of the Environment's inspection of L-D Tool & Die, located at 139 Iber Road in Ottawa on September 19, 2012 please find attached the Air Facility, Industrial Sewage Works & Subject Waste Generator Inspection Report(s) for your review.

Should you have any comments, questions or concerns regarding the inspection and/or the enclosed documents, please contact me directly at 613-521-3450 extension 232.

Sincerely,

Kyle Straberger
Environmental Officer

Enclosure

GT 66 15
File Code: SI ~~LA PE CO~~ 211, 230 & 700
(Email - September 27, 2012)

Ontario

Ministry of the Environment
Ministère de l'Environnement

Air Facility Inspection Report

Client:	3843173 Canada Inc. Mailing Address: 139 Iber Rd Lot 5 Part 4/5 Plan 4M-658, Ottawa, Ontario, Canada, K2S 1E7 Physical Address: 139 Iber Rd Lot 5 Part 4/5 Plan 4M-658, Ottawa, City, Ontario, Canada, K2S 1E7 Telephone: (613)591-1474 Client #: 8884-5WVKLA, Client Type: Corporation, NAICS: 3261 Additional Address Info: Lot 5 Part 4/5 Plan 4M-658		
Inspection Site Address:	L-D Tool and Die Address: 139 Iber Rd Lot 5 Part 4/5 Plan 4M-658, Ottawa, City District Office: Ottawa GeoReference: , LIO GeoReference: Zone: 18, UTM Easting: 429211.78, UTM Northing: 5014051.0, Latitude: 45.27639, Longitude: -75.902504		
Contact Name:	Iain Fullerton	**Title:**	Process Manager
Contact Telephone:	(613) 591-1474 ext	**Contact Fax:**	(613) 591-8683
Last Inspection Date:			
Inspection Start Date:	2012/09/19	**Inspection Finish Date:**	2012/09/19
Region:	Eastern		

1.0 INTRODUCTION

L-D Tool & Die (the "Company") is a plastic mould manufacturer and custom injection moulding company. The Facility is located at 139 Iber Road within the City of Ottawa (the "Site"). The inspection focused on compliance with the Environmental Protection Act (EPA), Ontario Regulation 419/05 - Local Air Quality (O.Reg 419), and other applicable guidelines and policies.

No previous Ministry of the Environment inspection had occurred at the Site.

1.1 TARGET SECTOR IN ONTARIO REGULATION 419/05

Is the facility in a target sector identified in Schedule 4 or Schedule 5 of O. Reg. 419/05?

No, the facility is not in a target sector identified in Schedule 4 or Schedule 5.

Specifics:

The Ministry of the Environment's Ottawa District Office was provided a list of Schedule 4 & 5 facilities within the City of Ottawa which, according to the nature of the operations at the Site (outlined in the Company's North American Industrial Classification System (NAICS) number), would be captured by the target sector. The inspection concluded that the Company is not a target sector identified in Schedule 4 or 5.

2.0 INSPECTION OBSERVATIONS

Specifics:

The inspection conducted at the Site incorporated a site tour of the facility to determine if any of the equipment, operations or maintenance generates emissions or contaminants that would require an Environmental Compliance Approval under section 9 of the EPA.

It was determined that the current operations at the Site did not require an ECA under section 9 of the EPA.

2.1 SITE CONDITIONS

Specifics:

At the time of the inspection the following observations were made:

Dust: No dust was observed to be generated within or outside the facility which could cause an impacted off-site.

Noise: The noise generated by the equipment and operations at the Site did not pose an impact off-site.

Odour: Odour was not detected at levels which could cause impacts off-site.

Vibration: Vibration was not detected during the inspection at the Site.

2.2 AUTHORIZING AND CONTROL DOCUMENTATION

Does the facility have authorizing or control documentation in place such as a Certificate of Approval (CofA) ?

No

Specifics:
The Site does not discharge any contaminants to the natural environment therefore the Company is not required to submit an application for an Environmental Compliance Approval for air/noise.

2.3 EQUIPMENT REQUIRING AUTHORIZING DOCUMENT

Does the facility have the required Certificate(s) of Approval?

- ○ **The facility does not have any required Certificate(s) of Approval (Air).**
- ○ **The facility requires an amendment or additional Certificate(s) of Approval (Air).**
- ○ **The facility requires an amendment or additional Certificate(s) of Approval (other than Air).**
- ● **The facility has the required Certificate(s) of Approval (or is not required to obtain them).**

Specifics:

Since the Site does not discharge any contaminants or pollutants to the natural environment, no Environmental Compliance Approval is required.

2.4 LEGISLATIVE NOTIFICATION REQUIREMENTS

Has the facility met all applicable legislative notification requirements for air emissions?

Not Required

Specifics:

2.5 EXCEEDANCE OF A LEGAL LIMIT AND/OR GUIDELINE

Is there information that demonstrates an exceedance of a legal limit and/or guideline for air emissions?

No

Specifics:

* Type of Exceedance

2.6 MONITORING AND REPORTING

Has the facility met its assessment requirements?

Not Required

Specifics:

Has the facility met its reporting requirements?

Not Required

Specifics:

2.7 OPERATIONAL AND MAINTENANCE REQUIREMENTS

Has the facility met its operating/maintenance requirements?

Not Required

Specifics:

2.8 RECORD KEEPING REQUIREMENTS

Has the facility met its record keeping requirements?

Not Required

Specifics:

2.9 BEYOND COMPLIANCE

Are there any Beyond Compliance Projects being implemented at the facility?

No

Specifics:

3.0 REVIEW OF PREVIOUS NON-COMPLIANCE ISSUES

No previous non-compliance issues were identified during the file review prior to completing the inspection.

4.0 SUMMARY OF INSPECTION FINDINGS (HEALTH/ENVIRONMENTAL IMPACT)

Was there any indication of a known or anticipated human health impact during the inspection and/or review of relevant material, related to this Ministry's mandate?

No

Specifics:

Was there any indication of a known or anticipated environmental impact during the inspection and/or review of relevant material ?

No

Specifics:

Was there any indication of a known or suspected violation of a legal requirement during the inspection and/or review of relevant material which could cause a human health impact or environmental impairment ?

No

Specifics:

Was there any indication of a potential for environmental impairment during the inspection and/or the review of relevant material ?

No

Specifics:

Was there any indication of minor administrative non-compliance?

No

Specifics:

5.0 ACTION(S) REQUIRED

No actions are required by L-D Tool & Die at this time.

6.0 OTHER INSPECTION FINDINGS

None at this time.

7.0 INCIDENT REPORT

Not Applicable

8.0 ATTACHMENTS

PREPARED BY:
Environmental Officer:
Name: Kyle Straberger
District Office: Ottawa District Office
Date: 2012/09/24
Signature

REVIEWED BY:
District Supervisor:
Name: Tara MacDonald
District Office: Ottawa District Office
Date: 2012/09/26

Signature: 

File Storage Number: SI OT GO IB 211

Note:
"This inspection report does not in any way suggest that there is or has been compliance with applicable legislation and regulations as they may apply to this facility. It is, and remains, the responsibility of the owner and/or the operating authority to ensure compliance with all applicable legislative and regulatory requirements"

Ontario

Ministry of the Environment
Ministère de l'Environnement

Industrial Sewage Inspection Report

Client:	3843173 Canada Inc. Mailing Address: 139 Iber Rd Lot 5 Part 4/5 Plan 4M-658, Ottawa, Ontario, Canada, K2S 1E7 Physical Address: 139 Iber Rd Lot 5 Part 4/5 Plan 4M-658, Ottawa, City, Ontario, Canada, K2S 1E7 Telephone: (613)591-1474 Client #: 8884-5WVKLA, Client Type: Corporation, NAICS: 3261 Additional Address Info: Lot 5 Part 4/5 Plan 4M-658		
Inspection Site Address:	L-D Tool and Die Address: 139 Iber Rd Lot 5 Part 4/5 Plan 4M-658, Ottawa, City District Office: Ottawa GeoReference: , LIO GeoReference: Zone: 18, UTM Easting: 429211.78, UTM Northing: 5014051.0, Latitude: 45.27639, Longitude: -75.902504		
Contact Name:	Iain Fullerton	**Title:**	Process Manager
Contact Telephone:	(613) 591-1474 **ext**	**Contact Fax:**	(613) 591-8683
Last Inspection Date:			
Inspection Start Date:	2012/09/19	**Inspection Finish Date:**	2012/09/19
Region:	Eastern		

1.0 INTRODUCTION

L-D Tool & Die (the "Company") is a plastic mould manufacture and custom injection moulding company. The Company is located at 139 Iber Road within the City of Ottawa (the "Site"). The inspection focused on compliance with issued Environmental Compliance Approval Number 1916-5XEMBL (ECA) for the Industrial Sewage Works, the Ontario Water Resources Act (OWRA), and other applicable environmental legislation, guidelines, and policies.

No previous Ministry of the Environment inspection had occurred at the Site.

2.0 INSPECTION OBSERVATION

Facility MEWS (Works) Number:
N/A

Sector Type:
Other Manufacturing

Effluent Type:
Storm Water

Receiver Type:
Other

Specify Other:
Stormwater Management Pond

Certificate of Approval Number(s):
Yes
C of A Number(s): 1916-5XEMBL

ECA No. 1916-5XEMBL was issued to the Company on April 14, 2004.

2.1 WASTEWATER TREATMENT PROCESS DESCRIPTION

The Company has been approved for the following industrial sewage works system

the establishment of sewage works for the collection, transmission and disposal of stormwater run-off and to attenuate post-development peak flows to pre-development levels, for all storm events up to and including the 100-year return storm, consisting of the following:

- three (3) stormwater ponds with total ponding volume requirement of approximately 86 cubic metres for the 5-year return storm event and 154 cubic metres for the 100-year return storm event, two of the ponds being equipped with 200 millimetre diameter control discharge pipe and a 250 millimetre diameter control discharge pipe for the third pond;

2.2 EFFLUENT SUMMARY REPORT

What are the facility's effluent limits based on?
None

Does the facility comply with its limits?
Yes

The industrial sewage works Environmental Compliance Approval does not provide any effluent limits for the system installed at the Site.

2.3 SEWAGE TREATMENT WORKS CAPACITY ASSESSMENT

Flow (m^3/day)	Year 1	Year 2	Year 3
Average daily flow	0.00	0.00	0.00
Maximum daily flow	0.00	0.00	0.00
Capacity Design	0.00	0.00	0.00
% of capacity (based on average daily flow)	0.00	0.00	0.00

N/A

2.4 SAMPLING REQUIREMENTS

What are the facility's sampling requirements based on?
Other

Does the facility meet sampling requirements?
Yes

The Company is not required to conduct sampling of the stormwater management ponds under the issued ECA

2.5 REPORTING REQUIREMENTS

What are the facility's reporting requirements based on?
None

Does the facility meet reporting requirements?
Yes

The Company is not required to report under the issued Environmental Compliance Approval.

2.6 FLOW MEASUREMENT

No flow measuring is required under the issued ECA

2.7 MINISTRY SAMPLE RESULTS

Were Ministry samples collected during the inspection?
No

Reason:
The focus of the inspection did not incorporate a collection of ministry samples.

2.8 FINANCIAL ASSURANCE

The Site is not required to obtain financial assurance.

2.9 SPILL PREVENTION AND CONTINGENCY PLANS

Is the facility required to have a Spill Prevention and Contingency Plan (SPCP) as required by Ontario Regulation 224/07?
No

Has the facility had any spills since the last inspection?
No

Were all the spills reported to the ministry?
N/A

Does the facility's operations or spill history suggest that a SPCP be developed?
No

Comments:

The Site has not had any spills or upset conditions which would require the Company to contact the Ministry of the Environment. The Site is equipped with spill clean-up kits in the event of a spill or upset condition.

3.0 REVIEW OF PREVIOUS NON-COMPLIANCE ISSUES

No previous non-compliance issues were identified during the file review prior to conducting the inspection. The inspection completed on September 19, 2012 was the first Ministry of the Environment inspection at the Site.

4.0 SUMMARY OF INSPECTION FINDINGS

Was there any indication of a known or anticipated human health impact during the inspection and/or review of relevant material, related to this Ministry's mandate?
No

Specifics:

Was there any indication of a known or anticipated environmental impact during the inspection and/or review of relevant material?
No

Specifics:

Was there any indication of a known or suspected violation of a legal requirement during the inspection and/or review of relevant material which could cause a human health impact or environmental impairment?
No

Specifics:

Was there any indication of a potential for environmental impairment during the inspection and/or the review of relevant material?
No

Specifics:

Was there any indication of minor administrative non-compliance?
Yes

Specifics:

The Company has failed to completed and record the annual industrial sewage works inspections

5.0 ACTION(S) REQUIRED

The following action items are required to be completed by L-D Tool & Die:

1. Ensure Condition 2 of the Environmental Compliance Approval No. 1916-5EXMBL is complied with annually and that a record of each inspection is documented in a logbook. The inspection should include, but is not limited to, a inspection of the discharge pipes, water quality, capacity assessment (visual), overall appearance of the system.

See Condition 2 below:

2. OPERATION AND MAINTENANCE

(1) The Owner shall undertake an inspection of the condition of the stormwater management ponds, at least once a year, and undertake any necessary cleaning and maintenance to prevent the excessive buildup of sediment and/or decaying vegetation.

(2) The owner shall maintain a logbook to record the results of these inspections and any cleaning and maintenance operations undertaken and shall keep the logbook at the site for inspection by the Ministry.

1. 1. Ensure Condition 2 of the Environmental Compliance Approval No. 1916-5EXMBL is complied with annually and that a record of each inspection is documented in a logbook. The inspection should include, but is not limited to, a inspection of the discharge pipes, water quality, capacity assessment (visual), overall appearance of the

system.

6.0 OTHER INSPECTION FINDINGS

No other inspection findings were identified during the Industrial Sewage Works Inspection An Air Facility & Subject Waste Generator Inspection was completed on the same day as the Industrial Sewage Works Inspection See Air Facility Inspection Report & Subject Waste Generator Inspection for additional information pertaining to those inspection observations.

7.0 INCIDENT REPORT

Applicable
0316-8YBJ75

8.0 ATTACHMENTS

PREPARED BY:
Environmental Officer:
Name: Kyle Straberger
District Office: Ottawa District Office
Date: 2012/09/24
Signature

REVIEWED BY:
District Supervisor:
Name: Tara MacDonald
District Office: Ottawa District Office
Date: 2012/09/26

Signature: T. MacDonald

File Storage Number: SI OT GO IB 230

Note:
"This inspection report does not in any way suggest that there is or has been compliance with applicable legislation and regulations as they may apply to this facility. It is, and remains, the responsibility of the owner and/or the operating authority to ensure compliance with all applicable legislative and regulatory requirements"

Ontario

Ministry of the Environment
Ministère de l'Environnement

Subject Waste Generator Inspection Report

Client:	3843173 Canada Inc. Mailing Address: 139 Iber Rd Lot 5 Part 4/5 Plan 4M-658, Ottawa, Ontario, Canada, K2S 1E7 Physical Address: 139 Iber Rd Lot 5 Part 4/5 Plan 4M-658, Ottawa, City, Ontario, Canada, K2S 1E7 Telephone: (613)591-1474 Client #: 8884-5WVKLA, Client Type: Corporation, NAICS: 3261 Additional Address Info: Lot 5 Part 4/5 Plan 4M-658		
Inspection Site Address:	L-D Tool and Die Address: 139 Iber Rd Lot 5 Part 4/5 Plan 4M-658, Ottawa, City District Office: Ottawa GeoReference: , LIO GeoReference: Zone: 18, UTM Easting: 429211.78, UTM Northing: 5014051.0, Latitude: 45.27639, Longitude: -75.902504		
Contact Name:	Iain Fullerton	**Title:**	Process Manager
Contact Telephone:	(613) 591-1474 ext	**Contact Fax:**	(613) 591-8683
Last Inspection Date:			
Inspection Start Date:	2012/09/19	**Inspection Finish Date:**	2012/09/19
Region:	Eastern		

1.0 INTRODUCTION

L-D Tool & Die (the "Company") is a plastic mould manufacture and custom injection moulding company. The Company is located at 139 Iber Road within the City of Ottawa (the "Site"). The inspection focused on compliance with the Environmental Protection Act (EPA), Ontario Regulation 347 - General Waste Management (O.Reg 347), and other applicable guidelines and policies.

No previous Ministry of the Environment inspection had occurred at the Site.

2.0 INSPECTION OBSERVATIONS

Generator Registration Report No(s)
ON5094526

Date of last registration
2012/01/11

2.1 REGISTERED WASTES

Has the generator properly registered?

- ☒ Yes. The generator has properly registered.
- ☐ No. The generator is exempt from generator registration.
- ☐ No. The generator has not registered and is not exempt.
- ☐ No. The generator has incorrectly classified the subject waste.

☐ No. The generator is currently registered, but not for all applicable subject wastes.
☐ No. The generator has incorrectly registered by not completing other required information on HWIN, or by mail-in registration.
☐ No. The generator has not properly registered all land disposal restriction (LDR) wastes.

The Company is currently registered as a generator of subject waste with the Ministry of the Environments Hazardous Waste Information Network (HWIN) for the 2012 operating year.

2.2 DESCRIPTION OF PROCESS GENERATING WASTE MATERIALS

The Company is registered to generate the following waste classes:

251-L - Waste oils/Sludges - Oil/water separator sludge; dissolved air floatation skimming; heavy oil tank drainage; slop oil and emulsions.

252-L - Waste crank oils and lubricants - Collected service station waste oils; industrial lubricants; bulk waste oils.

The Site generates the waste classes as a result of routine maintenance of equipment.

2.3 MANIFESTING

Has the generator properly released and manifested all subject waste shipped off site for disposal or reclamation?

☐ Not applicable
☒ Yes. The generator has properly released and manifested all subject waste shipped off site for disposal and/or reclamation.
☐ No. The generator has transported subject waste itself, without a proper Certificate of Approval for the waste type(s).
☐ No. The generator has released subject waste to a carrier without a proper Certificate of Approval for the waste type(s).
☒ No. The generator has not completed, or properly completed manifest(s).
☐ No. The generator has not properly notified the Ministry of the waste shipped.
☐ No. The generator has used paper manifests and has not retained the green copies for two years.

At the time of the inspection a manifest review was completed to determine if the Site is properly completing and retaining the appropriate manifest records. Please see below the results of the manifest review.

Waste Manifest

JP80861:

Copy 2 (Green) - Retained on-site as required
Copy 6 (Brown) - Received and retained on-site as required

TA69651:

Copy 2 (Green) - Retained on-site as required
Copy 6 (Brown) - Received and retained on-site as required

JP84092:

Copy 2 (Green) - Retained on-site as required
Copy 6 (Brown) - Received and retained on-site as required

TA77655:

Copy 2 (Green) - Retained on-site as required
Copy 6 (Brown) - Not available for review as the Company did not receive Copy 6. The Company Representative informed the Inspecting Officer that the Carrier (Safety Kleen) will be contacted to follow-up with this waste manifest. The Inspecting Officer informed the Company Representative of the responsibilities of the Generator (the Company) to ensure waste is properly disposed of and that Copy 6 is received as required by O. Reg 347.

HY83654:

Copy 2 (Green) - Retained on-site as required
Copy 6 (Brown) - Not available for review as the Company did not receive Copy 6. The Company Representative informed the Inspecting Officer that the Carrier (Safety Kleen) will be contacted to follow-up with this waste manifest.

Requirements of Manifesting of Waste - O. Reg. 347

Section 18 (11) - A generator who transfer subject waste to a waste transportation system shall, within four weeks after the transfer, confirm that the waste was delivered to the intended receiving facility or to another receiving facility approved to accept the waste, and, if the generator does not confirm the delivery within that period, the generator shall, within six weeks after the transfer, notify the Director in writing that the delivery has not been confirmed. O.Reg. 337/09, s. 9 (3); O.Reg. 234/11, s. 21 (1).

2.4 LAND DISPOSAL RESTRICTION (LDR)

Has the generator complied with the land disposal restriction requirements of Reg. 347?

- ☒ Not applicable
- ☐ Yes. The generator is in compliance with the applicable land disposal restriction requirements of Reg. 347.
- ☐ Yes. The generator is a small quantity generator.
- ☐ No. The generator is diluting wastes.
- ☐ No. The generator has shipped fully treated characteristic waste without providing a simple statement to the receiver.
- ☐ No. The generator has not notified the receiver of land disposal restriction waste shipments on or before the first shipment of the waste stream.
- ☐ No. The generator is mixing, blending or bulking waste not for the purposes of treating waste to land disposal restriction standards and does not have a Certificate of Approval that allows mixing, blending or bulking.

The subject waste generated at the Site is not subject to Land Disposal Restriction requirements.

Is treatment required to meet land disposal restriction standards?

○ Yes ● No

2.5 ON-SITE STORAGE

Has the generator been storing all subject waste in accordance with Reg. 347 and in a secure manner as required by the Environmental Protection Act?

- ☐ Not applicable
- ☒ Yes. All subject wastes are stored in accordance with Reg. 347 and in a secure manner.
- ☐ No. The generator has not provided a notice to the Regional Director for subject waste stored for greater than 3 months.
- ☐ No. Wastes are stored in such a manner that there is a potential for fire, or explosions.
- ☐ No. Wastes are stored in such a manner that there is a potential for a spill that could adversely impact the natural environment.
- ☐ No. Wastes are not secured at the site and have been released to the natural environment.
- ☐ No. Wastes have been spilled from this site and have had, or are having an adverse impact on the natural environment.
- ☐ No. The generator has stored subject waste for a period greater than 24 months without applying for or not in accordance with a Certificate of Approval.

Subject waste is stored in 40gal drums in the maintenance department of the Site. The drums are located in a low traffic area to prevent any spills or upsets. The area is equipment with absorbent material in the event of a spill. No floor drains are located near or around the waste storage area.

2.6 OTHER PERTINENT CERTIFICATE(S) OF APPROVAL FOR THE SITE

No other waste management operations occur at the Site which would require the Company to obtain an Environmental Compliance Approval.

Does on-site disposal of subject waste(s) occur at this site?

○ Yes ● No

2.7 DISCHARGE OF WASTES TO MUNICIPAL SEWER(S)

Does the generator discharge subject waste to municipal sewers?

☒ No. Subject waste is not discharged to the municipal sewers.
☐ Yes. Subject waste is discharged to the municipal sewers, but the municipality is aware of this practise and the generator is properly registered for all hazardous waste.
☐ Yes. Subject waste is discharged to municipal sewers, but the municipality is not aware of this practise.
☐ Yes. Hazardous waste is discharged to municipal sewers, but is not registered.

Subject waste is not discharged to any municipal sewers.

3.0 REVIEW OF PREVIOUS NON-COMPLIANCE ISSUES

No previous non-compliance issues were identified during the file review prior to the inspection

4.0 SUMMARY OF INSPECTION FINDINGS (HEALTH/ENVIRONMENTAL IMPACT)

Was there any indication of a known or anticipated human health impact during the inspection and/or review of relevant material, related to this Ministry's mandate ?
No

Specifics:

Was there any indication of a known or anticipated environmental impact during the inspection and/or review of relevant material ?
No

Specifics:

Was there any indication of a known or suspected violation of a legal requirement during the inspection and/or review of relevant material which could cause a human health impact or environmental impairment ?
No

Specifics:

Was there any indication of a potential for environmental impairment during the inspection and/or the review of relevant material ?
No

Specifics:

Was there any indication of minor administrative non-compliance?
Yes

Specifics:
Copy 6 of some waste manifests were not received by the Company.

5.0 ACTION(S) REQUIRED

L-D Tool & Die must ensure compliance with the following action item outlined below.

1. Ensure Copy 6 (brown) of each waste manifest is received after each shipment of subject waste as per Section 18 of Ontario Regulation 347 outlined below.

Section 18 (11) of Ontario Regulation

"A generator who transfers subject waste to a waste transportation system shall, within four weeks after the transfer, confirm that the waste was delivered to the intended receiving facility or to another receiving facility approved to accept the waste, and, if the generator does not confirm the delivery within that period, the generator shall, within six weeks after the transfer, notify the Director in writing that the delivery has not been confirmed. O.Reg. 337/09, s.9 (3); O.Reg. 234/11, s. 21 (1).

1. Ensure Copy 6 (brown) of each waste manifest is received after each shipment of subject waste as per Section 18 of Ontario Regulation 347 outlined below:

6.0 OTHER INSPECTION FINDINGS

It is recommended that the Site obtain additional spill prevention and clean-up material (absorbent booms, pads, drain/sewer covers) in the event a spill or accident occurs. The Site has obtained an Environmental Compliance Approval for a Stormwater Management Pond located at the rear of the Site to treatment Site drainage. A catch basin is located at the loading bay of the building which is used for loading and unloading of raw products and subject waste Obtaining additional spill prevention and clean-up material could prevent impacts to this catch basin in the event of a spill or accident.

7.0 INCIDENT REPORT

Applicable
0316-8YBJ75

8.0 ATTACHMENTS

PREPARED BY:	
Environmental Officer:	
Name:	**Kyle Straberger**
District Office:	**Ottawa District Office**
Date:	**2012/09/24**
Signature	

REVIEWED BY:	
District Supervisor:	
Name:	**Tara MacDonald**
District Office:	**Ottawa District Office**
Date:	**2012/09/27**
Signature:	T. MacDonald

File Storage Number: SI OT GO IB 700

Note:
"This inspection report does not in any way suggest that there is or has been compliance with applicable legislation and regulations as they may apply to this facility. It is, and remains, the responsibility of the owner and/or the operating authority to ensure compliance with all applicable legislative and regulatory requirements"

Ontario

Ministry of the Environment
Ministère de l'Environnement

INCIDENT REPORT

Reference Number:	0316-8YBJ75	**File Storage Number:**	SI OT GO IB 230
Module:	Incident Reporting	**Module Type:**	CofA/Permit Non-Compliance
Cross Reference:	(doc link)	**Task Link:**	7013-8YBJ8W
Originating Document:		**Created by:**	Kyle Straberger
Incident Report Reference Number:		0316-8YBJ75	
Date Created:	2012/09/20	**Date Completed:**	
Bring Forward Date:		**Bring Forward Reason:**	
Status:	Recommended		
Program	Sewage - Industrial	**Activity:**	Inspections - Industrial Sewage

Is this an **air emission** (measured or modelled) or **wastewater** (sewage) **discharge exceedance** that will become part of the Environmental Compliance Report?

(legislation, certificate of approval, order, or guideline)

○ Yes ● No ○ To be determined *Click here for Guidance*

Caller or PO Information

Reported By:			
First Name Kyle	**Last Name** Straberger		
Contact Mailing Address			
Municipality:			
Ottawa			

Reported By:	

MOE Information

Date & Time Reported to MOE:	2012/09/19 09:46		
Office Receiving Incident Report:	Ottawa District Office		
Incident Info Received By:	Kyle Straberger		
MOE Response:	No Field Response	**Site Region:**	Eastern
Date & Time of MOE Arrival at Scene:			
Master Incident Report Number:			
SAC Action Class:			
Non-Standard Procedure:	No		
ERP Call-out Initiated:			

Client(s)

Client Details
3843173 Canada Inc. Mailing Address: 139 Iber Rd Lot 5 Part 4/5 Plan 4M-658, Ottawa, Ontario, Canada, K2S 1E7 Physical Address: 139 Iber Rd Lot 5 Part 4/5 Plan 4M-658, Ottawa, City, Ontario, Canada, K2S 1E7 Telephone: (613)591-1474 Client #: 8884-5WVKLA, Client Type: Corporation, NAICS: 3261 Additional Address Info: Lot 5 Part 4/5 Plan 4M-658

Site(s)

Site Details
L-D Tool and Die Address: 139 Iber Rd Lot 5 Part 4/5 Plan 4M-658, Ottawa, City District Office: Ottawa LIO GeoReference: Zone: 18, UTM Easting: 429211.78, UTM Northing: 5014051.0, Latitude: 45.27639, Longitude: -75.902504 Site #: 2768-5WVKNX

Incident Information

Incident Summary:	Non-Compliance with ECA *cannot be longer than 60 characters*
Incident Description:	Industrial Sewage Works Inspection was completed September 19, 2012 which identified a non-compliance item with Condition 2 of ECA 1916-5XEMBL (annual inspection of industrial sewage works system). Company has been made aware of their responsibility to ensure complaince with this condition. The Company will start completing the annual insepction and document the findings in a log book.

Links & Comments:	
Attachments Names:	

Date & Time of Incident	**Incident Date Confirmation?** Actual 2012/09/19		
Source Type:		**Sector Type:**	
Nearest Watercourse:		**Watershed Category Code:**	
Environmental Impact:	Not Anticipated		
Nature of Impact:			
Incident Cause:		**Incident Reason:**	
Damaged Party:	No		
What effluent types are being assessed?	Stormwater		

Contaminants Table

Contaminant Name	Code	UN#	Limit	Quantity	[units]	[freq]

Controller of Material:		Owner of Material:	
Estimated Clean Up Cost:		Who Cleaned Up:	
% Clean Up:	%	Agencies Involved:	

Voluntary / Mandatory Abatement

Is there Voluntary Abatement Activity?	● Yes	○ No	○ To be determined

Voluntary / Mandatory Compliance Items

Type	Parent RefNo	Work Summary (may be truncated)	Date	AttainList
VAI	0582-8YBHLQ	1. Ensure Condition 2 of the En ...	2012/09/19	2012/09/19
VAI	8327-8YBJHG	Ensure Copy 6 (brown) of each w ...	2012/09/19	2012/09/19

Offence(s)

Suspected Violation(s)/Offence(s):	
Act - Regulation - Section, Description {General Offence}	

Provincial Officer:

Name: Kyle Straberger
Badge No: 1529

Work Unit:
District/Area Office: Ottawa District Office
Date: 2013/05/16

Signature:

District/Area Supervisor:

Name:

Work Unit:
District/Area Office:
Date:

Signature:

Ministry of the Environment, Conservation and Parks

Freedom of Information and Protection of Privacy Office

12th Floor
40 St. Clair Avenue West
Toronto ON M4V 1M2
Tel: (416) 314-4075

Ministère de l'Environnement, de la Protection de la nature et des Parcs

Bureau de l'accès à l'information et de la protection de la vie privée

12e étage
40, avenue St. Clair ouest
Toronto ON M4V 1M2
Tél. : (416) 314-4075

Ontario

December 21, 2018

Nicole Soucy
Gemtec
32 Steacie Drive
Stittsville, ON K2K2A9

Dear Nicole Soucy:

RE: *Freedom of Information and Protection of Privacy Act* Request
Our File # A-2018-08018, Your Reference 64153.50

This letter is further to your request made pursuant to the *Freedom of Information and Protection of Privacy Act* relating to 119 Iber Road, Stittsville.

Attached is a copy of the records.

If you have any questions regarding this matter, please contact Dawn Lewis at (416) 327-1429 or dawn.lewis@ontario.ca.

Yours truly,

Janet Dadufalza
Manager, Access and Privacy

Attachment

Ontario

Ministry of the Environment, Conservation and Parks

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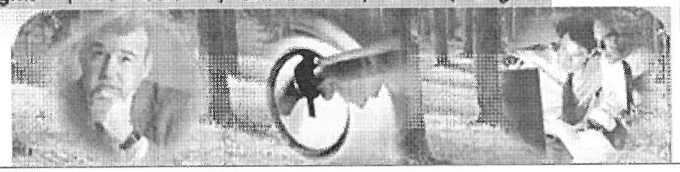
hwin

Administration



Search

Go

Generator Details

Registration/Notification Number

ON3491039

Legal Company Name

Primary Name:	D C Bus Lines	Division Name:	NA

Company Operating Name

Primary Name:	D C Bus Lines	Division Name:	NA

Mailing Address

Division Building:	NA	Post Box Number:	NA
Address Line 1:	119 Iber Rd	Address Line 2:	Unit 8
Town/City:	stittsville	Postal Code / Zip Code:	K2S1E7
County: (if inside Ontario)	OTTAWA CARLTON (RM)	Province/State (If inside Canada/US)	ONTARIO
County: (if outside Ontario)	NA	Province / State (If outside Canada / US)	NA
Country:	Canada		

Site Location

This should be the street address of the site that is being registered. You are required to register each site that generates hazardous waste separately.

Division Building:	NA	Post Box Number:	NA
Address Line 1:	119 Iber Rd		
Address Line 2:	Unit 8		
Town/City:	stittsville	Postal Code / Zip Code:	K2S1E7
County: (if inside Ontario)	OTTAWA CARLTON (RM)	Province / State (If inside Canada / US)	ONTARIO
County: (if outside Ontario)	NA	Province / State (If outside Canada / US)	NA
Country:	Canada		

Ontario

Ministry of the Environment, Conservation and Parks

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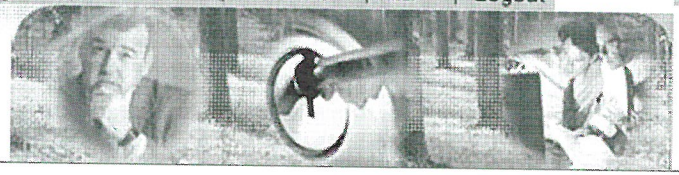
Administration



Search

Go

Company Name: **D C Bus Lines**

Company Number: **ON3491039 (Generator)**

Active Waste Classes

Active Waste Class Listing

Add New Waste Class | Inactive waste classes

Active Off-site Waste Classes

Waste Class	View Details	Hazardous Waste Number (per waste stream)	Reg. 347 Schedules	Disposal Method	Part 2B required	Part 2B complete	Physical State	Off-Site	Status	UnRegister Waste Class
252 - L	View Details	N/A					Liquid	Off-Site	Active	☐

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Ministry of the Environment, Conservation and Parks

Access and Privacy Office
12th Floor
40 St. Clair Avenue West
Toronto ON M4V 1M2
Tel: (416) 314-4075
Fax: (416) 314-4285Fax:

Ministère de l'Environnement, de la Protection de la nature et des Parcs

Bureau de l'accès à l'information et de la protection de la vie privée
12e étage
40, avenue St. Clair ouest
Toronto ON M4V 1M2
Tél. : (416) 314-4075

Ontario

December 20, 2018

Nicole Soucy
Gemtec
32 Steacie Drive
Stittsville, ON K2K2A9

Dear Nicole Soucy:

RE: ***Freedom of Information and Protection of Privacy Act*** **Request**
Our File #: A-2018-08019, Your Reference #: 64153.50

This letter is further to your request made pursuant to the *Freedom of Information and Protection of Privacy Act* relating to 135 Iber Road, Stittsville.

After a review of the records received from the Ministry's Ottawa District Office and Environmental Monitoring and Reporting Branch, the final decision has been made to provide full access to the attached information.

In accordance with Section 57 of the *Freedom of Information and Protection of Privacy Act*, detailed below are our charges:

• Search Time 1 hour @ $30/hour	$ 30.00
• Copying 45 pages @ $0.20/page	$ 9.00
• Delivery	$ 3.00
• **Total**	**$ 42.00**
• Deposit Received	-$ 41.00
• **BALANCE WAIVED (NOT REQUIRED)**	**$ 1.00**

You may request a review of my decision by contacting the Information and Privacy Commissioner/Ontario, 2 Bloor Street East, Suite 1400, Toronto, ON M4W 1A8 (800-387-0073 or 416-326-3333). Please note that there is a $25.00 fee and you only have 30 days from receipt of this letter to request a review.

If you have any questions regarding this matter, contact Rusby Chaparro at rusby.chaparro@ontario.ca.

Yours truly,

for

Janet Dadufalza
Manager, Access and Privacy

Attachment

Generator Details

Registration/Notification Number

ON9986485

Legal Company Name

Primary Name:	Ottawa Powder Coating Ltd	Division Name:	NA

Company Operating Name

Primary Name:	Ottawa Powder Coating Ltd	Division Name:	NA

Mailing Address

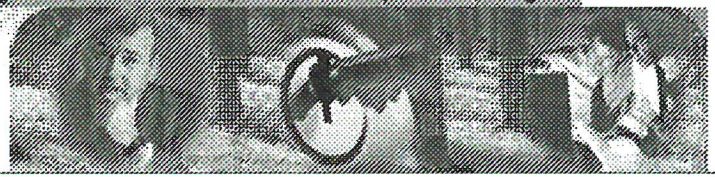
Division Building:	NA	Post Box Number:	NA
Address Line 1:	135 Iber Rd Unit 2	Address Line 2:	NA
Town/City:	Stittsville	Postal Code / Zip Code:	K2S 1E7
County: (if inside Ontario)	OTTAWA CARLTON (RM)	Province/State (If inside Canada/US)	ONTARIO
County: (if outside Ontario)	NA	Province / State (If outside Canada / US)	NA
Country:	Canada		

Site Location

This should be the street address of the site that is being registered. You are required to register each site that generates hazardous waste separately.

Division Building:	NA	Post Box Number:	NA
Address Line 1:	135 Iber Rd Unit 2		
Address Line 2:	NA		
Town/City:	Stittsville	Postal Code / Zip Code:	K2S 1E7
County: (if inside Ontario)	OTTAWA CARLTON (RM)	Province / State (If inside Canada / US)	ONTARIO
County: (if outside Ontario)	NA	Province / State (If outside Canada / US)	NA
Country:	Canada		

Company Official



Company Name: **Ottawa Powder Coating Ltd**
Company Number: **ON9986485 (Generator)**

Active Waste Classes

Active Waste Class Listing

Add New Waste Class | Inactive waste classes

Active Off-site Waste Classes

Waste Class	View Details	Hazardous Waste Number (per waste stream)	Reg. 347 Schedules	Disposal Method	Part 2B required	Part 2B complete	Physical State	Off-Site	Status	UnRegister Waste Class
212 - L	View details	N/A					Liquid	Off-Site	Active	☐
267 - L	View Details	N/A					Liquid	Off-Site	Active	☐

Unregister Selected Classes

Back

Ontario

Ministry of the Environment
Ministère de l'Environnement

135 St. Clair Avenue West
Suite 100
Toronto, Ontario
M4V 1P5

135, avenue St. Clair ouest
Bureau 100
Toronto (Ontario)
M4V 1P5

MAY 17 1991

Tenpro Sign Products
102-135 Iber Rd.
Stittsville, Ontario
K2S 1E7

Attn: Mr. S. McLeod
Production Manager

Dear Mr. McLeod:

RE: Acknowledgement of Subject Waste Registration

As prescribed by Section 15(4) of Ontario Regulation 309, this letter acknowledges receipt of your Generator Registration Report(s) dated March 20, 1990 and further correspondence as outlined in Schedule "B" for the following site:

102-135 Iber Rd.
Stittsville, Ontario

The Generator Registration Number assigned to your company at this site is:

ON1266101

Please note that this Generator Registration Number must be used only in conjunction with the site for which it was issued.

This acknowledgement letter supersedes the previous acknowledgement letter dated April 9, 1990 for the former site having Generator Registration number ON1266100.

Please ensure that the company name shown in this letter is complete and accurate. This would be the corporate name or, if a partnership or proprietorship, the name of the principal(s). If you intend to carry on business under a separate name or style, this should also be entered. If there is a discrepancy, it is your responsibility to re-register providing us with your complete and accurate company name.

A list of the waste stream(s) covered by this acknowledgement is attached to this letter as Schedule "A".

Under the Environmental Protection Act of Ontario, off-site and on-site disposal of subject wastes is only permissible if the property receiving the waste has been approved as a waste disposal site. The disposal of waste materials in an uncertified site is unlawful.

For off-site disposal of subject wastes, the waste number(s) describing the waste stream(s) in Schedule "A" and the Generator Registration Number must be entered on manifest forms for each waste transaction after you have received this generator registration document.

For on-site disposal of subject wastes covered by this acknowledgement, including on-site incineration, landfilling and discharges to sanitary sewers, every generator shall retain records for a period of at least two years. These records shall include the generator registration number, waste name(s), waste number(s), quantity and disposition of the waste(s).

For off-site disposal of any registerable solid wastes shown in Schedule "A" (waste classes ending in the letter "N"), manifesting is not required at this time. These wastes can be disposed of at most approved municipal landfilling sites.

The selection of accurate waste classes is the responsibility of each waste generator. This acknowledgement must not be considered as a confirmation of the accuracy of information submitted by you. Based on the information you have provided, the waste class(es) that has (have) been selected appear(s) to be correct. If, due to new information or re-assessment of information submitted, you feel your waste is inappropriately classified, you should apply for a revision to your registration using the Generator Registration Report, Form 2. Should the waste class(es) that you have selected be deemed incorrect by the Ministry, or improper waste disposal occurs at any time, you may be subject to legal action as provided by the Environmental Protection Act and Regulation 309.

Your Generator Registration Report has now been forwarded to the District Office of this Ministry that is closest to your generating site. The District Office will be conducting a post-registration audit and may be

contacting you for additional information or may be conducting site visits.

It is important to note that under Section 15(4) of Ontario Regulation 309, a new Generator Registration Report must be submitted to the Ministry within fifteen (15) days for any of the following reasons:

1. If the name, address or telephone number of your company or waste generating site changes.

2. If the description, the waste class or physical or chemical characteristics of your registered wastes change(s).

3. If you generate a hazardous or liquid industrial waste that has not been registered with the Ministry.

If the quantity of registered wastes or your carrier or receiver changes, automatic re-registration is <u>not</u> required. However, in order to update our file, we may periodically request additional information when we observe or suspect a significant change as compared to the most recent information submitted by you for registration purposes.

Should you have any questions concerning generator registration or manifesting requirements, please contact the Waste Management Branch Reviewer identified below at 323-5056.

Yours truly,

Director
Regulation 309, R.R.O., 1980
Environmental Protection Act

Waste Management Branch Reviewer: J. Armiento

WT/lvc

Enclosure

SCHEDULE "A"

This attached Schedule forms part of the acknowledgement of generator registration for the facility and site identified by Generator Registration Number ON1266101, dated at Toronto, MAY 17 1991

	Waste Stream	Waste Class
1.	Waste naphtha petroleum	213I

Waste Management Branch Reviewer: J. Armiento

SCHEDULE "B"

This attached Schedule forms part of the acknowledgement of generator registration for the facility and site identified by Generator Registration Number ON1266101, dated at Toronto, MAY 17 1991

	Date
Initial Generator Registration Report (GRR)	MAR 20,1990
Letter(s):	APR 18,1991

Waste Management Branch Reviewer: J. Armiento

Ottawa Powder Coating

125 Iber Road, Unit 2, Stittsville, ON K2S [illegible]

November 13, 2008

Ministry of the Environment
Ottawa District Office
2430 Don Reid Drive
Ottawa, Ontario K1H 1E1

Attention: Tara MacDonald Sr. Environmental Officer

RE: AIR FACILITY and SUBJECT WASTE GENERATOR INSPECTION CONDUCTED at 2-135 IBER ROAD on July 21,2008

Dear Ms. MacDonald,

Thank you for your letter of July 31, 2008 outlining the non-conforming issues at Ottawa Powder Coating Ltd.

We take environmental issues very seriously and we continually strife to improve our methods and procedures to be compliant.

The outstanding issues and the actions taken by Ottawa Powder Coating Ltd are as follows:

Issue: Waste Disposal

Action Taken: Ottawa Powder Coating Ltd has taken the step not to discharge any wastes to Municipal sewers. We have installed a holding tank to store all liquid waste until such time as it is ready to be disposed. Safety Kleen of Nepean, Ontario has been contacted to dispose of this waste.

We have registered with the Ministry of Environment's hazardous waste information network as a waste generator. Our number is **ON9986485**

Issue: Air Discharge Certificate of Approval

Action Taken: Ottawa Powder Coating has issued a contract to: **Aqua Terre Solutions Inc 2 Gurdwara Road Suite 200 Ottawa Ontario** and our contact is Dr. David Zhang to do the necessary testing and evaluation of the system in place at Ottawa Powder Coating to see if it complies to the guidelines as established by MOE. It is my understanding that a complete application for a certificate of approval (air) to the

Ottawa Powder Coating

Environmental Assessment and Approvals Branch (EAAB) in Toronto and a copy to the Ottawa District Office will be submitted by December 1, 2008.

I hope that the information supplied meets with the issues as outlined in your correspondence.

If you have any questions, comments or concerns please do not hesitate to call me at anytime.

Sincerely,

Jake Maat
President

Copy received from Kent Shrecker of Ottawa Powder Coating Ltd. - July 21, 2008.

ATOTECH

UNIPREP PP

MATERIAL SAFETY DATA SHEET

Revision Number: 4

Print date: 08-Jan-2007

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

Product code: 2201256
Product name: UNIPREP PP
Synonyms: No information available
Chemical characterisation: Organic acid solution

Supplier:

ATOTECH USA INC
1750 OVERVIEW DRIVE
ROCK HILL, SC 29730
TELEPHONE 800-917-3500
HOURS: 9:00am - 5:00pm EST

ATOTECH CANADA LTD
1180 CORPORATE DRIVE
BURLINGTON, ONTARIO L7L 5R6
TELEPHONE 905-332-0111
HOURS: 9:00am - 5:00pm EST

Emergency telephone number

SPILLS AND TRANSPORT: CHEMTREC 800-424-9300; CANUTEC 613-996-6666

TRANSPORT MEDICAL: ROCKY MOUNTAIN POISON CONTROL CENTER 303-623-5716

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

CAUTION
IRRITANT

This material is considered to be hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
This material is a controlled product under WHMIS.

Potential health & environmental effects

Properties affecting health: May cause eye/skin irritation

Principle routes of exposure: Eyes, Skin, Respiratory system, Gastrointestinal tract

Skin contact: May cause irritation

Eye contact: Contact with eyes may cause irritation

Inhalation: May cause irritation of respiratory tract

Ingestion: Ingestion may cause irritation to mucous membranes

3. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENTS (BY WEIGHT PERCENT)

Components	CAS-No	Weight %
Succinic acid	110-15-6	1 - 5

This product may contain component (s) that are not listed under disclosure. All components not listed do not contain hazardous materials above germanium disclosure limits as defined by OSHA, NIOSH, ACGIH or Canadian WHMIS regulations and or guidelines. Please refer to other sections of the MSDS for information on safety, health and environmental guidelines and precautions.

OTTAWA POWDER COATING LTD.

000010

oduct name: UNIPREP PP

4. FIRST AID MEASURES

General advice:	Consult a physician.
Skin contact:	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
Inhalation:	Move to fresh air. If symptoms persist, call a physician.
Eye contact:	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
Ingestion:	Call a physician or Poison Control Center immediately. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.
Notes to physician:	Treat symptomatically.
Protection of first-aiders:	Avoid contact with skin and eyes.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Extinguishing media which must not be used for safety reasons:	No information available.
Special protective equipment for firefighters:	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA / NIOSH (approved or equivalent) and full protective gear.
Specific hazards:	Thermal decomposition can lead to the release of irritating gases and vapors which may include (but are not limited to) carbon oxides, nitrogen oxides, sulfur oxides, ammonia, boron oxides.
Unusual hazards:	No hazards to be especially mentioned.
Specific methods:	In the event of fire, cool tanks with water spray.
Flash Point: Flash point test method: Autoignition temperature:	Not flammable. Not applicable. Not applicable.
Flammability Limits in Air: - Lower: - Upper:	 Not applicable. Not applicable.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:	Isolate area and deny entry to unauthorized and/or unprotected personnel. See Section 8 for complete Personal Protective Equipment (PPE) recommendations.
Environmental precautions:	Do not release into the environment or public sewage without consulting local authorities and obtaining all applicable permits and notification requirements.
Methods for containment:	Prevent further leakage or spillage if safe to do so.
Methods for cleaning up:	Spills should be cleaned up immediately to prevent dispersion of airborne mists and dusts. Keep in suitable, closed containers for disposal. Dike spilled liquid material with suitable inert absorbent (ex. sand, soil, vermiculite) and place in a clean dry container for later recycle or disposal. Flush with water. Clean contaminated surface thoroughly. Dispose of in accordance with all local, state, provincial, and federal regulations.

7. HANDLING AND STORAGE

oduct name: UNIPREP PP

7. HANDLING AND STORAGE

Handling

Technical measures/precautions: Use only in area provided with appropriate exhaust ventilation.

Safe handling advice: Avoid contact with skin, eyes and clothing. Avoid breathing vapors or mists. Do not ingest.

Storage

Technical measures/storage conditions: Keep containers tightly closed in a dry, cool and well-ventilated place.

Incompatible products: Oxidizing agents. Reducing agents. Bases.

Shelf Life (days): 730

Storage Temperature

Do not store below: 24 °F / -4 °C

Do not store above: 104 °F / 40 °C

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures to reduce exposure:
Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment

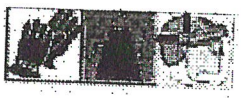
Respiratory protection: Use NIOSH approved respiratory equipment when airborne concentrations are equal to or may exceed exposure limits. For emergency or other conditions where exposure levels are not known or may be uncontrolled, use a positive pressure air-supplied or self-contained breathing apparatus (SCBA).

Hand protection: Consult glove manufacturer to determine the most suitable chemical resistant glove for user's application. Consideration must be given to durability and permeation resistance.

Skin and body protection: Chemical resistant apron. Long sleeved clothing. Boots.

Eye protection: Tightly fitting safety goggles. Face-shield. An emergency eye wash must be readily accessible to the work area.

Hygiene measures: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke.



Exposure limits	ACGIH	OSHA	NIOSH

Product name: UNIPREP PP

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Liquid.	Color:	Colorless.
Odor:	Mild.	Specific gravity:	1.005 - 1.035
pH:	7.50 - 9.50	Boiling point:	Not applicable.
Melting point:	Not applicable.	Evaporation rate:	Not applicable.
Vapor density:	Not applicable.	Vapor pressure:	Not applicable.
VOC content(%):	Not applicable.	Solubility in water:	Complete.
Solubility in other solvents:	No information available.		

Flash Point:	Not flammable.	Flash point test method:	Not applicable.
Autoignition temperature:	Not applicable.	Decomposition temperature:	Not applicable.

Explosion limits:
- Upper: Not applicable.
- Lower: Not applicable.

10. STABILITY AND REACTIVITY

Stability: Stable under recommended storage conditions.

Materials to avoid: Oxidizing agents. Reducing agents. Bases.

Conditions to avoid: Keep away from open flames, hot surfaces and sources of ignition. Extremes of temperature and direct sunlight. Incompatible products.

Hazardous decomposition products: Thermal decomposition can lead to the release of irritating gases and vapors which may include (but are not limited to) carbon oxides, nitrogen oxides, sulfur oxides, ammonia, boron oxides.

Possibility of hazardous reactions: None under normal processing.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Component information

Components	LD50/oral/rat	LC50/inhalation/6h/rat	LD50/dermal/rabbit
Succinic acid - 110-15-6	2260 mg/kg	No information available	No information available

Product information
- LC50/inhalation/4h/rat = No information available
- LD50/dermal/rabbit = No information available
- LD50/oral/rat = No information available

Local effects

Skin irritation: May cause irritation.

Eye irritation: Contact with eyes may cause irritation.

Inhalation: May cause irritation of respiratory tract.

Ingestion: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Chronic toxicity: Effects of long term exposure to this product, as a whole, have not been determined.

Specific effects

Carcinogenic effects: No information available.

Mutagenic effects:	No information available
Reproductive toxicity:	No information available
Target organ effects:	No information available

Carcinogens

12. ECOLOGICAL INFORMATION

Environmental Hazards

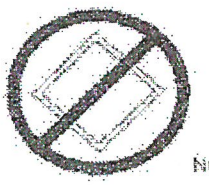
Ecotoxicity effects:	No data available
Aquatic toxicity:	No information available
Mobility:	This product is soluble in water
Bioaccumulative potential:	There is no indication of biomagnification along the terrestrial food chain (soil-plant-animal)

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products: Dispose of in accordance with federal, provincial, state, and local regulations.

Contaminated packaging: Empty containers should be taken for local recycling, recovery or waste disposal

14. TRANSPORT INFORMATION



Not classified as dangerous in the meaning of transport regulations.

DOT

Proper shipping name DOT:	Non Regulated
Description (DOT):	NON REGULATED

TDG (Canada)

Proper shipping name TDG:	Non Regulated
Description (TDG):	NON REGULATED

IMO / IMDG

Proper shipping name (IMDG):	Non Regulated
Description (IMO/IMDG):	NON REGULATED

IATA

Proper shipping name (IATA):	Non Regulated
Description (IATA):	NON REGULATED

15. REGULATORY INFORMATION

International Inventories

All of the components in this product are on or exempt from the following inventories:
U.S.A. (TSCA)

oduct name: UNIPREP PP

International Inventory Legend
TSCA: Toxic Substance Control Act
DSL: Domestic Substance List
NDSL: Non-Domestic Substance List
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: EU List of Notified Chemical Substances
ECL: Existing Chemicals List are Existing and Evaluated Chemical Substances
AICS: Inventory of Chemical Substances
ENCS: Existing and New Chemical Substances
PICCS: Philippines Inventory of Chemicals and Chemical Substances

U.S. Regulations:

U.S. Regulations Legend
CA PROP 65: California Proposition 65 - Carcinogens List
TSCA 12(b): TSCA Section 12(b) - Export Notification
SARA 302: CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs and TPQs
SARA 313: CERCLA/SARA - Section 313 - Emission Reporting
CERCLA RQ: CERCLA/SARA - Hazardous Substances and Their Reportable Quantities
CWC: Chemical Weapons Convention - Annex on Chemicals
DEA LISTED: DEA (Drug Enforcement Administration) - DEA Controlled, Precursors, and/or Essential Chemicals

SARA 311	
Acute Health Hazard	YES
Chronic Health Hazard	NO
Fire Hazard	NO
Sudden Release of Pressure Hazard	NO
Reactive Hazard	NO

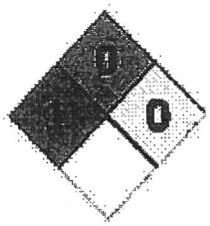
Canada
This product has been classified in accordance with the criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

WHMIS Controlled List

HAZARDOUS COMPONENTS		
Components	CAS No	WHMIS Call out threshold
Succinic acid	110-15-6	1%

WHMIS hazard class:
- D2B: Toxic materials

16. OTHER INFORMATION



NFPA: Health: 1 Flammability: 0 Instability: 0

Product name: UNIPREP PP

CAREFULLY READ THE FOLLOWING. The identification of ingredients in this document meets or exceeds the requirements set forth in 29 CFR, 40 CFR, TDG et al. at the date of publication. Ingredients present in a mixture or solution which are generically identified or not referenced in this document are not regulatorily required to be specifically identified or referenced. The information contained herein should be provided to all those who will use, handle, store, transport, or may otherwise be exposed to this product.

THE INFORMATION CONTAINED HEREIN, TO THE BEST OF OUR KNOWLEDGE, IS CONSIDERED TO BE ACCURATE. SUCH INFORMATION IS OFFERED SOLELY FOR YOUR CONSIDERATION, INVESTIGATION, AND VERIFICATION, AND WE DO NOT SUGGEST OR GUARANTEE THAT ANY PRECAUTIONS, PROCEDURES, RECOMMENDATIONS ETC. ARE PREFERRED OR UNIQUE. ATOTECH USA INC. AND ATOTECH CANADA LTD. MAKE NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, WITH RESPECT TO THE USE OF THIS INFORMATION OR THE USE OF MATERIAL IDENTIFIED HEREIN IN COMBINATION WITH ANY OTHER MATERIAL OR PROCESS, AND ASSUMES NO RESPONSIBILITY THEREFORE. THIS DOCUMENT WAS DEVELOPED UNDER THE REQUIREMENTS OF THE UNITED STATES AND CANADA, AND AS SUCH MAY NOT SATISFY OTHER STATE, PROVINCIAL OR REGIONAL REQUIREMENTS.

Prepared by: H.E.S. Department

From: to Debbie

Copies received July 21, 2008 from ~~Mr Keith~~ Kent Shroeder of Ottawa Powder Coating Inc.

ATOTECH

UNIPREP CC-W

MATERIAL SAFETY DATA SHEET

Print date: 25-Oct-2006

Revision Number: 2

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

Product code: 2200413

Product name: UNIPREP CC-W

Synonyms: No information available

Chemical characterisation: Mixture

Supplier:

ATOTECH USA INC
1750 OVERVIEW DRIVE
ROCK HILL, SC 29730
TELEPHONE: 803-817-3500
HOURS: 9:00am - 5:00pm EST

ATOTECH CANADA LTD
1180 CORPORATE DRIVE
BURLINGTON, ONTARIO L7L 5R6
TELEPHONE: 905-332-0111
HOURS: 9:00am - 5:00pm EST

Emergency telephone number

SPILLS AND TRANSPORT	CHEMTREC	800-424-9300
	CANUTEC	613-996-6666
TRANSPORT MEDICAL	ROCKY MOUNTAIN POISON CONTROL CENTER	303-623-5716

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW
CAUTION
IRRITANT

This material is considered to be hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)
This material is a controlled product under WHMIS

Potential health & environmental effects

Properties affecting health: Causes irritation

Principle routes of exposure: Eyes; Skin; Respiratory system; Gastrointestinal tract

Skin contact: Irritating to skin. May be absorbed through the skin in harmful amounts. May cause allergic skin reaction.

Eye contact: Severe eye irritation. May cause damage

Inhalation: Irritating to respiratory system

Ingestion: Causes irritation of the mouth, throat, and stomach. May be harmful if swallowed. Aspiration during ingestion or vomiting may cause lung damage.

3. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENTS (BY WEIGHT PERCENT)

Components	CAS-No.	Weight %
Hexylene glycol	107-41-5	1 - 5
Potassium pyrophosphate	7320-34-5	1 - 5

duct name: UNIPREP CC-W

his product may contain component (s) that are not listed under disclosure. All components not listed, do not contain hazardous materials above demonstrable disclosure limits as defined by OSHA, NIOSH, ACGIH or Canadian WHMIS regulations and or guidelines. Please refer to other sections of the MSDS for information on safety, health and environmental guidelines and precautions.

4. FIRST AID MEASURES

General advice:	Consult a physician.
Skin contact:	Rinse immediately with plenty of water and seek medical advice.
Inhalation:	Move to fresh air. If symptoms persist, call a physician.
Eye contact:	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
Ingestion:	Call a physician or Poison Control Center immediately. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.
Notes to physician:	Treat symptomatically.
Protection of first-aiders:	Avoid contact with skin and eyes.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Extinguishing media which must not be used for safety reasons:	No information available.
Special protective equipment for firefighters:	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA / NIOSH (approved or equivalent) and full protective gear.
Specific hazards:	Contact with metals may produce flammable hydrogen gas. Thermal decomposition can lead to the release of irritating gases and vapors which may include (but are not limited to) carbon oxides, nitrogen oxides, sulfur oxides, iron oxides, potassium oxides, sodium oxides.
Unusual hazards:	No hazards to be especially mentioned.
Specific methods:	In the event of fire, cool tanks with water spray.
Flash Point:	Not determined
Flash point test method:	Not applicable.
Autoignition temperature:	Not applicable.
Flammability Limits in Air:	
- Lower:	Not applicable.
- Upper:	Not applicable.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:	Isolate area and deny entry to unauthorized and/or unprotected personnel. See Section 8 for complete Personal Protective Equipment (PPE) recommendations.
Environmental precautions:	Do not release into the environment or public sewage without consulting local authorities and obtaining all applicable permits and notification requirements.
Methods for containment:	Prevent further leakage or spillage if safe to do so.

duct name: UNIPREP CC-W

ethods for cleaning up: Spills should be cleaned up immediately to prevent dispersion of airborne mists and dusts. For a spill involving a solid material, clean up promptly by scoop or vacuum. Avoid dust formation. Do not use receptacles made of aluminium, rubber or plastic to collect spilled liquids. Keep in suitable, closed containers for disposal. Dike spilled liquid material with suitable inert absorbent (ex: sand, soil, vermiculite) and place in a clean dry container for later recycle or disposal. Flush with water. Clean contaminated surface thoroughly. Dispose of in accordance with all local, state, provincial, and federal regulations.

7. HANDLING AND STORAGE

Handling

Technical measures/precautions: Use only in area provided with appropriate exhaust ventilation.

Safe handling advice: Avoid contact with skin, eyes and clothing. Avoid breathing vapors or mists. Do not ingest.

Storage

Technical measures/storage conditions: Keep containers tightly closed in a dry, cool and well-ventilated place. Do not freeze.

Incompatible products: Strong acids. Oxidizing agents. Aluminum. Magnesium.

Shelf Life (days): 365

Storage Temperature

Do not store below: 40 °F / 4 °C

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures to reduce exposure

Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment

Respiratory protection: Use NIOSH approved respiratory equipment when airborne concentrations are equal to or may exceed exposure limits. For emergency or other conditions where exposure levels are not known or may be uncontrolled, use a positive pressure air-supplied or self-contained breathing apparatus (SCBA).

Hand protection: Consult glove manufacturer to determine the most suitable chemical resistant glove for user's application. Consideration must be given to durability and permeation resistance.

Skin and body protection: Chemical resistant apron. Long sleeved clothing. Boots.

Eye protection: Tightly fitting safety goggles. Face-shield. An emergency eye wash must be readily accessible to the work area.

Hygiene measures: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke.

Exposure limits	ACGIH			OSHA			NIOSH		
Components	TWA	STEL	Ceilings	TWA	STEL	Ceilings	TWA	STEL	Ceilings
Hexylene glycol (107-41-5)			25 ppm						125 mg/m³ 25 ppm

duct name: UNIPREP CC-W

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Liquid	Color:	Brown
Odor:	Mild	Specific gravity:	1.04 - 1.11
pH:	10.6 - 12.2	Boiling point:	Not applicable
Melting point:	Not applicable	Evaporation rate:	Not applicable
Vapor density:	Not applicable	Vapor pressure:	Not applicable
VOC content(%):	Not applicable	Solubility in water:	Complete
Solubility in other solvents:	No information available		
Flash Point:	Not determined	Flash point test method:	Not applicable
Autoignition temperature:	Not applicable	Decomposition temperature:	Not applicable

Explosion limits:
- Upper: Not applicable
- Lower: Not applicable

10. STABILITY AND REACTIVITY

Stability:	Stable under recommended storage conditions.
Materials to avoid:	Strong acids. Oxidizing agents. Aluminum. Magnesium
Conditions to avoid:	Keep away from open flames, hot surfaces and sources of ignition. Extremes of temperature and direct sunlight. Incompatible products. Do not freeze
Hazardous decomposition products:	Thermal decomposition can lead to the release of irritating gases and vapors which may include (but are not limited to) carbon oxides, nitrogen oxides, sulfur oxides, iron oxides, potassium oxides, sodium oxides
Possibility of hazardous reactions:	Contact with metals may produce flammable hydrogen gas

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Component Information

Components	LD50/oral/rat	LC50/inhalation/8h/rat	LD50/dermal/rabbit
Hexylene glycol - 107-41-5	3700 mg/kg	310 mg/m³	9500 µL/kg
Potassium pyrophosphate - 7320-34-5	No information available	No information available	4640 mg/kg

Product Information
LC50/inhalation/4h/rat = No information available
LD50/dermal/rabbit = No information available
LD50/oral/rat = No information available

Local effects
- Skin irritation: Irritating to skin. May be absorbed through the skin in harmful amounts. May cause an allergic reaction.
- Eye irritation: Severe eye irritation. Risk of serious damage to eyes.
- Inhalation: Irritating to respiratory system.
- Ingestion: Ingestion causes irritation to the mouth, throat, and stomach. May be harmful if swallowed. Aspiration during ingestion or vomiting may cause lung damage.

duct name: UNIPREP CC-W

Chronic toxicity: Effects of long-term exposure to this product, as a whole, have not been determined. This product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Specific effects

Carcinogenic effects: No information available.

Mutagenic effects: No information available.

Reproductive toxicity: No information available.

Target organ effects: No information available.

Carcinogens

12. ECOLOGICAL INFORMATION

Environmental Hazards

Ecotoxicity effects: No data available

Aquatic toxicity: No information available.

Mobility: This product is soluble in water.

Bioaccumulative potential: There is no indication of biomagnification along the terrestrial food chain (soil-plant-animal).

Components	Freshwater Algae	Freshwater Fish Species
Hexylene glycol - 107-41-5		96 h LC50 (fathead minnow) = 10,700 mg/L 24 h LC50 (goldfish) = 5000 mg/L
Potassium pyrophosphate - 7320-34-5		96 h LC50 (rainbow trout) > 100 mg/L

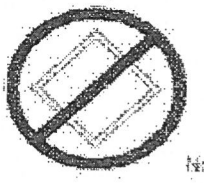
Components	Microtoxicity	Water Flea
Hexylene glycol 107-41-5	5 min EC50 Photobacterium phosphoreum = 3338 mg/L	
Potassium pyrophosphate 7320-34-5		48 h EC50 > 100 mg/L

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products: Dispose of in accordance with federal, provincial, state, and local regulations.

Contaminated packaging: Empty containers should be taken for local recycling, recovery or waste disposal.

14. TRANSPORT INFORMATION



Not classified as dangerous in the meaning of transport regulations.

DOT

Proper shipping name DOT: Non Regulated
Description (DOT): NON REGULATED

TDG (Canada)

Proper shipping name TDG: Non Regulated
Description (TDG): NON REGULATED

uct name: UNIPREP CC-W

IMO / IMDG:
Proper shipping name (IMDG): Non Regulated
Description (IMO/IMDG): NON REGULATED

IATA
Proper shipping name (IATA): Non Regulated
Description (IATA): NON REGULATED

15. REGULATORY INFORMATION

International Inventories

All of the components in this product are on or exempt from the following inventories:
U.S.A. (TSCA), Canada (DSL/NDSL).

International Inventory Legend
TSCA: Toxic Substance Control Act
DSL: Domestic Substance List
NDSL: Non-Domestic Substance List
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: EU List of Notified Chemical Substances
ENCS: Existing and New Chemical Substances
AICS: Inventory of Chemical Substances
PICCS: Phillipines Inventory of Chemicals and Chemical Substances

U.S. Regulations:

U.S. Regulations Legend:
CA PROP 65: California Proposition 65 - Carcinogens List.
TSCA 12(b): TSCA Section 12(b) - Export Notification
SARA 302: CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs and TPQs
SARA 313: CERCLA/SARA - Section 313 - Emission Reporting
CERCLA RQ: CERCLA/SARA - Hazardous Substances and Their Reportable Quantities
CWC: Chemical Weapons Convention - Annex on Chemicals
DEA LISTED: DEA (Drug Enforcement Administration) - DEA Controlled, Precursors, and / or Essential Chemicals

SARA 311	
Acute Health Hazard	YES
Chronic Health Hazard	NO
Fire Hazard	NO
Sudden Release of Pressure Hazard	NO
Reactive Hazard	NO

Canada
This product has been classified in accordance with the criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

WHMIS Controlled List
HAZARDOUS COMPONENTS

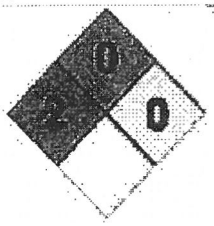
Components	CAS-No	WHMIS Call out threshold
Hexylene glycol	107-41-5	1 %

WHMIS hazard class:
- D2B: Toxic materials

16. OTHER INFORMATION

duct name: UNIPREP CC-W

16. OTHER INFORMATION



NFPA: Health: 2 Flammability: 0 Instability: 0

CAREFULLY READ THE FOLLOWING: The identification of ingredients in this document meets or exceeds the requirements set forth in 29 CFR, 40 CFR, TDG et al, at the date of publication. Ingredients present in a mixture or solution which are generically identified or not referenced in this document are not regulatorily required to be specifically identified or referenced. The information contained herein should be provided to all those who will use, handle, store, transport, or may otherwise be exposed to this product.

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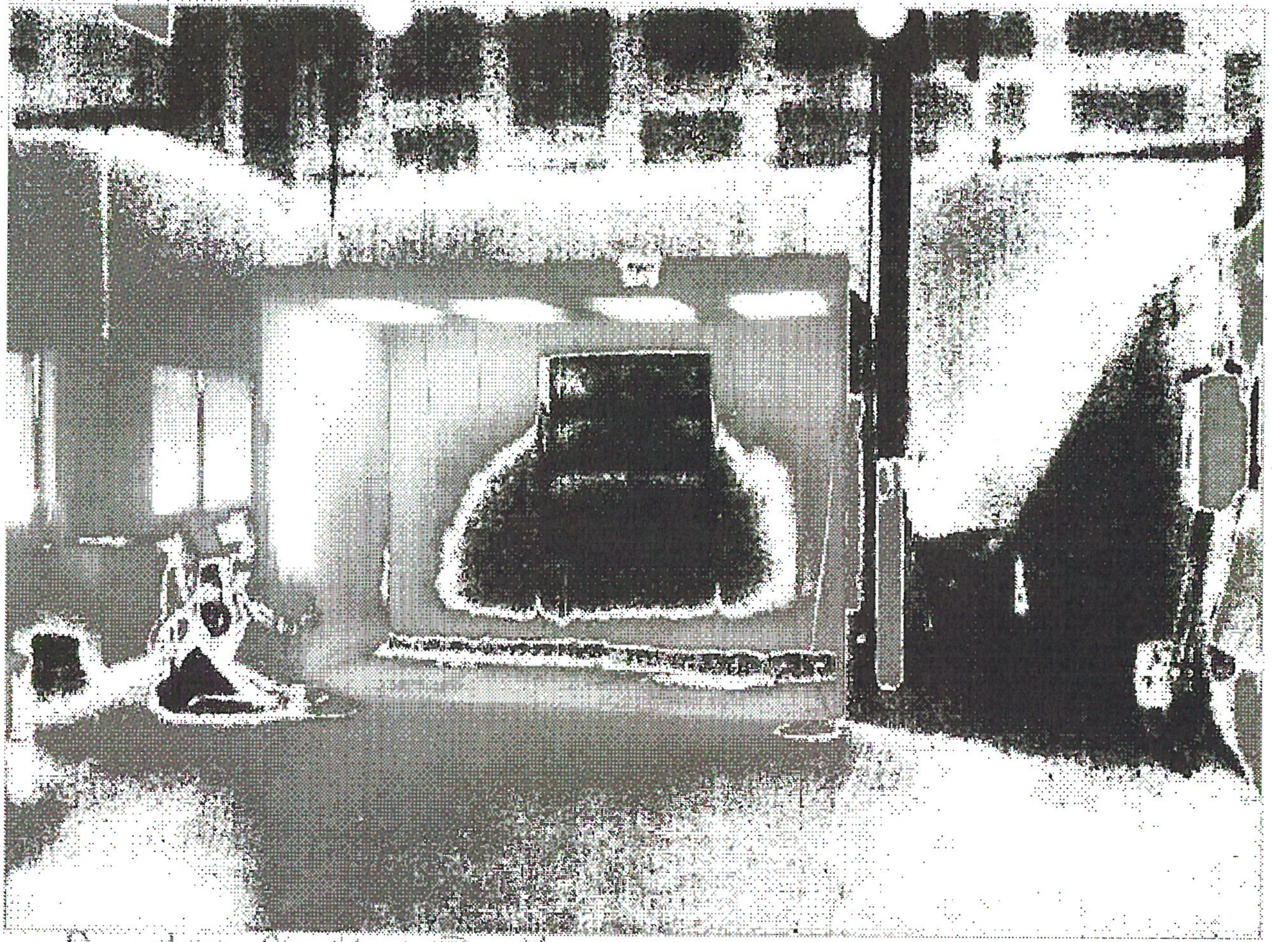
Prepared by: H E S Department

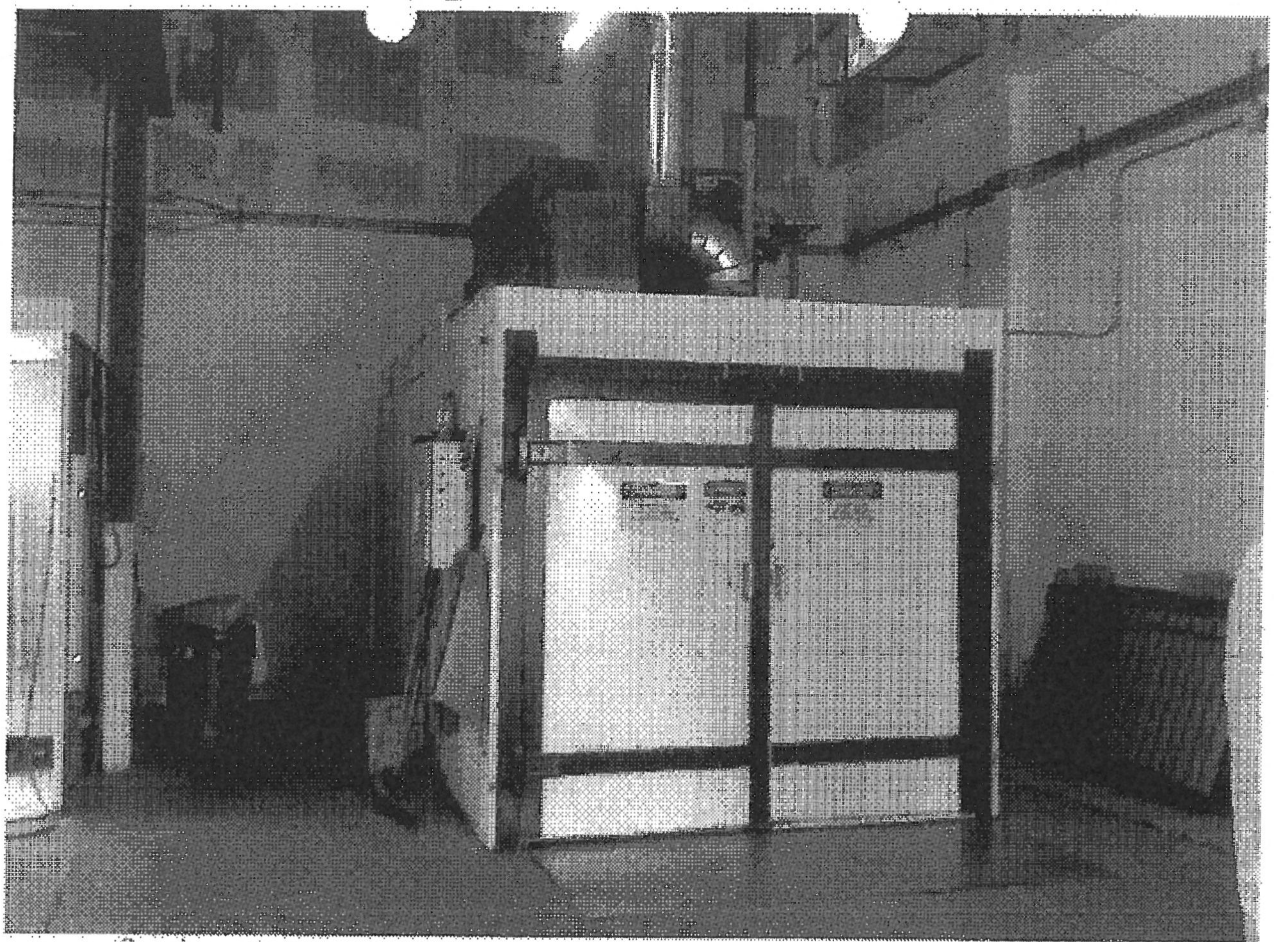
Ottawa Powder Coating Inc. – 150 Noeck July 21, 2008



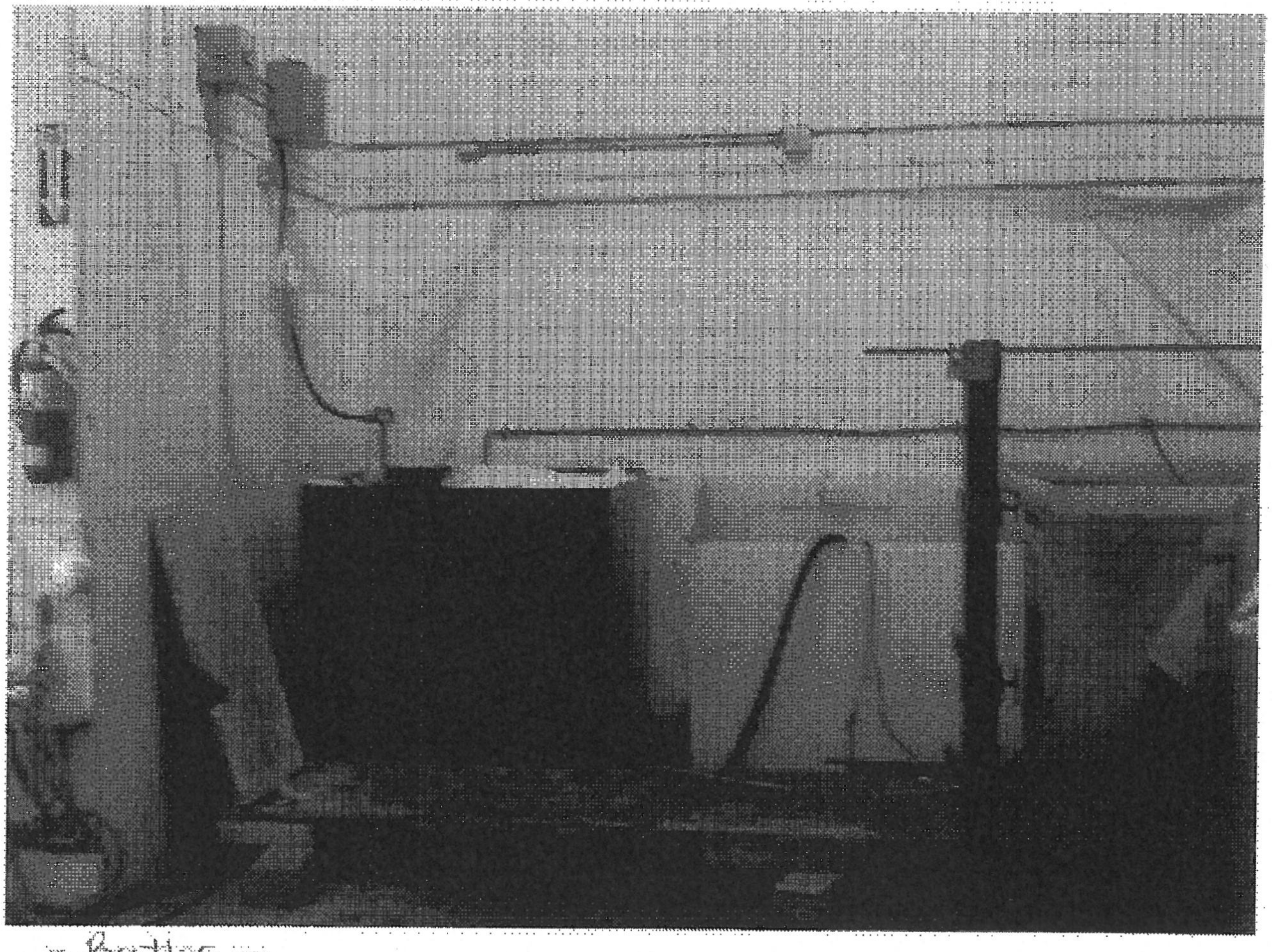
– Powder Coating Booth –

– Bake Oven –

Ottawa Powder Coating Ltd 135 IDEK-



- Bake Oven -



- Baths -

Ontario

Ministry of the Environment
Ministère de l'Environnement

Air Facility Inspection Report

Client:	Ottawa Powder Coating Ltd. Mailing Address: Unit 2 - 135 Iber Rd Stittsville, Ottawa, Ontario, Canada, K2S 1E7 Physical Address: Unit 2 - 135 Iber Rd Stittsville, Ottawa, City, Ontario, Canada, K2S 1E7 Telephone: (613)836-0554 Client #: 6581-7DKJXT, Client Type: Corporation Additional Address Info: Stittsville		
Inspection Site Address:	Ottawa Powder Coating Address: Unit 2 - 135 Iber Rd Stittsville, Ottawa, City, K2S 1E7 District Office: Ottawa GeoReference: ,		
Contact Name:	Kent Shroeder	**Title:**	General Manager
Contact Telephone:	(613)836-0554 **ext**	**Contact Fax:**	
Last Inspection Date:			
Inspection Start Date:	2008/07/21	**Inspection Finish Date:**	2008/07/21
Region:	Eastern		

1.0 INTRODUCTION

Ottawa Powder Coating Inc. (OPC) is a powder painting company located at 135 Iber Road, Unit #2, Ottawa, Ontario. The company uses electrostatic technology to paint metal parts.

A routine air inspection was conducted at the aforementioned site on July 21, 2008, to assess compliance with the Environmental Protection Act (EPA), and associated regulations, in addition to assessing compliance against all applicable Ministry of the Environment (MOE) guidelines, policies, practices and procedures that directly pertain to human health and the environment. The inspection particularly focused on Section 9 of the EPA, and Ontario Regulation 419/05.

2.0 INSPECTION OBSERVATIONS

Certificate of Approval Number(s): ○ Yes ● No

2.1 OBSERVATIONS:

Process Description:

OPC receives the metal part that needs to be painted. Depending on whether the part has had prior prepping (zinc coating, sandblasted, etc.) it is either put into dip tanks for part degreasing and cleaning or is ready to be painted. Any of the parts that have already been prepped are not subject to the dip tanks. The first dip tank contains the product called Uniprep CC-W (kept at a temperature of 120 degrees Fahrenheit); there is a second tank of water used to rinse a part prior to the final dip tank which contains the product Uniprep PP (kept at a temperature of 110 degrees Fahrenheit). The part is then moved to the paint booth area where it is painted (powder coat booth) and then directed to the bake oven for curing the paint. Depending on the part size and width it will stay in the oven for approximately 30-40mins. The part is then cooled, inspected, packaged and shipped to market.

OPC also conducts glass and plastic blasting in enclosed machines upon customer specification. All sandblasting is contracted off site.

Emissions:

The main emissions from the site originate from the bake oven. The paint booth is a powder coat paint booth and no emissions are actively vented to the natural environment as with a conventional paint booth. The typical contaminates from this type of equipment operation varies, however; emissions may include, but are not limited to the following:

- NOx
- SO_2
- CO
- particulate matter
- trace metals

The aforementioned emissions are simply typical contaminants from the combustion of fossil fuel. The emissions from the bake oven and the entire site are best determined by a qualified environmental consultant/engineer.

One natural gas heater is located in the warehouse. The fugitive heat from the bake oven is a main source of heat in the winter for OPC.

No complaints with respect to noise and/or odour have been made to the Ministry of the Environment to date.

Assessment of Section 9 of the Environmental Protection Act:

While the painting process itself does not release volatile organic compounds into the natural environment, the curing ovens do emit contaminates into the natural environment. OPC does not have a certificate of approval (CofA) for air for the bake oven. Section 9 of the EPA states "No person shall, except under and in accordance with a certificate of approval issued by the Director,
(a) construct, alter, extend or replace any plant, structure, equipment, apparatus, mechanism or thing that may discharge or from which may be discharged a contaminant into any part of the natural environment other than water".
Please refer to Section 5.0 of this inspection report for required actions relating to this violation.

2.2 CHANGES:

Not applicable at this time as this is the first inspection conducted at this site.

3.0 REVIEW OF PREVIOUS NON-COMPLIANCE ISSUES

No previous issues of non-compliance as this is the first inspection conducted at this site.

4.0 SUMMARY OF INSPECTION FINDINGS (HEALTH/ENVIRONMENTAL IMPACT)

Was there any indication of a known or anticipated human health impact during the inspection and/or review of relevant material, related to this Ministry's mandate ?

No

Specifics:

Was there any indication of a known or anticipated environmental impact during the inspection and/or review

of relevant material ?
No

Specifics:

Was there any indication of a known or suspected violation of a legal requirement during the inspection and/or review of relevant material which could cause a human health impact or environmental impairment ?
Yes

Specifics: As stated in section 2.2 of this inspection report, Ottawa Powder Coating Ltd. has one bake oven for which no approval with the Ministry of the Environment exists. This is a violation of section 9(1)(a) of the Environmental Protection Act which states "No person shall, except under and in accordance with a certificate of approval issued by the Director,
(a) construct, alter, extend or replace any plant, structure, equipment, apparatus, mechanism or thing that may discharge or from which may be discharged a contaminant into any part of the natural environment other than water".

Was there any indication of a potential for environmental impairment during the inspection and/or the review of relevant material ?
No

Specifics:

Was there any indication of minor administrative non-compliance?
No

Specifics:

5.0 ACTION(S) REQUIRED

By no later than **December 1, 2008**, Ottawa Powder Coating Ltd. shall submit a complete application for a certificate of approval (air) to the Environmental Assessment and Approvals Branch (EAAB), 2 St. Clair Avenue West, Floor 12A, Toronto, Ontario, M4V 1L5 , with a copy to the Ottawa District Office, 2430 Don Reid Drive, Ottawa, Ontario, K1H 1E1. The application shall include all supporting documentation listed within the 'Guide to Applying for Approval (Air & Noise)' - Pibs 4174e located on the ministry website at http://www.ene.gov.on.ca/envision/gp/4174e.pdf

6.0 OTHER INSPECTION FINDINGS

No other inspection findings to date.

7.0 INCIDENT REPORT

8820-7GRQUB

8.0 ATTACHMENTS

PREPARED BY:
Environmental Officer:

Name:	**Tara MacDonald**
District Office:	**Ottawa District Office**
Date:	**2008/07/21**
Signature	

REVIEWED BY:
District Supervisor:

Name:	**Steve Burns**
District Office:	**Ottawa District Office**
Date:	**2008/07/30**

Signature:

File Storage Number: SI OC GO IB 101

Note:
"This inspection report does not in any way suggest that there is or has been compliance with applicable legislation and regulations as they may apply to this facility. It is, and remains, the responsibility of the owner and/or the operating authority to ensure compliance with all applicable legislative and regulatory requirements"

Ontario

Ministry of the Environment
Ministère de l'Environnement

Subject Waste Generator Inspection Report

Client:	Ottawa Powder Coating Ltd. Mailing Address: Unit 2 - 135 Iber Rd Stittsville, Ottawa, Ontario, Canada, K2S 1E7 Physical Address: Unit 2 - 135 Iber Rd Stittsville, Ottawa, City, Ontario, Canada, K2S 1E7 Telephone: (613)836-0554 Client #: 6581-7DKJXT, Client Type: Corporation, NAICS: 332812 Additional Address Info: Stittsville		
Inspection Site Address:	Ottawa Powder Coating Address: Unit 2 - 135 Iber Rd Stittsville, Ottawa, City, K2S 1E7 District Office: Ottawa GeoReference: ,		
Contact Name:	Kent Schroeder	**Title:**	General Manager
Contact Telephone:	(613)836-0554 **ext**	**Contact Fax:**	
Last Inspection Date:			
Inspection Start Date:	2008/07/21	**Inspection Finish Date:**	2008/07/21
Region:	Eastern		

1.0 INTRODUCTION

Ottawa Powder Coating (OPC) is a powder painting company located at 135 Iber Road, Unit #2, Ottawa, Ontario. The company uses electrostatic technology to paint metal parts.

A routine subject waste generator inspection was conducted at the aforementioned site on July 21, 2008, to assess compliance with the Environmental Protection Act (EPA), and associated regulations, in addition to assessing compliance against all applicable Ministry of the Environment (MOE) guidelines, policies, practices and procedures that directly pertain to human health and the environment. This inspection particularly focused on Ontario Regulation 347.

2.0 INSPECTION OBSERVATIONS

Generator Registration Report No(s)

ONnot registered

Date of last registration

2.1 REGISTERED WASTES

Has the generator, properly registered?

- ☐ Yes. The generator has properly registered.
- ☐ No. The generator is exempt from generator registration.
- ☒ No. The generator has not registered and is not exempt.
- ☐ No. The generator has incorrectly classified the subject waste.
- ☐ No. The generator is currently registered, but not for all applicable subject wastes.
- ☐ No. The generator has incorrectly registered by not completing other required information on HWIN, or by mail-in registration.

☐ No. The generator has not properly registered all land disposal restriction (LDR) wastes.

The waste from the dip tanks is considered liquid industrial waste and therefore the generator, OPC, must register the waste with the MOE's hazardous waste information network (hwin). While the company may generate waste from the dip tanks every few years, the company must still register as per section 18(1) of O.Reg 347.

2.2 DESCRIPTION OF PROCESS GENERATING WASTE MATERIALS

Waste is generated in two forms at OPC. The powder coating booth is self-cleaning and produces a powder waste. OPC bakes the waste powder to eliminate any dust issues and disposes of the waste via regular solid non-hazardous waste pick-up. The other form of waste is in the form of waste product from the dip tanks. OPC has been operating since 2004 and has emptied one dip tank one time as there was a leak in the plastic vat the product was contained within. The vat was exchanged for a steel vat. OPC dumped the contents of the vat into the sanitary sewer. Mr. Schroeder stated at the time of the inspection that the product distributor had indicated this was an acceptable method for disposal. **Please refer to section 2.7 of this inspection report which goes into more detail on the acceptability of this practice.**

2.3 MANIFESTING

Has the generator, properly released and manifested all subject waste shipped off site for disposal or reclamation?

- ☒ Not applicable
- ☐ Yes. The generator has properly released and manifested all subject waste shipped off site for disposal and/or reclamation.
- ☐ No. The generator has transported subject waste itself, without a proper Certificate of Approval for the waste type(s).
- ☐ No. The generator has released subject waste to a carrier without a proper Certificate of Approval for the waste type(s).
- ☐ No. The generator has not completed, or properly completed manifest(s).
- ☐ No. The generator has not properly notified the Ministry of the waste shipped.
- ☐ No. The generator has used paper manifests and has not retained the green copies for two years.

2.4 LAND DISPOSAL RESTRICTION (LDR)

Has the generator complied with the land disposal restriction requirements of Reg. 347?

- ☒ Not applicable
- ☐ Yes. The generator is in compliance with the applicable land disposal restriction requirements of Reg. 347.
- ☐ Yes. The generator is a small quantity generator.
- ☐ No. The generator is diluting wastes.
- ☐ No. The generator has shipped fully treated characteristic waste without providing a simple statement to the receiver.
- ☐ No. The generator has not notified the receiver of land disposal restriction waste shipments on or before the first shipment of the waste stream.
- ☐ No. The generator is mixing, blending or bulking waste not for the purposes of treating waste to land disposal restriction standards and does not have a Certificate of Approval that allows mixing, blending or bulking.

Is treatment required to meet land disposal restriction standards?

○ Yes ● No

2.5 ON-SITE STORAGE

Has the generator been storing all subject waste in accordance with Reg. 347 and in a secure manner as required by the Environmental Protection Act?

- ☒ Not applicable
- ☐ Yes. All subject wastes are stored in accordance with Reg. 347 and in a secure manner.
- ☐ No. The generator has not provided a notice to the Regional Director for subject waste stored for greater than 3 months.
- ☐ No. Wastes are stored in such a manner that there is a potential for fire, or explosions.
- ☐ No. Wastes are stored in such a manner that there is a potential for a spill that could adversely impact the natural environment.
- ☐ No. Wastes are not secured at the site and have been released to the natural environment.
- ☐ No. Wastes have been spilled from this site and have had, or are having an adverse impact on the natural environment.
- ☐ No. The generator has stored subject waste for a period greater than 24 months without applying for or not in accordance with a Certificate of Approval.

No on-site storage.

2.6 OTHER PERTINENT CERTIFICATES OF APPROVAL

No other waste management activities occur on-site which would require a certificate of approval.

Does on-site disposal of subject waste(s) occur at this site?

○ Yes ● No

2.7 DISCHARGE OF WASTES TO MUNICIPAL SEWER(S)

Does the generator discharge subject waste to municipal sewers?

- ☐ No. Subject waste is not discharged to the municipal sewers.
- ☐ Yes. Subject waste is discharged to the municipal sewers, but the municipality is aware of this practise and the generator is properly registered for all hazardous waste.
- ☒ Yes. Subject waste is discharged to municipal sewers, but the municipality is not aware of this practise.
- ☐ Yes. Hazardous waste is discharged to municipal sewers, but is not registered.

While in the four years OPC has been operational the company has discharged the dip tank contents to the sanitary sewer only once, the municipality was not notified. This is a violation of the sewer use bylaw of the City of Ottawa. A copy of the by-law can be viewed at http://www.ottawa.ca/residents/bylaw/a_z/sewer_514_en.html.

3.0 REVIEW OF PREVIOUS NON-COMPLIANCE ISSUES

No previous issues of non-compliance at this is the first inspection at this site.

4.0 SUMMARY OF INSPECTION FINDINGS (HEALTH/ENVIRONMENTAL IMPACT)

Was there any indication of a known or anticipated human health impact during the inspection and/or review of relevant material, related to this Ministry's mandate ?

No

Specifics:

Was there any indication of a known or anticipated environmental impact during the inspection and/or review of relevant material ?

No

Specifics:

Was there any indication of a known or suspected violation of a legal requirement during the inspection and/or review of relevant material which could cause a human health impact or environmental impairment ?

No

Specifics:

Was there any indication of a potential for environmental impairment during the inspection and/or the review of relevant material ?

No

Specifics:

Was there any indication of minor administrative non-compliance?

Yes

Specifics: Ottawa Powder Coating Ltd. produces liquid industrial waste yet has not registered as a generator with the Director as per Section 18 of Ontario Regulation 347, Section 18(1).

18. (1) Every generator who operates a waste generation facility that is involved in the production, collection, handling or storage of subject waste shall,
(a) before transferring any subject waste from that waste generation facility, submit an initial Generator Registration Report to the Director in respect of the facility; and
(b) on or before February 15 in each year, submit an annual Generator Registration Report to the Director in respect of each waste generation facility operated by the generator. O. Reg. 501/01, s. 2 (1).

Definition of Subject Waste as per O.Reg 347 is as follows:
"subject waste" means,
(a) liquid industrial waste, and
Note: On December 31, 2009, clause (a) is revoked and the following substituted:
(a) liquid industrial waste,
See: O. Reg. 461/05, ss. 1 (22), 29 (5).
(b) hazardous waste,
Note: On December 31, 2009, clause (b) is revoked and the following substituted:
(b) hazardous waste, and
(b.1) waste that was characteristic waste but that has been treated so that it is no longer characteristic waste, if the waste may not be disposed of by land disposal under subsection 79 (1),
See: O. Reg. 461/05, ss. 1 (22), 29 (5).
but does not include waste described in subsection (3)"

5.0 ACTION(S) REQUIRED

By no later than **November 3, 2008**, Ottawa Powder Coating Ltd. shall register as a generator of liquid industrial waste in accordance with the Registration Guidance Manual for Generators of Liquid Industrial and Hazardous Waste (2001) - publication # 0195e. The aforementioned manual is available on the ministry's website athttp://www.ene.gov.on.ca/en/publications/forms/index.php#hazardous

6.0 OTHER INSPECTION FINDINGS

Please note any spill to the natural environment, providing it is not exempt from reporting as per Ontario Regulation 675/98, shall be reported to the Ministry of the Environment Spills Action Centre at 1-800-268-6060.

The waste paint powder is currently disposed of via the solid non-hazardous waste stream. This waste has not been tested to ensure it meets the qualifications of solid non-hazardous waste. While it is the responsibility of the generator to determine the characteristic of the waste, a Toxicity Character Leaching Procedure (TCLP) test should be conducted to determine if this waste is indeed considered solid non-hazardous waste.

7.0 INCIDENT REPORT

Applicable
4276-7GRQAV

8.0 ATTACHMENTS

PREPARED BY:
Environmental Officer:

Name:	Tara MacDonald
District Office:	Ottawa District Office
Date:	2008/07/21
Signature	

REVIEWED BY:
District Supervisor:

Name:	Steve Burns
District Office:	Ottawa District Office
Date:	2008/07/30
Signature:	
File Storage Number:	SI OC WC IB 700

Note:
"This inspection report does not in any way suggest that there is or has been compliance with applicable legislation and regulations as they may apply to this facility. It is, and remains, the responsibility of the owner and/or the operating authority to ensure compliance with all applicable legislative and regulatory requirements"

Ontario

Ministry of the Environment
Ministère de l'Environnement

INCIDENT REPORT

Reference Number:	4261-97KRNK	**File Storage Number:**	SI OT GO IB 700
Module:	Incident Reporting	**Module Type:**	Legislation Non-Compliance
Cross Reference:	(doc link)	**Task Link:**	4423-97KRPT
Originating Document:		**Created by:**	Emily Diamond
Incident Report Reference Number:		4261-97KRNK	
Date Created:	2013/05/10	**Date Completed:**	
Bring Forward Date:		**Bring Forward Reason:**	
Status:	Recommended		
Program	Waste - Hazardous & Liquid industrial	**Activity:**	General (No related specific activity)

Is this an **air emission** (measured or modelled) or **wastewater** (sewage) **discharge exceedance** that will become part of the Environmental Compliance Report?

(legislation, certificate of approval, order, or guideline)

○ Yes ● No ○ To be determined ***Click here for Guidance***

Caller or PO Information

Reported By:			
First Name Emily	**Last Name** Diamond		
Contact Mailing Address			
Municipality:			
Ottawa			

Reported By:	

MOE Information

Date & Time Reported to MOE:	2013/05/10 16:09		
Office Receiving Incident Report:	Eastern Region		
Incident Info Received By:	Emily Diamond		
MOE Response:	No Field Response	**Site Region:**	Eastern
Date & Time of MOE Arrival at Scene:			
Master Incident Report Number:			
SAC Action Class:			
Non-Standard Procedure:	No		
ERP Call-out Initiated:			

Client(s)

Client Details
Ottawa Power Coating Ltd. <UNOFFICIAL>, Business/Facility Name: Mailing Address: , , , Ontario, Canada Physical Address: Lot: , Part: , , , Ontario, Canada Telephone: , FAX: Client Type: , NAICS:

Site(s)

Site Details
Ottawa Powder Coating Ltd. <UNOFFICIAL> Address: Lot: , Part: , 135 Iber Road Unit 2, Smiths Falls, Separated Town, County of Lanark District Office: Ottawa

Incident Information

Incident Summary:	HWIN Expired Generator *cannot be longer than 60 characters*
Incident Description:	ON9986485 - Generator number for Ottawa Powder Coating Ltd. August 8 - spoke with Kent, company does not use those machines anymore and will submit for closure, sent information email - kent@ottawapowdercoating.com August 14 - sent follow up email Company has been contacted. File closed.

Links & Comments:	
Attachments Names:	

Date & Time of Incident	**Incident Date Confirmation?** Actual 2013/05/10		
Source Type:		**Sector Type:**	
Nearest Watercourse:		**Watershed Category Code:**	
Environmental Impact:			
Nature of Impact:			
Incident Event:		**Incident Reason:**	
Damaged Party:	No		

Contaminants Table

Contaminant Name	Code	UN#	Limit	Quantity	[units]	[freq]

Controller of Material:		Owner of Material:	
Estimated Clean Up Cost:		Who Cleaned Up:	
% Clean Up:	%	MOE/Other Agencies Involved:	

Voluntary / Mandatory Abatement

Is there Voluntary Abatement Activity?	○ Yes	● No	○ To be determined

Voluntary / Mandatory Compliance Items

Type	Parent RefNo	Work Summary (may be truncated)	Date	AttainList

Offence(s)

Suspected Violation(s)/Offence(s):	
Act - Regulation - Section, Description {General Offence}	

Provincial Officer:

Name: Emily Diamond
Badge No:

Work Unit:
District/Area Office: Eastern Region
Date: 2014/01/03

Signature:

District/Area Supervisor:

Name:

Work Unit:
District/Area Office:
Date:

Signature:

Ontario

Ministry of the Environment
Ministère de l'Environnement

INCIDENT REPORT

Reference Number:	4276-7GRQAV	**File Storage Number:**	SI OC GO IB 700
Module:	Incident Reporting	**Module Type:**	Legislation Non-Compliance
Cross Reference:	(doc link)	**Task Link:**	5876-7GRQHG
Originating Document:		**Created by:**	Tara MacDonald
Incident Report Reference Number:		4276-7GRQAV	
Date Created:	2008/07/21	**Date Completed:**	2008/11/13
Bring Forward Date:		**Bring Forward Reason:**	
Status:	Closed		
Program	Waste - Hazardous & Liquid industrial	**Activity:**	Inspections - Reg. 347 Generators

Is this an **air emission** (measured or modelled) or **wastewater** (sewage) **discharge exceedance** that will become part of the Environmental Compliance Report?

(legislation, certificate of approval, order, or guideline)

○ Yes ● No ○ To be determined ***Click here for Guidance***

Caller or PO Information

Reported By:			
First Name Tara	**Last Name** MacDonald		
Contact Mailing Address			
Municipality:			
Ottawa			

Reported By:	

MOE Information

Date & Time Reported to MOE:	2008/07/21 14:58		
Office Receiving Incident Report:	Ottawa District Office		
Incident Info Received By:	Tara MacDonald		
MOE Response:	No Field Response	**Site Region:**	Eastern
Date & Time of MOE Arrival at Scene:			
Master Incident Report Number:			
SAC Action Class:			
Non-Standard Procedure:	No		
ERP Call-out Initiated:			

Client(s)

Client Details
Ottawa Powder Coating Ltd. Mailing Address: Unit 2 - 135 Iber Rd Stittsville, Ottawa, Ontario, Canada, K2S 1E7 Physical Address: Unit 2 - 135 Iber Rd Stittsville, Ottawa, City, Ontario, Canada, K2S 1E7 Telephone: (613)836-0554 Client #: 6581-7DKJXT, Client Type: Corporation, NAICS: 332812 Additional Address Info: Stittsville

Site(s)

Site Details
Ottawa Powder Coating Address: Unit 2 - 135 Iber Rd Stittsville, Ottawa, City, K2S 1E7 District Office: Ottawa Site #: 8751-7DKJZJ

Incident Information

Incident Summary:	violation of O.Reg 347, section 18(1) *cannot be longer than 60 characters*
Incident Description:	Inspection conducted at site indicated violation with O.Reg 347 section 18(1) for a failure to register as a generator of liquid industrial waste. The generator disposes of the waste periodically to the sanitary sewer. In four years the tanks have only been changed 1x and this was b/c of a leak in the vat the liquid was contained within. EO informed the City of Ottawa sewer-use by-law. Voluntary abatement initiated. November 7, 2008 - EO checked MOE internal database to determine if company has registered with hwin. Verification that company registered on October 21, 2008. All VA items complied with by the compliance dates. No further MOE action required as it relates to this incident. File closed.

Attachments, Links & Comments:	

Date & Time of Incident	**Incident Date Confirmation?** Actual 2008/07/21 11:00		
Source Type:		**Sector Type:**	
Nearest Watercourse:		**Watershed Category Code:**	
Environmental Impact:	Not Anticipated		
Nature of Impact:			
Incident Cause:		**Incident Reason:**	
Damaged Party:	No		

Contaminants Table

Contaminant Name	Code	UN#	Limit	Quantity	[units]	[freq]

Controller of Material:		Owner of Material:	
Estimated Clean Up Cost:		Who Cleaned Up:	
% Clean Up:	%	Agencies Involved:	

Voluntary / Mandatory Abatement

Is there Voluntary Abatement Activity?	● Yes	○ No	○ To be determined

Voluntary / Mandatory Compliance Items

Type	Parent RefNo	Work Summary (may be truncated)	Date	AttainList
VA	4276-7GRQAV	By November 3, 2008, submit gener...	2008/11/03	2008/10/21

Offence(s)

Suspected Violation(s)/Offence(s):	
Act - Regulation - Section, Description {General Offence}	

Provincial Officer:

Name: Tara MacDonald
Badge No: 1244

Work Unit:
District/Area Office: Ottawa District Office
Date: 2008/11/07

Signature: T. MacDonald

Area Supervisor:

Name: Paul Kehoe

Work Unit:
District/Area Office: Ottawa District Office
Date: 2008/11/13

Signature: Paul Kehoe.

Ontario

Ministry of the Environment
Ministère de l'Environnement

INCIDENT REPORT

Reference Number:	8820-7GRQUB	**File Storage Number:**	SI OC GO IB 211
Module:	Incident Reporting	**Module Type:**	Legislation Non-Compliance
Cross Reference:	(doc link)	**Task Link:**	5732-7GRQXX
Originating Document:		**Created by:**	Tara MacDonald
Incident Report Reference Number:		8820-7GRQUB	
Date Created:	2008/07/21	**Date Completed:**	2008/12/09
Bring Forward Date:		**Bring Forward Reason:**	
Status:	Closed		
Program	Air	**Activity:**	Inspections - Air Facilities

Is this an **air emission** (measured or modelled) or **wastewater** (sewage) **discharge exceedance** that will become part of the Environmental Compliance Report?

(legislation, certificate of approval, order, or guideline)

○ Yes ● No ○ To be determined *Click here for Guidance*

Caller or PO Information

Reported By:		
First Name Tara	**Last Name** MacDonald	

Contact Mailing Address

Municipality:			
Ottawa			

Reported By:	

MOE Information

Date & Time Reported to MOE:	2008/07/21 15:27		
Office Receiving Incident Report:	Ottawa District Office		
Incident Info Received By:	Tara MacDonald		
MOE Response:	No Field Response	**Site Region:**	Eastern
Date & Time of MOE Arrival at Scene:			
Master Incident Report Number:			
SAC Action Class:			
Non-Standard Procedure:	No		
ERP Call-out Initiated:			

Client(s)

Client Details
Ottawa Powder Coating Ltd. Mailing Address: Unit 2 - 135 Iber Rd Stittsville, Ottawa, Ontario, Canada, K2S 1E7 Physical Address: Unit 2 - 135 Iber Rd Stittsville, Ottawa, City, Ontario, Canada, K2S 1E7 Telephone: (613)836-0554 Client #: 6581-7DKJXT, Client Type: Corporation, NAICS: 332812 Additional Address Info: Stittsville

Site(s)

Site Details
Ottawa Powder Coating Address: Unit 2 - 135 Iber Rd Stittsville, Ottawa, City, K2S 1E7 District Office: Ottawa Site #: 8751-7DKJZJ

Incident Information

Incident Summary:	Violation of section 9 of EPA *cannot be longer than 60 characters*
Incident Description:	No CofA for bake oven emitting contaminates to the natural environment. This is a violation of Section 9 of the EPA. VA initiated. November 18, 2008 - MOE Ottawa District received a letter from company president stating that they have stopped dumping anything down municipal sewers and have registered on hwin under generator #ON9986485. In addition the letter stated the company has hired Aqua Terre Solutions Inc. to prepare CofA application for air which will be complete December 1, 2008. December 1, 2008 - EO received copy of CofA application for air. All required items within VA have been met by client. Document and File No further MOE Ottawa District action is required at this time, file closed.

Attachments, Links & Comments:	

Date & Time of Incident	**Incident Date Confirmation?** Actual 2008/07/21 11:00		
Source Type:		**Sector Type:**	
Nearest Watercourse:		**Watershed Category Code:**	
Environmental Impact:	Not Anticipated		
Nature of Impact:			
Incident Cause:		**Incident Reason:**	
Damaged Party:	No		

Contaminants Table

Contaminant Name	Code	UN#	Limit	Quantity	[units]	[freq]

Controller of Material:		Owner of Material:	
Estimated Clean Up Cost:		Who Cleaned Up:	
% Clean Up:	%	Agencies Involved:	

Voluntary / Mandatory Abatement

Is there Voluntary Abatement Activity?	● Yes	○ No	○ To be determined

Voluntary / Mandatory Compliance Items

Type	Parent RefNo	Work Summary (may be truncated)	Date	AttainList
VA	8820-7GRQUB	Apply for CofA (air) by November ...	2008/11/03	2008/11/18

Offence(s)

Suspected Violation(s)/Offence(s):	
Act - Regulation - Section, Description {General Offence}	

Provincial Officer:

Name: Tara MacDonald
Badge No: 1244

Work Unit:
District/Area Office: Ottawa District Office
Date: 2008/12/08

Signature: T. MacDonald

Area Supervisor:

Name: Paul Kehoe

Work Unit:
District/Area Office: Ottawa District Office
Date: 2008/12/09

Signature: Paul Kehoe.

APPENDIX F

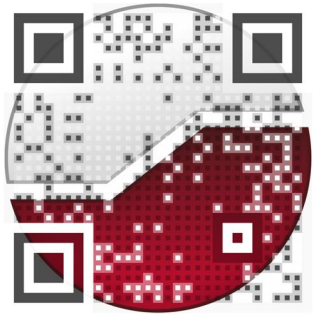
Groundwater Level Data

TABLE F1
GROUNDWATER LEVELS

Well ID	Driller Type	Screen Interval	Easting[1]	Northing	Ground Elevation (m)	Top of PVC Elevation (m)	Measured Water Level (mbTOC)[2]					Groundwater Depth (mbgs)[3]					Groundwater Elevation				
							13-Feb-18	24-Jul-18	06-Dec-18	01-Mar-19	10-Jul-19	13-Feb-18	24-Jul-18	06-Dec-18	01-Mar-19	10-Jul-19	13-Feb-18	24-Jul-18	06-Dec-18	01-Mar-19	10-Jul-19
BH17-3	Downing / Geoprobe	overburden	428925.315	5015075.823	100.203	101.036	1.539				2.640	0.706				1.807	99.50				98.40
BH17-5	Downing / Geoprobe	overburden	428727.458	5014887.121	101.713	102.662	1.434				1.650	0.485				0.701	101.23				101.01
BH17-6	Downing / Geoprobe	overburden	428731.311	5014731.308	102.358	103.336	1.960				2.020	0.982				1.042	101.38				101.32
BH17-8	Downing / Geoprobe	overburden	428994.126	5014416.994	103.162	104.059	1.403				2.240	0.506				1.343	102.66				101.82
BH18-9	Strata	bedrock	429172.093	5014235.578	106.041	107.039		4.625	3.66	4.19	4.15		3.627	2.662	3.192	3.152		102.41	103.38	102.85	102.89
BH18-10S	Strata	overburden /bedrock	429217.799	5014179.329	105.132	105.962		4.290	2.81	3.26	3.15		3.460	1.980	2.430	2.320		101.67	103.15	102.70	102.81
BH18-10D	Strata / Geoprobe (air hammer)	bedrock	429215.686	5014179.740	105.032	105.905		4.191	6.24	6.16	3.24		3.318	5.367	5.287	2.367		101.71	99.67	99.75	102.67
BH18-11	Strata / Geoprobe (air hammer)	bedrock	429123.437	5014282.638	105.942	106.804		Dry	3.55	4.42	2.49			2.688	3.558	1.628			103.25	102.38	104.31
BH18-12	Strata / Geoprobe (air hammer)	bedrock	429214.256	5014255.073	103.969	104.765		3.359	1.71	2	2.15		2.563	0.914	1.204	1.354		101.41	103.06	102.77	102.62
BH18-13	Strata / Geoprobe (air hammer)	bedrock	429158.911	5014221.053	106.399	107.236		4.872	5.53	6.37	6.010		4.035	4.693	5.533	5.173		102.36	101.71	100.87	101.23

Notes:
1) UTM Zone 18N NAD83
2) metres below top of (PVC) casing
3) Metres below ground surface

experience • knowledge • integrity



civil	civil
geotechnical	géotechnique
environmental	environnementale
field services	surveillance de chantier
materials testing	service de laboratoire des matériaux

expérience • connaissance • intégrité