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Supplemental Phase Two Environmental Site Assessment
1055 Klondike Road
Ottawa, Ontario

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Submitted to:

Brian Saumure, Maple Leaf Homes
C/O Novatech
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Supplemental Phase Two Environmental Site Assessment
1055 Klondike Road
Ottawa, Ontario

September 28, 2021
Project: 64153.85

September 28, 2021 File: 64153.85

Brian Saumure, Maple Leaf Homes
C/O Novatech
240 Michael Cowpland Drive, Suite 200
Ottawa, Ontario
K2 M 1P6

Attention: Mr. Brian Saumure

Re: Supplemental Phase Two Environmental Site Assessment
1055 Klondike, Ottawa, Ontario

Enclosed is our supplemental Phase Two Environmental Site Assessment (ESA) report for the above-noted property. The report presented herein is based on the scope of work summarized in the proposal dated June 28, 2021. The supplemental Phase Two ESA was completed in general accordance with Canadian Standards Association (CSA) Z769-00 (R2018), and O.Reg 153/04 (as amended) to investigate areas of potential environmental concern (APECs) identified in the 2021 Phase One ESA update, and to document the interpreted environmental conditions at the property at the time the investigation was completed.

We trust this information is sufficient for your current needs. If you have any questions or require further information, please contact the undersigned.

Rhian Fox, BSc.
Environmental Technologist

Su-Kim Roy, M.Eng., P.Eng
Senior Environmental Engineer

Enclosures
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EXECUTIVE SUMMARY

GEMTEC Consulting Engineers and Scientists Limited (GEMTEC) was retained by Mr. Brian Saumure of Maple Leaf Homes to carry out a supplemental Phase Two Environmental Site Assessment (ESA) for the property located at 1055 Klondike Road in Ottawa, Ontario. This supplemental Phase Two ESA was completed in general accordance with the CSA Group standard Z769-00 (R2018) and O.Reg 153/04 (as amended).

A Phase One ESA had been previously completed by GEMTEC for the subject property titled "*Phase One Environmental Site Assessment, 1055 Klondike Road, Ottawa, Ontario*", dated October 2, 2018. However, under Section 28.1(a) of Ontario Regulation 153/04, information provided in a Phase One ESA is generally only considered valid if "*the date the last work on all of the records review, interviews and site reconnaissance required for the phase one environmental site assessment that is the subject of the report was done is no later than 18 months before*." An updated Phase One ESA titled "*Phase One Environmental Site Assessment Update, 1055 Klondike Road, Ottawa, Ontario"* was completed to support the Site Plan Control Application, as the previous Phase One ESA report for the subject property is past this validity period. The updated Phase One ESA recommended a supplemental Phase Two ESA be completed to investigate soil and groundwater quality within the APECs identified on the subject property as summarized below:

APEC 1: Debris from Historical Fire

Through observations made during the site reconnaissance and an interview with the site representative, remnant burnt building material and debris was identified with the historical building footprint of a structure prior to a fire in July 2018 which destroyed the structure. The potentially associated contaminants of concern are metals and PAHs in soil and groundwater. This APEC is present towards the centre of the subject site approximately 10 meters northeast from the other historical building footprints whose structures were destroyed in a fire in June 2018.

APEC 2: Fill of Unknown Origin Identified During a Previous Geotechnical Investigation

Through a review of historical reports, fill of unknown origin was identified throughout the subject site. The potentially associated contaminants of concern are metals, inorganics, PHC F1-F4, VOCs and PAHs in soil and groundwater. This APEC is present across the subject site.

Moreover, based on the results of the Phase Two ESA investigation completed by GEMTEC titled "*Phase Two Environmental Site Assessment, 1055 Klondike, Ottawa, Ontario"* dated May 17, 2021 it is expected that contaminated soil as defined by current MECP regulations will be encountered during the proposed construction in the area of GS-N within the former building footprint. Based on the nature of the contaminants identified (Zinc) and debris identified in the former building footprint, it is recommended that soil and debris be disposed of at an approved

facility subject to a toxicity characteristic leaching procedure (TCLP) analysis and confirmatory sampling be carried out by a Qualified Person, as defined by O.Reg. 153/04.

It should be noted that this supplemental Phase Two ESA is not sufficient to support the submission of a Record of Site Condition (RSC) in accordance with Ontario Regulation (O.Reg.) 153/04, as amended.

A total of 18 soil samples, and three groundwater samples (including QA/QC samples) were collected from the subject property in order to facilitate soil and groundwater investigation.

One borehole, BH21-1, was completed as a monitoring well and was installed as part of the field investigation. Two former monitoring wells, MW19-2 and MW18-3, that were advanced during the historical Phase Two ESA field investigation were also sampled as part of the monitoring well network to confirm groundwater elevations on-site and to assess groundwater quality, however, MW18-3 had high sediment in the well and no sample could be obtained from this location. Only two groundwater samples could be collected, one each from MW21-1 and MW19-2.

Two composite Toxicity Characteristic Leaching Procedure (TCLP) samples were submitted as part of the investigation to confirm waste classification. The first TCLP sample included a composite made up of the contaminated soil identified in the former building footprint (destroyed by fire) as per recommendations made following the historical Phase Two ESA. The second TCLP sample included soil samples submitted for the Supplemental Phase Two field investigation summarized herein.

Some or all of the following contaminants of potential concern (COPCs) were considered for each of the samples collected: petroleum hydrocarbons four fractions F1-F4 (PHC F1-F4), Polycyclic Aromatic Hydrocarbons (PAHs), metals and inorganics, and Volatile Organic Compounds (VOCs). A summary of the investigation results identified the following:

- A layer of topsoil was encountered on-site followed by fill materials in some locations. Fill material was observed to be comprised of dark brown to brown silty sand with organic material and grey brown silty clay with pockets of dark brown organic material, with trace to some amounts of gravel. Cobbles were also observed to be underlying the surficial topsoil beneath the granular driveway which runs across the middle of the site;

- Based on the groundwater table elevations recorded on August 16, 2021 during the supplemental Phase Two ESA and the observed topography of the subject site, the local shallow groundwater flow trends northwest towards Shirley's Brook;

- Assessment of soil analytical results indicated that soil quality within the project limits met the applicable MECP Table 9 SCS for all parameters analyzed in most locations with the

exception of elevated zinc concentration from a shallow soil sample taken from within the footprint of a former on-site structure which was destroyed during a historical fire;

- Assessment of groundwater analytical results indicated that groundwater quality within the project limits met the applicable MECP Table 9 SCS for all parameters analyzed in most locations during most sampling events with the exception of PHC F3 in the location of MW18-5 in 2018. However, follow up confirmatory groundwater sampling in the vicinity of this location was completed at MW19-2 in 2019 and no exceedances to the MECP Table 9 SCS were observed at the time of the confirmatory sampling.

- Assessment of the TCLP analytical results indicated that soil quality in the project limits meets the applicable MECP O.Reg 558/347 Schedule 4 for all parameters analyzed and therefore may be disposed of as non-hazardous waste at any MECP licenced landfill.

Based on the results of the supplemental Phase Two ESA, no additional work is recommended at this time for the subject property.

If the on-site monitoring wells are no longer required, they should be decommissioned by a licensed well contractor, in accordance with O.Reg. 903, as amended.

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1.0 INTRODUCTION

GEMTEC Consulting Engineers and Scientists Limited (GEMTEC) was retained by Mr. Brian Saumure of Maple Leaf Homes to carry out a Supplemental Phase Two Environmental Site Assessment (ESA) for the property located at 1055 Klondike Road in Ottawa, Ontario. This Supplemental Phase Two ESA was completed in general accordance with the CSA Group standard Z769-00 (R2018) and O.Reg 153/04 (as amended).

The purpose of the supplemental Phase Two ESA was to investigate the Areas of Potential Environmental Concern (APECs) identified in the updated Phase One ESA dated June 2021, and to assess the potential for environmental impacts at the subject property. The site location is provided on Figure A.1, Appendix A.

1.1 Site Description

The subject property consists of a land parcel with an approximate area of 11 acres. The subject site is bounded to the north by 989 Marconi Avenue, to the east by 989 Marconi Avenue and 1045 Klondike Road, to the south by Klondike Road, and to the west by 812 March Road and 830 March Road. A key plan of the subject property is shown on Figure A.1, Appendix A.

The Parcel Register Abstract for PIN is 04527-0091; and legal description for the subject site is Part of Lot 11, Concession 4, being Part 3 on Plan 5R-3477, City of Ottawa; PIN 04527-0091

1.2 Property Ownership

The subject property is presently owned by the Village at the Schoolyard Inc. The contact person for the subject property at the time of this reporting is Mr. Brian Saumure.

1.3 Current and Proposed Future Uses

The historical land use is agricultural and residential (most recently vacant). Historical land use in the study area was predominantly agricultural with commercial developments concentrated to the south along March Road starting in 2009. It is understood that the proposed future use of the property will be residential and that this supplemental Phase Two ESA is required to support a site control plan application with the City of Ottawa.

1.4 Applicable Site Condition Standards

Site Condition Standards (SCS) were selected for the 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 and Climate Change (MECP), October 31, 2011), as amended. The selection of applicable SCS for comparison to analytical data was based on a review of various site characteristics which will need to be considered for the current property use and also to provide a preliminary indication of on-site soil and groundwater quality to inform the future planned redevelopment.

The following information was considered in selecting the site condition standards:

- Land Use: The site is currently undeveloped – however future development plans would result in the site land use becoming residential. Thus, residential land use category was applied for this site.
- Soil Texture: Based on visual observations made during the field program and as a conservative approach, coarse grained soils are present on-site.
- Soil Thickness and Proximity to Water Body: For the purposes of selection of the appropriate provincial standard, Section 43.1 of O. Reg.153/04 identifies specific SCS be applied if any of the following circumstances exist:

  (a) The property is a shallow soil property (i.e., at least 1/3 or more of the property area contains less than 2 metres depth of overburden); or

  (b) The property includes all or part of a water body or is adjacent to a water body or includes land that is within 30 metres of a water body.

  Based on a review of the surficial and bedrock geology maps of the area, and results obtained from the geotechnical investigation completed by GEMTEC in 2017, the site is not considered a shallow soil property. However, the property boundaries indicate that part of the property includes and/or is within 30 meters of Shirley's Brook.
- Groundwater Use: The site and surrounding properties are serviced with municipal water. Therefore, groundwater use for the subject property and vicinity is considered non-potable.
- Environmentally Sensitive Site: Environmental sensitivity is considered in the selection of appropriate provincial standards for comparison. Section 41 of O. Reg.153/04 states that a property is to be considered environmentally sensitive if any of the following are applicable:

  (1) The property is,

  (i) Within an area of natural significance;

  (ii) Includes or is adjacent to an area of natural significance or part of such an area; or

  (iii) Includes land that is within 30 metres of an area of natural significance or part of such an area;

  (2) The soil at the property has a pH value as follows:

  (i) For surface soil, less than 5 or greater than 9;

  (ii) For sub surface soil, less than 5 or greater than 11; or

  (3) A qualified person is of the opinion that, given the characteristics of the property and the certifications the qualified person would be required to make in a record of site

condition in relation to the property as specified in Schedule A, it is appropriate to apply this section to the property.

The site is not considered to be environmentally sensitive. pH values for soil samples submitted were within the acceptable range and the property is not within, adjacent or include, in part, an area of natural significance.

Based on the review of site characteristics and intended future redevelopment of the property to residential, the following provincial standards were considered to be applicable to the soil quality results obtained during the investigation:

- *MECP Table 9 RPI/ICC SCS: Generic Site Condition Standards for Use within 30 m of a Water Body in a Non-Potable Ground Water Condition, residential/parkland/institutional, industrial/commercial/community (RPI/ICC) land use, coarse textured soils (MECP, 2011).*

Based on the review of site characteristics, the following provincial standards were considered to be applicable to the groundwater quality results obtained during the investigation:

- *MECP Table 9 SCS: Generic Site Condition Standards for Use within 30 m of a Water Body in a Non-Potable Ground Water Condition, all type of property uses, groundwater (MECP, 2011).*

Considering disposal of excess soils off-site at a licensed landfill, if required, the following provincial standards were considered to be applicable to the soil leachate quality results obtained during the investigation:

- Off-Site Disposal as non-hazardous waste:
    - *MECP O.Reg. 558/347 Schedule 4, Leachate Quality Criteria, to evaluate waste classification (hazardous or non-hazardous waste) for on-site soils (MECP, 2000).*

2.0 BACKGROUND INFORMATION

2.1 Physical Setting

The subject property was first developed for agricultural use sometime before 1934. Structures are visible on the south and northwest portion the subject property in the 1934 aerial photograph and the structures on the northeast portion were removed sometime before 1976. Additional development has occurred to the east between 1976 and 1991. Residential subdivision development is visible in the study area between 2005 and 2008. Construction for the commercial development west of the subject property occurred between 2008 and 2011.

The subject property is at an elevation of approximately 70 metres above sea level. Surrounding topography generally slopes northwest. Groundwater flow often reflects topographic features and typically flows toward nearby lakes, rivers and wetland areas. Based on the topography of the area, it is anticipated that the local shallow groundwater flow is north / northwest, towards Shirley's Brook.

2.2 Past Investigations

Five historical environmental reports were available for review. A summary of pertinent information obtained from the historical reports is provided in the following sections.

2.2.1 Preliminary Geotechnical Investigation by GEMTEC (dated April 2017)

GEMTEC Consulting Engineers and Scientists Limited (GEMTEC), formerly Houle Chevrier Engineering Ltd., conducted a preliminary geotechnical investigation and slope stability assessment at this site. The report titled: "*Preliminary Geotechnical Investigation, Proposed Residential Subdivision, 1055 Klondike Road, Ottawa, Ontari*o", dated April 13, 2017 was reviewed for evidence of potentially contaminating activities.

At the time four boreholes numbered 17-1 to 17-4 were advanced on-site using a track mounted drill rig. The general subsurface conditions were described as topsoil, over sand and silty clay. Fill material was not identified during the preliminary geotechnical investigation.

2.2.2 Phase One Environmental Site Assessment, 1055 Klondike Road, Ottawa, Ontario (dated October 2018)

A Phase One ESA was completed by GEMTEC for the subject property titled "*Phase One Environmental Site Assessment, 1055 Klondike Road, Ottawa, Ontario*", dated October 2, 2018. The following APECs were identified in the Phase One ESA:

- **APEC 1- Former Aboveground Fuel Storage Tank:** Evidence from one aboveground fuel storage tank (AST) was observed during the site reconnaissance. The vent and fill pipes were observed along the eastern wall of the existing structure. The AST was identified in the basement with an approximate capacity of 900 litres and installed in 2003. The tank was likely used for heating oil storage. Due to the nature of the products stored, the contaminants of concern for soil and groundwater are petroleum hydrocarbons (PHCs), benzene, toluene, ethylbenzene and xylene (BTEX). *PCA #28. Gasoline and Associated Products Storage in Fixed Tanks.*

- **APEC 2- Potential Impacts from Offsite Dry cleaning facility:** An offsite dry cleaning facility was identified during the site reconnaissance in the study area. Based on the proximity to the subject site, potential environmental concern to the subject site relating to the historical dry cleaning activities may be present along the northwest property boundary of the subject property. Due to the nature of the products stored, the contaminants of concern for soil and groundwater are volatile organic compounds (VOCs). *PCA #37. Operation of Dry Cleaning Equipment (where chemicals are used).*

- **APEC 3- Debris and fill of unknown origin during the fire:** On June 10, 2018, a fire occurred on the subject site following the initial Phase One ESA site visit. The fire significantly damaged two of the three historical structures on the subject site, and they

were subsequently demolished. Based on a visual site inspection, the area within the historical building footprint was filled in. It was GEMTEC's understanding that the AST (identified as APEC 1 in the report) was removed prior to fire. Due to the fill material and debris within the building footprint, and to confirm no fuel was leaked prior to or during the fire, the contaminants of concern for soil and groundwater were noted as PHCs, and BTEX. Additional contaminants of concern for soil were metals and Polycyclic Aromatic Hydrocarbons (PAHs). *PCA #30. Importation of Fill Material of Unknown Quality*

A Phase Two ESA was recommended for the subject property to investigate the identified APECs.

2.2.3 Geotechnical Investigation by GEMTEC (dated April 2018)

A geotechnical investigation was completed by GEMTEC in 2018 for the subject property. The report entitled "*Geotechnical Investigation, Proposed Residential Subdivision, 1055 Klondike Road, Ottawa, Ontario*" and dated April 4, 2018 was reviewed for evidence of potentially contaminating activities.

Five boreholes were advanced on the subject property, with three standpipe piezometers. Fill material was encountered on the granular driveway at two borehole locations. The fill material was observed to extend from a depth of approximately 0.9 to 3.3 metres below ground surface. It consisted of a dark brown to brown silty sand with organic material and grey brown silty clay with pockets of dark brown organic material. One borehole was terminated at 7.7 metres below ground surface, due to auger refusal on possible bedrock. The groundwater levels measured from the standpipe piezometers ranged from 2.0 to 6.3 metres below ground surface.

2.2.4 Phase Two Environmental Site Assessment, 1055 Klondike Road, Ottawa, Ontario (dated May 2019)

A Phase Two ESA was completed following recommendations provided in the 2018 Phase One ESA. The report entitled "*Phase Two Environmental Site Assessment, 1055 Klondike Road, Ottawa, Ontario*", dated May 17, 2019 was reviewed for evidence of potentially contaminating activities.

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- Aboveground Fuel Storage Tank:** Groundwater results indicated petroleum hydrocarbon fraction F3 (PHC F3) contaminated groundwater at monitoring well locations BH18-5 and BH18-3 in May 2018. To confirm the exceedance and assess the groundwater conditions following the fire, additional groundwater sampling following monitoring well development was recommended and carried out in August 2018. Monitoring well BH18-3 was re-sampled for PHCs and BTEX in August 2018. The results were non-detect for all parameters analyzed. Due to low water levels, the monitoring well at BH18-5 could not be re-sampled. To address this, an additional monitoring well BH19-

2 was advanced in March 2019 between the former aboveground fuel storage tank and BH18-5. The groundwater sample from BH19-1 was submitted for PHCs and BTEX, and no exceedances were identified. No PHCs and BTEX impacted soil was identified during the investigation.

- **APEC 2- Potential Impacts from Offsite Dry cleaning facility:** Soil and groundwater results from BH18-5 did not identify any VOCs contaminated soil or groundwater.

- **APEC 3- Debris and fill of unknown origin during the fire:** Soil results indicated zinc contaminated soil at GS-N, a grab sample collected from within the footprint of the former historical structures. No PAHs, BTEX, or PHCs impacted soil or groundwater were identified.

Based on the results of the Phase Two ESA investigation, it is expected that contaminated soil as defined by current MECP regulations will be encountered during the proposed construction in the area of GS-N within the former building footprint. Based on the nature of the contaminants identified (Zinc) and debris identified in the former building footprint, it is recommended that soil and debris be disposed of at an approved facility subject to a toxicity characteristic leaching procedure (TCLP) analysis to confirm waste classification.

Note: According to Mr. Saumure, a second fire occurred approximately a month after the first fire (which occurred in June 2018) which reportedly destroyed a third on-site structure. As only the June 2018 fire was reported to GEMTEC prior to the 2019 Phase Two ESA investigation, samples were only taken from the footprint of two of the former on-site structures. No additional environmental work was completed at the site of the fire which reportedly destroyed the third structure.

2.2.5 Phase One Environmental Site Assessment Update, 1055 Klondike Road, Ottawa, Ontario (dated June 2021)

A Phase One ESA update was completed by GEMTEC for the subject property titled "*Phase One Environmental Site Assessment Update, 1055 Klondike Road, Ottawa, Ontario*", dated June 10, 2021. The following APECs were identified in the Phase One ESA:

- **APEC 1- Debris from Historical Fire:** Through observations made during the site reconnaissance and an interview with the site representative, remnant burnt building material and debris was identified with the historical building footprint of a structure prior to a fire in July 2018 which destroyed the structure. The potentially associated contaminants of concern are metals and PAHs in soil and groundwater. This APEC is present towards the centre of the subject site approximately 10 meters northeast from the other historical building footprints whose structures were destroyed in a fire in June 2018.

- **APEC 2 – Fill of Unknown Original Identified During a Previous Geotechnical Investigation:** Through a review of historical reports, fill of unknown origin was identified throughout the subject site. The potentially associated contaminants of concern are metals, inorganics, PHC F1-F4, VOCs and PAHs in soil and groundwater. This APEC is present across the subject site.

3.0 SCOPE OF THE INVESTIGATION

The following section summarizes the scope of work for the supplemental Phase Two ESA investigation completed in August 2021. Details pertaining to the scope of work for the Phase Two ESA carried out between March 2018 and March 2019 can be found in the report titled "*Phase Two Environmental Site Assessment, 1055 Klondike Road, Ottawa, Ontario*", dated May 17, 2019.

3.1 Study Objectives and Scope of Work

The objective of the work proposed was to provide subsurface information relative to the potential environmental impacts related to the identified APECs. Environmental sampling was carried out to characterize the quality of soil and groundwater within the subject property APECs. Any deviations from the proposed scope of work have been noted.

The scope of work for the supplemental as outlined in GEMTEC's proposal included the following:

- Collection and analytical submission of 1 soil sample from the historical building footprint in the location of the second historical fire for analysis of contaminants of potential environmental concern (COPCs) including PAHs and metals;
- Collection and analytical submission of 4 soil samples (3 bulk samples and 1 duplicate sample) for analysis from the fill material of unknown origin identified on the subject property for analysis of COPCs including PHC F1-F4, VOCs, M&I, and PAHs;
- Collection and analysis of two TCLP samples. The first TCLP sample included a composite made up of the contaminated soil identified in the former building footprint (destroyed by fire) as per recommendations made following the historical Phase Two ESA. The second TCLP sample included soil samples submitted for the Supplemental Phase Two field investigation summarized herein. The TCLP samples were submitted for analysis of COPCs including M&I;
- Collection and analysis of 4 groundwater samples 3 monitoring wells, and one trip blank for volatiles) analyzed for COPCs including PAHs and Metals for one sample and PHC F1-F4, VOCs, M&I, and PAHs for two of the samples; **Note:** Only 3 groundwater samples (2 monitoring wells and one trip blank) were collected as MW 18-3 had high sediment in the well and no sample could be obtained from this location;
- Assessment of soil and groundwater analytical results against applicable provincial site condition standards; and,

- Preparation of a supplemental Phase Two ESA report summarizing the purpose, methodology and results of the investigation (this report).

3.2 Media Investigated

This supplemental Phase Two ESA included sampling and analysis of soil and groundwater. No sediment or surface water sampling was conducted as part of the investigation. The rationale for sampling the soil and groundwater was to investigate the potential for contamination at the APECs identified in the updated Phase One ESA.

The soil quality at discrete locations on the subject property was assessed by collecting soil samples from four borehole locations numbered BH21-1, BH21-2. BH21-3 and BH21-4. Soil samples were field preserved in the field and submitted for laboratory analysis of the identified contaminants of concern. Two TCLP samples, including a composite made up of the contaminated soil identified in the former building footprint (destroyed by fire) during the historical Phase Two ESA, and a sample including soil samples submitted for the Supplemental Phase Two field investigation, were also collected and submitted for leachate analysis. The locations of the sampling locations are provided on Figure A.1, Appendix A.

The groundwater quality at the subject property was assessed by collecting groundwater samples from two of three on-site monitoring wells. Groundwater samples were collected directly into laboratory supplied bottles using dedicated sampling equipment.

3.3 Phase One Conceptual Site Model

Based on the historical review, site interviews, and site reconnaissance, GEMTEC concluded that there is potential for soil and groundwater contamination at the subject property. The Phase One ESA Conceptual Site Model (CSM) is presented under separate cover and is summarized as follows:

- Based on the review of selected historical aerial photographs, the subject property was developed sometime prior to 1934, with agricultural land use and structures on the subject property. Historical land use in the study area was predominantly agricultural with commercial developments concentrated to the south along March Avenue starting in 2009;

- The surrounding properties within the study area are fully serviced by the municipality and utility providers. The subject property will be fully serviced by the municipality and utility providers following development;

- The surrounding properties are primarily residential with commercial businesses concentrated along March Road to the west of the subject property;

- The MECP Well Records search identified twenty-eight wells within the 250-metre search radius. However, many of these are monitoring wells and/or were installed in the past prior to the development of the municipal water supply system in the area;

- No provincially significant wetlands (PSWs) or area of natural significance (ANSI) were identified on the subject property or within the study area;

- Shirley's Brook was identified on and within parts of the subject property, along the west and northern property line. An unevaluated wetland is located north and west of the subject site;

- The subject property has a relatively flat topography, with a slope towards Shirley's Brook along the west property line. The property has an elevation of approximately 70 metres above sea level. Surrounding topography generally slopes gradually downwards towards the Shirley's Brook, which is located to the west and north of the subject property. The overall topography generally slopes towards the Ottawa River, located approximately 2.5 kilometers northeast;

- Surficial and bedrock geology maps of the Ottawa area indicate that the overburden in the vicinity of the subject property generally consists of clay and silt and sand and gravel with a thickness ranging from 5 to 10 metres. The bedrock is mapped as Paleozoic sandstone and dolostone of the March Formation; and,

- Based on the review of records, the interview and the site reconnaissance completed as part of the Phase One ESA, GEMTEC identified nineteen PCAs for the study area. Two of the PCAs were determined to create APECs on the subject property.

Information considered for the development of this CSM was gathered from numerous sources (i.e. aerial photographs, city directories, environmental database searches, physical setting sources, interview and a site reconnaissance), which reduces the potential for not identifying a former property use or PCA.

3.4 Impediments and Deviations from Sampling and Analysis Plan

As noted prior, monitoring well MW18-3 had high sediment in the well and no sample could be obtained from this location.

4.0 INVESTIGATION METHODOLOGY

The following section summarizes the investigation for the supplemental Phase Two ESA investigation completed in August 2021. Details pertaining to the investigation methodology for the Phase Two ESA carried out between March 2018 and March 2019 can be found in the report

titled "*Phase Two Environmental Site Assessment, 1055 Klondike Road, Ottawa, Ontario*", dated May 17, 2019.

4.1 Field Methodology

4.1.1 Field Screening Measurements

Soil samples were screened using an RKI Eagle 2, which operates as a photoionization detector (PID) and combustible gas indicator (CGI), to measure total organic vapours and combustible vapours.

The PID was equipped with a 10.6 electron-volt (eV) lamp, which was calibrated with a known concertation of isobutylene. This instrument detects VOCs that emit below an ionization potential of 10.6 eV, which includes a wide range of chemicals such as solvents and fuels. The detection limit of the instrument ranges from 0 to 15,000 ppm, and accuracy is +/- 10% for VOCs in the range of 0 and 2,000 ppm and +/- 20% of the reading above 2,000 ppm. The resolution of this instrument is 0.1 ppm for VOCs in the range of 0 and 1,000 ppm and 1 ppm for readings above 1,000 ppm. The PID provides an indication of organic contamination in soil but does not measure concentrations of individual contaminants.

The CGI detects combustible vapours such as those associated with fuels. This instrument measures a concentration of total combustible gas, calibrated to a known concentration of hexane. The instrument operates in the methane elimination mode. The detection limit of the instrument ranges from 0 to 11,000 ppm (i.e., 100 % LEL of hexane). The CGI has an accuracy of 25 ppm below 1,000 ppm and 5% of the lower explosive limit (LEL) between 1,000 ppm and 100% LEL. As with the PID, it provides an indication of contamination but not chemical specific concentrations.

There are no regulatory criteria for soil vapours; however, elevated vapour concentrations are generally indicative of the presence of volatile parameters. Concentrations vary with parameter type, concentration and age and the readings are only intended to be used as a field screening tool to provide a qualitative measure of volatile chemical concentrations within the subsurface. The readings do not provide a quantitative measure of analytical results.

The RKI Eagle 2 was obtained by GEMTEC from Maxim Environmental & Safety Inc. (Maxim) for this project. Maxim calibrates instruments on a regular basis to maintain consistent results. Site calibration of the field instrument was completed by GEMTEC field technicians each day according to the manufacturer's instructions.

4.1.2 Soil Sampling

Soil samples were recovered following the *Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario* (MOE, 1996). Soil samples were inspected in the field for visual, tactile and olfactory evidence of impact, and following a period of equilibration to ambient

temperature, soil sample vapours were screened using a combustible gas detector (RKI Eagle combustible gas detector calibrated to hexane standards, with methane elimination enabled). The results of the soil vapour readings are provided in in the Borehole and Monitoring Well Logs in Appendix B.

The soil sampling program included the submission of 5 bulk soil samples. Soil samples were selected based on soil vapour concentrations, visual, olfactory and tactile evidence of impact, and proximity to APECs considering the pertinent COPCs. For soil samples collected for the analysis of PHC F1-F4 and VOCs, a core of soil was placed in a pre-weighed laboratory prepared vial containing a measured amount of methanol. A total of 4 soil samples (5 bulk plus 1 duplicate samples) were collected and stored in laboratory provided coolers with ice / ice packs and shipped to the laboratory for analysis. Two TCLP samples were also submitted. The first TCLP sample included a composite made up of the contaminated soil identified in the former building footprint (destroyed by fire) as per recommendations made following the historical Phase Two ESA. The second TCLP sample included a composite of the soil samples submitted for the supplemental Phase Two field investigation. Samples were submitted to AGAT Laboratories (AGAT) of Ottawa, Ontario, a CALA-certified analytical laboratory, under standard chain-of-custody protocols and in accordance with GEMTEC QA/QC procedures. The soil samples submitted for analyses are summarized in Table 4.1.

Table 4.1: Summary of Soil Sampling Program and COPC Analyses

Sample ID	Depth Interval (mbgs)	Gastech Reading (ppmv)	Soil Description	Analytical Analyses
BH21-1 SA-1	0.00 – 0.20	No Readings[2]	Fill Material: Grey Silty Sand	Metals and PAHs
BH21-2 SA-2	0.53 – 0.86	No Readings[2]	Fill Material: Light Brown Silty Sand	M&I, VOCs, PHC F1-F4, PAHs
BH21-2 SA-102[1]	0.53 – 0.86	No Readings[2]	Fill Material: Light Brown Silty Sand	M&I, VOCs, PHC F1-F4, PAHs
BH21-3 SA-3	1.52 – 2.13	Hex: 65 IBL: 0	Fill Material: Light Brown Silty Sand	M&I, VOCs, PHC F1-F4, PAHs
BH21-4 SA-1	0.15 – 0.76	Hex: 50 IBL: 1	Fill Material: Brown Silty Sand	M&I, VOCs, PHC F1-F4, PAHs
TCLP-COMP 1	-	-	-	M&I
TCLP-COMP 2	-	-	-	M&I

Notes:

mbgs – Metres below ground surface
ppmv – Parts per million by volume
PHC F1-F4 – Petroleum Hydrocarbon Four Fractions
PAHs – Polycyclic Aromatic Hydrocarbons
M&I – Metals and Inorganics
VOCs – Volatile Organic Compounds
1- QA/QC Field Duplicate Sample
2- Gastech readings could not be completed due to low sample recovery

4.1.3 Groundwater Monitoring and Sampling

Prior to groundwater sampling, depth to static groundwater levels were measured using an electronic oil-water interface probe. To prevent cross contamination between wells, the interface probe was decontaminated between locations by scrubbing with an Alconox© solution and rinsing well with distilled water. Due to the dedicated nature of monitoring well instrumentation (i.e., Waterra inertial hand pump and tubing) no decontamination procedures were required during groundwater sampling. All required lengths of tubing for the groundwater sampling were disposed of after usage at each designated well.

Depth to water table readings were recorded during the historical Phase Two ESA investigation and during the supplemental Phase Two ESA investigation. Each monitoring well was developed prior to sampling by removing a minimum of three well volumes from each location on August 16, 2021. Well development activities were performed using dedicated Waterra inertial hand pumps. Groundwater samples were subsequently collected, after allowing for a period of aquifer stabilization, using low-flow sampling techniques to allow for the collection of samples which were representative of formation conditions. Groundwater samples were collected from the monitoring wells directly into laboratory supplied bottles using a bailers.

A total of three groundwater samples (one sample from each accessible well and one trip blank) were stored in laboratory provided coolers with ice / ice packs and shipped to the laboratory for analysis. Samples were submitted to AGAT under standard chain-of-custody protocols and in accordance with GEMTEC QA/QC procedures. The groundwater samples submitted for analyses of the COPCs are summarized in Table 4.2.

Table 4.2: Summary of Groundwater Sampling Program and COPC Analyses

Monitoring Well	Screened Interval (mbgs)	Stratigraphic Unit	Analyses
MW21-1	3.05 – 6.10	Overburden	PAHs, Metals
MW19-2	5.48 – 8.53	Overburden	PHC F1-F4, VOCs, PAHs and M&I
Trip Blank[1]	-	-	PHC F1, VOCs

Notes: mbgs – metres below ground surface
PHC F1-F4 – Petroleum Hydrocarbon Four Fractions
PAHs – Polycyclic Aromatic Hydrocarbons
M&I – Metals and Inorganics
VOCs – Volatile Organic Compounds
1- QA/QC Sample

4.2 Laboratory Analytical Program

Soil and groundwater samples were collected directly into laboratory-supplied sampling containers. All samples were stored in dedicated coolers with ice / ice packs and shipped to the laboratory within the required holding times. Groundwater and soil samples were submitted to AGT Laboratories of Ottawa, Ontario.

AGAT is accredited by the Standards Council of Canada (SCC) in cooperation with the Canadian Association of Laboratory Accreditation (CALA) for specific environmental tests listed in the scope of accreditation. They are accredited to the ISO/IEC 17025 (2017) standard and employs in-house quality assurance and quality control programs to govern sample analysis including the analysis of method blanks, spiked blanks, and the analysis of duplicates (10%) for each sample batch.

4.3 Surveying

The borehole locations were selected by GEMTEC personnel. The ground surface elevations at the location of the boreholes and monitoring wells (with elevations from the PVC risers) 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 locations of the boreholes and monitoring wells advanced on-site are shown on Figure A.1 in Appendix A.

4.4 Quality Assurance / Quality Control Program

Quality assurance and quality control of the soil and groundwater samples was maintained by adhering to the following:

- The field investigation was completed under GEMTEC standard operating procedures (SOPs) for intrusive investigations, including soil and groundwater sampling best practices;
- Samples were assigned unique identification numbers, as they were collected, identifying the project number, date, sample location, and depth. The sample numbers were recorded in field notes for each location;
- Sample containers provided by the analytical laboratory were used and laboratory requirements for sample size, container type, preservatives and filtering were maintained;
- Non-disposable sampling equipment was cleaned using Alconox© and distilled water following each use to avoid potential cross-contamination;
- A chain-of-custody (COC) form was filled out prior to submitting the selected samples to the laboratory. The COC documented sample movement from time of field collection to receipt at the laboratory and provided a record of sample identification, requested analysis and conditions of samples upon arrival at the laboratory (e.g. temperature, container status, etc.);

- Soil and groundwater samples were selected by the GEMTEC field staff for field duplicate testing. The number of duplicate samples submitted is equivalent to a minimum of 10% of the total number of samples submitted, under accepted standard industry QA/QC practices;
- A trip blank was transported to the project limits during the groundwater sampling event and analyzed by the laboratory;
- Field monitoring equipment was calibrated according to industry requirements prior to the site visit and during implementation of the field program as required (i.e., on-site calibration); and,
- Samples were randomly selected by the laboratory for Quality Assurance checks. Generally, one sample for every ten samples submitted is assessed by the laboratory internal QA/QC program. For each parameter, there is an acceptable upper and lower limit for measured concentrations.

5.0 REVIEW AND EVALUATION

5.1 Site Stratigraphy

The surficial geology for the site was obtained from the Geotechnical Investigation conducted by GEMTEC (2018) entitled "*Geotechnical Investigation, Proposed Residential Subdivision, 1055 Klondike Road, Ottawa, Ontario*" and is summarized in Section 2.2.3.

It should be noted that the borehole and monitoring well logs indicate the subsurface conditions encountered at the specific test locations only. Boundaries between zones on the logs are often not distinct, but rather are transitional and have been interpreted based on observations by trained GEMTEC field personnel. The precision with which subsurface conditions are indicated depends on the method of drilling, the frequency and recovery of samples, the method of sampling, and the uniformity of the subsurface conditions. Subsurface conditions at other than the test locations may vary from the conditions encountered in the boreholes.

5.2 Groundwater Elevations and Flow Direction

Groundwater depths were measured directly from the top of pipe in each monitoring well location on March 15, 2018, May 14, 2018, July 27, 2018, October 4, 2018, March 22, 2019, and April 4, 2019 during the historical Phase Two ESA investigation and on August 16, 2021 during the supplemental Phase Two ESA investigation. Measured depths to groundwater table, and estimated groundwater elevations are summarized in Table 5.1.

Table 5.1: Groundwater Elevations

Location	Measurement Date	Groundwater Depth Below Ground Surface (metres)	Geodetic Elevation (metres)
MW18-1	15-Mar-18	2.0	75.7
	14-May-18	2.9	74.8
	22-Mar-19	2.2	75.5
MW18-3	15-Mar-18	6.3	72.5
	14-May-18	6.8	72.0
	27-Jul-18	7.6	71.2
	16-Aug-21	**8.16**	**70.6**
MW18-5	15-Mar-18	5.5	72.3
	14-May-18	5.9	71.9
	27-Jul-18	6.7	73.5
	04-Oct-18	Dry	Dry
	22-Mar-19	Dry	Dry
	16-Aug-21	**Dry**	**Dry**
MW19-2	22-Mar-19	6.7	71.8
	04-Apr-19	5.1	73.4
	16-Aug-21	**High sediment**	**High sediment**
MW21-1	**16-Aug-21**	**5.72**	**74.4**

Notes: mbgs – metres below ground surface
masl – metres above sea level
Bolded – Readings taken during supplemental Phase Two ESA

Based on the groundwater table elevations recorded, the local shallow groundwater flow was observed to be trending northwest towards Shirley's Bay, as anticipated.

5.3 Soil Field Screening

Soil vapours were screened within the recovered soil samples following a period of equilibration to ambient temperature, using a combustible gas detector (RKI Eagle combustible gas detector calibrated to hexane standards, with methane elimination enabled). Combustible headspace soil vapour readings ranged from 0 ppm and 75 ppm.

Field screening results are provided in the Borehole and Monitoring Wells Logs in Appendix B.

5.4 Analytical Results

5.4.1 Soil Quality

Analytical results for the soil samples submitted for analyses for both the historical Phase Two ESA and the supplemental Phase Two ESA, and exceedances to the selected MECP Table 9 SCS regulatory criteria, are presented in Table C1 and C2, Appendix C. A summary of the soil

exceedances is provided in Table 5.2. Laboratory certificates of analysis are provided in Appendix D.

Table 5.2: Summary of Soil Sample Analytical Results

Sampling Year	Sample ID	Depth Interval (mbgs)	Soil Description	Analytical Analyses	Exceedances
2018	BH18-1 SA3	1.52 – 2.29	Fill Material: Brown silt and sand	PHC F1-F4, BTEX	**Table 9 SCS:** None
2018	BH18-3 SA9	6.10 – 6.71	Grey brown silt and clay	PHC F1-F4, BTEX	**Table 9 SCS:** None
2018	BH18-301 SA9[1]	6.10 – 6.71	Grey brown silt and clay	PHC F1-F4, BTEX	**Table 9 SCS:** None
2018	BH18-5 SA8	5.33 – 5.94	Grey brown silt and clay	PHC F1-F4, VOCs	**Table 9 SCS:** None
2018	GS-N	0.30	Brown silty sand with brick, glass and wood debris	Metals, PHC F1-F4, PAHs, BTEX	**Table 9 SCS:** Zinc
2018	GS-M	0.30	Brown silty sand, plastic debris	Metals, PHC F1-F4, PAHs, BTEX	**Table 9 SCS:** None
2021	BH21-1 SA-1	0.00 – 0.20	Fill Material: Grey Silty Sand	Metals and PAH	**Table 9 SCS:** None
2021	BH21-2 SA-2	0.53 – 0.86	Fill Material: Light Brown Silty Sand	M&I, VOCs, PHC F1-F4, PAHs	**Table 9 SCS:** None
2021	BH21-2 SA-102[1]	0.53 – 0.86	Fill Material: Light Brown Silty Sand	M&I, VOCs, PHC F1-F4, PAHs	**Table 9 SCS:** None
2021	BH21-3 SA-3	1.52 – 2.13	Fill Material: Light Brown Silty Sand	M&I, VOCs, PHC F1-F4, PAHs	**Table 9 SCS:** None
2021	BH21-4 SA-1	0.15 – 0.76	Fill Material: Brown Silty Sand	M&I, VOCs, PHC F1-F4, PAHs	**Table 9 SCS:** None
2021	TCLP-COMP 1	-	-	M&I	**O. Reg 558/347:** None
2021	TCLP-COMP 2	-	-	M&I	**O. Reg 558/347:** None

Notes: mbgs – metres below ground surface

[1] QA/QC sample

PHC F1-F4 – Petroleum Hydrocarbon Fractions F1-F4

BTEX – Benzene, Toluene, Ethylbenzene, Xylene

PAHs – Polycyclic Aromatic Hydrocarbons

M&I – Metals and Inorganics

VOC – Volatile Organic Compounds

Table 9 RPI/ICC SCS: Generic Site Condition Standards for Use within 30 m of a Water Body in a Non-Potable Ground Water Condition, residential/parkland/institutional, industrial/commercial/community (RPI/ICC) land use, coarse textured soils (MECP, 2011).

O.Reg 558/347: O.Reg. 347 Schedule 4, Leachate Quality Criteria, to evaluate waste classification (hazardous or non-hazardous waste) for on-site soils (MECP, 2011).

5.4.2 Groundwater Quality

Analytical results for the groundwater samples submitted for analyses, and exceedances to the selected MECP Table 9 SCS regulatory criteria, are presented in Table C3, Appendix C. A summary of the groundwater exceedances is provided in Table 5.3. Laboratory certificates of analysis are provided in Appendix D.

Table 5.3: Summary of Groundwater Sample Analytical Results

Sampling Year	Monitoring Well	Screened Interval (mbgs)	Analyses	Exceedances
2018	MW18-1	1.52 – 3.05	PHC F1-F4, BTEX	**Table 9 SCS:** None
2018	MW18-3	3.05 – 4.57	PHC F1-F4, BTEX	**Table 9 SCS:** None
2018	MW18-5 (*)	2.44 – 3.05	PHC F1-F4, VOCs	**Table 9 SCS:** PHC F3
2019	MW19-2 (*)	5.48 – 8.53	PHC F1-F4, BTEX	**Table 9 SCS:** None
2021	MW21-1	3.05 – 6.10	PAHs, Metals	**Table 9 SCS:** None
2021	MW19-2	5.48 – 8.53	PHC F1-F4, VOCs, PAHs and M&I	**Table 9 SCS:** None
2021	Trip Blank[1]	-	PHC F1, VOCs	**Table 9 SCS:** None

Notes: mbgs – metres below ground surface
masl – metres above sea level
[1] QA/QC sample
PHC F1-F4 – Petroleum Hydrocarbon Fractions F1-F4
BTEX – Benzene, Toluene, Ethylbenzene, Xylene
PAHs – Polycyclic Aromatic Hydrocarbons
M&I – Metals and Inorganics
VOC – Volatile Organic Compounds
Table 9 SCS: Generic Site Condition Standards for Use within 30 m of a Water Body in a Non-Potable Ground Water Condition, all property types, groundwater (MECP, 2011).

(*) The groundwater sample for MW18-5 exceeded the Table 9 SCS for PHC F3 during historical Phase Two ESA during the sampling event on May 14, 2018. To confirm the exceedance and assess the groundwater conditions following the fire, additional groundwater sampling following monitoring well development was recommended and carried out in August 2018. However, due to low water levels, the monitoring well at MW18-5 could not be resampled. To address this, an additional monitoring well MW19-2 was advanced in March 2019 between the former aboveground fuel storage tank and MW18-5. The groundwater sample from MW19-1 was submitted for PHC F1-F4 and BTEX, and no exceedances to the Table 9 SCS were identified.

5.5 Quality Assurance and Quality Control Results

5.5.1 Blind Field Duplicates

A quality assurance/quality control (QA/QC) program was implemented during the investigation. The QA/QC program consisted of the use of industry standard field protocols and the collection of blind field duplicates. Blind duplicates are submitted for laboratory analysis to evaluate laboratory precision and the field sampling and handling procedures, in addition to sample homogeneity. The relative percent difference (RPD) is defined as the absolute value of the variation between a sample and its duplicate, when compared to the average concentration of the original and the duplicate. It is used to assess the validity of the field and laboratory analytical procedures. Calculations of the relative percent differences (RPD) between the parent and duplicate samples were performed and compared to the acceptance limits outlined in the '*Protocol for Analytical Methods Used in the Assessment of Properties'* under Part XV.1 of the Environmental Protection Act, April 2011. The RPD calculation is only applicable when concentrations in the sample and its field duplicate are greater than five times the laboratory reportable detection limit (RDL).

One parent - duplicate soil sample set was collected as part of the supplemental Phase Two ESA investigation: BH21-2 SA-102 as a duplicate of BH21-2 SA-2. RPDs were calculated for all parameters where the original and duplicate sample concentrations exceeded five times the reportable detection limits (RDL). The RPD value ranges for parent – duplicate sets were as follows:

- BH21-2 SA-2 and BH21-2 SA-102: 3% to 30%;
    - Apart from Electrical Conductivity (EC) which fell outside of the MECP alert criteria range all of the calculated RPDs were within the acceptable range for soil (MOE, 2011). The elevated RPDs from EC may be attributed to the inherent heterogeneity within soil. These deviations from acceptable RPD criteria are not considered indicative of unacceptable data quality, however, where the concentrations of the contaminants approach the applicable MECP SCS or ESQS, it should be considered that the value may be indicative of an exceedance of the standard.

5.5.2 Trip Blank

Trip blanks are laboratory prepared samples that are transported to the subject property in the same shipping containers used for the transport of the collected groundwater samples. The analysis of trip blanks is completed to determine if sample shipping or storage procedures have possibly influenced the analytical results. One trip blank was collected as part of this environmental sampling event.

The concentrations of VOC/PHC F1 parameters were less than the laboratory reportable detection limits in the trip blank sample, with laboratory detection limits below the applicable Table

9 SCS. These results indicate that the data quality is considered reliable, with no evidence of cross-contamination during groundwater sample transport to the laboratory.

5.5.3 Analytical Laboratory QA/QC

The analytical laboratory completed all analyses in accordance with internal laboratory QA/QC, which includes standardized analytical methods and procedures, in accordance with O.Reg 153/04, as amended. GEMTECs review of AGAT's QA/QC notes indicate that:

- The soil report indicated that spike recovery for all parameters was within acceptance limits for the matrix spike.

5.5.4 QA/QC Summary

Based on the measures discussed above, considering the inherent heterogeneity of soil, sample collection and handling protocols are considered acceptable and associated analytical results are considered reliable. The sample collection methods and duplicates do not suggest inconsistencies in the field collection, transport, or in the laboratory analysis methods.

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the supplemental Phase Two ESA, GEMTEC offers the following pertinent conclusions:

- A layer of topsoil was encountered on-site followed by fill materials in some locations. Fill material was observed to be comprised of dark brown to brown silty sand with organic material and grey brown silty clay with pockets of dark brown organic material, with trace to some amounts of gravel. Cobbles were also observed to be underlying the surficial topsoil beneath the granular driveway which runs across the middle of the site;

- Based on the groundwater table elevations recorded on August 16, 2021 during the supplemental Phase Two ESA and the observed topography of the subject site, the local shallow groundwater flow trends northwest towards Shirley's Brook;

- Assessment of soil analytical results indicated that soil quality within the project limits met the applicable MECP Table 9 SCS for all parameters analyzed in most locations with the exception of elevated zinc concentration from a shallow soil sample taken from within the footprint of a former on-site structure which was destroyed during a historical fire;

- Assessment of groundwater analytical results indicated that groundwater quality within the project limits met the applicable MECP Table 9 SCS for all parameters analyzed in most locations during most sampling events with the exception of PHC F3 in the location of MW18-5 in 2018. However, follow up confirmatory groundwater sampling in the vicinity of this location was completed at MW19-2 in 2019 and no exceedances to the MECP Table 9 SCS were observed at the time of the confirmatory sampling.

- Assessment of the TCLP analytical results indicated that soil quality in the project limits meets the applicable MECP O.Reg 558/347 Schedule 4 for all parameters analyzed and therefore may be disposed of as non-hazardous waste at any MECP licenced landfill.

Based on the results of the supplemental Phase Two ESA, no additional work is recommended at this time for the subject property.

If the on-site monitoring wells are no longer required, they should be decommissioned by a licensed well contractor, in accordance with O.Reg. 903, as amended.

7.0 LIMITATION OF LIABILITY

This report was prepared for and the work referred to within it has been undertaken by GEMTEC Consulting Engineers and Scientists Limited for Maple Leaf Custom Homes. It is intended for the exclusive use of Maple Leaf Custom Homes. This report may not be relied upon by any other person or entity without the express written consent of GEMTEC and Maple Leaf Custom Homes. 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

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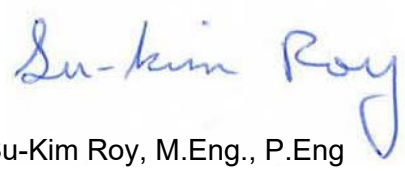
9.0 CLOSURE

We trust this letter is sufficient for your requirements. If you have any questions concerning this information or if we can be of further service to you on this project, please call us.

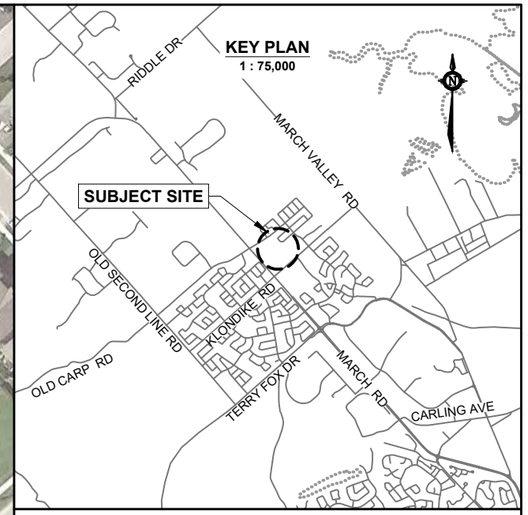
Rhian Fox, BSc.
Environmental Technologist



Su-Kim Roy, M.Eng., P.Eng
Senior Environmental Engineer

APPENDIX A

Figures



LEGEND

- BH # / XX.XX — BOREHOLE ID; GROUND SURFACE ELEVATION, IN METRES GEODETIC DATUM
- BOREHOLE LOCATION (current investigation by GEMTEC)
- BOREHOLE LOCATION (previous investigation by GEMTEC, 2018)
- BOREHOLE WITH MONITORING WELL (current investigation by GEMTEC)
- GRAB SAMPLE LOCATION (APPROXIMATE) (current investigation by GEMTEC)
- SUBJECT SITE

Scale 1:2000

0 40 80 120m

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Drawing: SOIL AND GROUNDWATER SAMPLING LOCATION PLAN

Client: NOVATECH

Project: 64153.85

SUPPLEMENTAL PHASE TWO
ENVIRONMENTAL SITE ASSESSMENT
1055 KLONDIKE ROAD
OTTAWA, ONTARIO

Drwn by: S.L.

Chkd by: R.F.

Date: SEPTEMBER, 2021

Rev.: 0

FIGURE A.1

N:\PROJECTS\64100\64153.852021 SUPPLEMENTAL PHASE TWO\DRAFTING\1.DRAWINGS\64153.85_PHTWOESASUPP_2021-09.DWG

Sample ID:	MW18-5
Parameter	Analytical Result (ug/g)
F3 (C16 to C34)	548

Sample ID:	GS-N
Depth (mbgs):	N/A
Parameter	Analytical Result (ug/g)
Zinc	439

LEGEND

- BH # — BOREHOLE ID
- XX.XX — GROUND SURFACE ELEVATION, IN METRES GEODETIC DATUM
- **BOREHOLE LOCATION** (current investigation by GEMTEC)
- **BOREHOLE LOCATION** (previous investigation by GEMTEC, 2018)
- **BOREHOLE WITH MONITORING WELL** (current investigation by GEMTEC)
- **GRAB SAMPLE LOCATION (APPROXIMATE)** (current investigation by GEMTEC)
- **SUBJECT SITE**

Parameter	MECP Table 9 SCS[2]
F3 (C16 to C34)	548
Zinc	439

Notes:

1 - MECP Table 9 SCS: Generic Site Condition Standards for Use within 30 m of a Water Body in a Non-Potable Ground Water Condition, residential/parkland/institutional, industrial/commercial/community (RPI/ICC) land use, coarse textured soils (MECP, 2011).

2- MECP Table 9 SCS: Generic Site Condition Standards for Use within 30 m of a Water Body in a Non-Potable Ground Water Condition, all types of property use, groundwater (MECP, 2011).

3 - MECP O.Reg. 558/347 Schedule 4, Leachate Quality Criteria, to evaluate waste classification (hazardous or non-hazardous waste) for on-site soils (MECP, 2000).

Red	Soil Sample which exceeds MECP Table 9 SCS
Bolded	Groundwater sample which exceeds MECP Table 9 SCS
Underlined	Leachate sample which exceeds MECP O.Reg 558/347 Schedule 4

Scale 1:2000

0 40 80 120m

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Drawing: SOIL AND GROUNDWATER EXCEEDANCES

Client: NOVATECH

Project: 64153.85

SUPPLEMENTAL PHASE TWO
ENVIRONMENTAL SITE ASSESSMENT
1055 KLONDIKE ROAD
OTTAWA, ONTARIO

Drwn by	Chkd by
S.L.	R.F.

Date: SEPTEMBER, 2021

Rev.: 0

FIGURE A.2

N:\PROJECTS\64100\64153.85\2021 SUPPLEMENTAL PHASE TWO\DRAFTING\1 DRAWINGS\64153.85_PHTWOESASUPP_2021-09.DWG

APPENDIX B

Borehole and Monitoring Well Logs

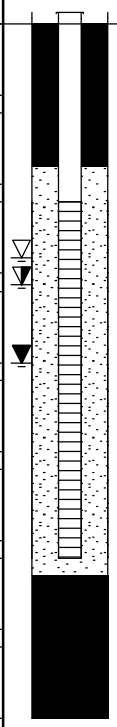
RECORD OF BOREHOLE 18-1

CLIENT:
PROJECT:
JOB#:
LOCATION: See Borehole Location Plan, Figure 2

SHEET: 1 OF 1
DATUM: Geodetic
BORING DATE: Mar 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		77.69								
0	150 mm Diameter Power Auger	Dark brown silty sand, some organic material (TOPSOIL)		77.4 / 0.00	1	50 D.O.		4				
		Brown SILT and SAND			2	50 D.O.		4				
1					3	50 D.O.		6				
2				75.4								
		Very stiff to stiff, grey brown SILT and CLAY (WEATHERED CRUST)		0.31	4	50 D.O.		5				
3					5	50 D.O.		5				
4					6	50 D.O.		3				
					7	50 D.O.		4				
5					8	50 D.O.		3				
				71.7								
		End of borehole		2.29								

MONITORING WELL INSTALLATION AND NOTES



GROUNDWATER OBSERVATIONS

DATE	DEPTH (m)	ELEVATION (m)
Mar. 15/18	2.00 ▽	75.69
May. 14/18	2.90 ▼	74.79
Mar. 22/19	2.23 ▼	75.46

GEMTEC
Consulting Engineers and Scientists

LOGGED: AN
CHECKED:

RECORD OF BOREHOLE 18-2

CLIENT:
PROJECT:
JOB#:
LOCATION: See Borehole Location Plan, Figure 2

SHEET: 1 OF 1
DATUM: Geodetic
BORING DATE: Mar 8 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		78.38									
0	150 mm Diameter Power Auger	Brown sandy silt with organic material (TOPSOIL)		78.1 / 0.00	1	50 D.O.		4					
		Grey brown SILT and SAND											
1		Brown, fine to medium grained SAND, trace to some silt, layered with grey brown SILTY SAND		77.3 / 0.25	2	50 D.O.		7					
					3	50 D.O.		5					
2		Very stiff to stiff, grey brown SILT and CLAY (WEATHERED CRUST)		76.3 / 1.04	4	50 D.O.		4					
3					5	50 D.O.		3					
4					6	50 D.O.		3					
5					7	50 D.O.		7					Borehole backfilled with auger cuttings
		Very stiff to stiff, grey SILTY CLAY		73.2 / 2.11									
6					8	50 D.O.		2					
7													
8					9	50 D.O.		2					
9				69.2 / 5.18									
		Compact, grey sand and silt, trace to some clay, some gravel and cobbles (GLACIAL TILL)			10	50 D.O.		15					
10					11	50 D.O.		27					Soil becomes saturated at about 2.3 metres below ground surface.
		Sampler refusal End of borehole		68.2 / 9.14									

GEMTEC
Consulting Engineers and Scientists

LOGGED: AN
CHECKED:

RECORD OF BOREHOLE 18-3

CLIENT:
PROJECT:
JOB#:
LOCATION: See Borehole Location Plan, Figure 2

SHEET: 1 OF 1
DATUM: Geodetic
BORING DATE: Mar 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		78.79								
0	150 mm Diameter Power Auger	Grey, crushed sand and gravel, trace silt (DRIVEWAY MATERIAL)		78.6 / 0.00	1	50 D.O.		46				
		Dark brown and brown silty sand, some gravel, and organic material (FILL MATERIAL)		77.9								
1		Brown SILT and SAND		0.15	2	50 D.O.		7				
					3	50 D.O.		7				
2				76.3								
		Brown, fine to medium grained SAND, trace to some silt		0.91	4	50 D.O.		5				
3				75.7								
		Very stiff to stiff, grey brown SILT and CLAY (WEATHERED CRUST)		2.49	5	50 D.O.		4				
4					6	50 D.O.		3				
					7	50 D.O.		4				
5												
					8	50 D.O.		3				
6					9	50 D.O.		2				
					10	50 D.O.						
7				71.2								
		Stiff, grey Silty Clay		3.05	11	50 D.O.		1				
8				70.6								
		End of borehole		7.63								

MONITORING WELL INSTALLATION AND NOTES

GROUNDWATER OBSERVATIONS

DATE	DEPTH (m)	ELEVATION (m)
Mar. 15/18	6.30 ▽	72.49
May. 14/18	6.80 ▼	71.99
Jul. 27/18	7.60 ▼	71.19

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LOGGED: AN
CHECKED:

RECORD OF BOREHOLE 18-4

CLIENT:
PROJECT:
JOB#:
LOCATION: See Borehole Location Plan, Figure 2

SHEET: 1 OF 1
DATUM: Geodetic
BORING DATE: Mar 8 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		77.61									
0	150 mm Diameter Power Auger	Dark brown silty sand / sandy silt, some organic material (TOPSOIL)		77.4 0.00	1	50 D.O.		3					
		Brown SILT and SAND, trace roots											
1				76.5 0.18	2	50 D.O.		7					
		Brown, fine to medium grained SAND, trace to some silt			3	50 D.O.		10					
2				75.5 1.12									
		Very stiff, grey brown SILT and CLAY (WEATHERED CRUST)			4	50 D.O.		4					
3					5	50 D.O.		4					
4					6	50 D.O.		2					Borehole backfilled with auger cuttings
					7	50 D.O.		2					
5													
6				71.5 2.13									
		Stiff, grey SILTY CLAY			8	50 D.O.		W.H.					
7													
8					9	50 D.O.		1					
				69.2									Soil becomes saturated at about 2.3 metres below ground surface.
		Grey sand and silt, some gravel, possible cobbles (GLACIAL TILL)		6.10 69.1	10	50 D.O.		50 for 0.1m					
		Auger refusal on possible bedrock End of borehole		8.38									

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Consulting Engineers and Scientists

LOGGED: AN
CHECKED:

ENV - BOREHOLE LOG 6415385_BOREHOLE LOGS_GNT_V01_2018-03-14.GPJ GEMTEC 2018.GDT 3/5/19

RECORD OF BOREHOLE 18-5

CLIENT:
PROJECT:
JOB#:
LOCATION: See Borehole Location Plan, Figure 2

SHEET: 1 OF 1
DATUM: Geodetic
BORING DATE: Mar 8 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		77.80									
0	150 mm Diameter Power Auger	Grey brown silty clay, with dark brown pockets, some organic material (FILL MATERIAL)			1	50 D.O.		8					
1					2	50 D.O.		5					
2					3	50 D.O.		3					
3					4	50 D.O.		4					
				74.5									
		Brown silty sand, trace wood		0.00	5	50 D.O.		5					
4					6	50 D.O.		8					
				73.1									
		Very stiff to stiff, grey brown SILT and CLAY (WEATHERED CRUST)		3.25	7	50 D.O.		12					
5					8	50 D.O.		5					
6					9	50 D.O.		3					
7					10	50 D.O.		2					
				70.1	11	50 D.O.		50 for 0.13m					
		Auger refusal on possible bedrock End of borehole		4.72									

Above ground protector
Bentonite
Filter sand
TOP OF SCREEN ELEV.: 75.36 m
50 mm diameter, 3m length slotted PVC screen
BOTTOM OF SCREEN ELEV.: 72.31 m
Well observed to be dry on October , 2018, and March 22, 2019.

GROUNDWATER OBSERVATIONS

DATE	DEPTH (m)	ELEVATION (m)
Mar. 15/18	5.50	72.30
May. 14/18	5.90	71.90
Jul. 27/18	6.70	71.10

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LOGGED: AN
CHECKED:

RECORD OF BOREHOLE 19-1

CLIENT: Novatech
PROJECT: 1055 Kondike Road
JOB#: 64153.85
LOCATION: See Borehole Location Plan, Figure 1

SHEET: 1 OF 1
DATUM: CGVD2013
BORING DATE: Mar 14 2019

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		77.98									
0	Power Auger / Hollow Stem Auger (210mm OD)	Dark brown silty sand with organic material (TOPSOIL)		77.83 / 0.15	1A 1B	SS		3					
		Loose, brown SILTY SAND			2	SS		7					
1					3	SS		7					
2				75.82									
		Stiff to very stiff, brown silty clay (WEATHERED CRUST)		2.16	4	SS		4					
3					5	SS		5					
4					6	SS		2					Backfilled with auger cuttings
5					7	TO							
6					8	SS		2					
7		Stiff, grey SILTY CLAY		70.98 / 7.00	9	TO							
8					10	TO							
9		End of Borehole Refusal on inferred Bedrock		68.84 / 9.14									

GEMTEC
Consulting Engineers and Scientists

LOGGED: BWW
CHECKED: GD

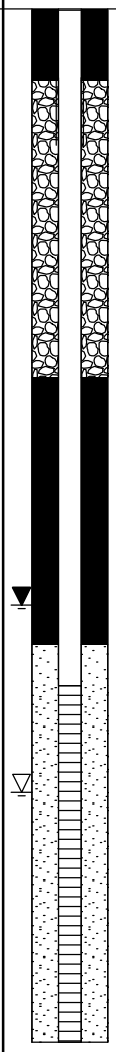
ENV - BOREHOLE LOG 64153.85_GNT_V01_2019-03-15.GPJ GEMTEC 2018.GDT 3/5/19

RECORD OF BOREHOLE 19-2

CLIENT: Novatech
PROJECT: 1055 Kondike Road
JOB#: 64153.85
LOCATION: See Borehole Location Plan, Figure 1

SHEET: 1 OF 1
DATUM: CGVD2013
BORING DATE: Mar 14 2019

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		78.55									
0	Power Auger / Hollow Stem Auger (210mm OD)	Soil stratigraphy not logged											
1													
2													
3													
4													
5													
6													
7													
8				69.71									
		End of Borehole		8.84									



GROUNDWATER OBSERVATIONS

DATE	DEPTH (m)	ELEVATION (m)
Mar. 19/22	6.70 ▽	71.85
Apr. 04/19	5.10 ▼	73.45

GEMTEC
Consulting Engineers and Scientists

LOGGED: BWW
CHECKED: GD

ENV - BOREHOLE LOG 64153.85_GNT_V01_2019-03-15.GPJ GEMTEC 2018.GDT 3/5/19

RECORD OF BOREHOLE 21-1

CLIENT: Maple Leaf Custom Homes
PROJECT: 1055 Klondike Road- Phase Two ESA
JOB#: 64153.85
LOCATION: Refer to Borehole and Monitoring Well Location Plan, Figure A.1

SHEET: 1 OF 1
DATUM: CGVD28
BORING DATE: Aug 12 2021

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		80.10									Stick-up Well
0		Topsoil		79.95	1	SL	203		PAHs, Metals	Hex: 75 IBL: 0	None		Filter Sand
		Brown and grey SILTY SAND with ash		0.15 / 79.75									
		Light grey CLAYEY SILT		0.36	2	SL	406			Hex: 75 IBL: 0	None		
1													Bentonite
2					3	SL	762			Hex: 25 IBL: 0	None		
				77.82									
		Grey SILTY CLAY with sand		2.29	4	SL	762			Hex: 60 IBL: 0	None		
3													TOP OF SCREEN ELEV.: 77.05 m
				76.44									
		Brown SILTY SAND		3.66	5	SL	153				None		51 millimetre diameter slotted 2" PVC pipe
				76.14									
4		Grey SILTY CLAY		3.96	6	SL	762			Hex: 55 IBL: 0	None		Filter Pack
5					7	SL	762			Hex: 55 IBL: 0	None		
6					8	SL	762			Hex: 60 IBL: 0	None		
				74.01									BOTTOM OF SCREEN ELEV.: 74.01 m
		End of Borehole		6.10									

GROUNDWATER OBSERVATIONS

DATE	DEPTH (m)	ELEVATION (m)
Aug. 12/21	6.81 ▽	74.24
Aug. 16/21	5.72 ▼	75.33

GEMTEC
Consulting Engineers and Scientists

LOGGED: R.F.
CHECKED: S.R.

RECORD OF BOREHOLE 21-2

CLIENT: Maple Leaf Custom Homes
PROJECT: 1055 Klondike Road- Phase Two ESA
JOB#: 64153.85
LOCATION: Refer to Borehole and Monitoring Well Location Plan, Figure A.1

SHEET: 1 OF 1
DATUM: CGVD28
BORING DATE: Aug 12 2021

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		78.48									
0	Power Auger / Hollow Stem Auger (210mm OD)	Grey GRAVEL		78.23									
		Brown SILTY SAND		0.25	1	SL	280		PHC F1-F4/VOCs, PAHs, M&I + DUP		None		
					2	SL	330				None		
1													Backfilled with Auger Cuttings
2					3	SL	508				None		
				76.14									
		Grey SILTY CLAY		2.34									
		End of Borehole		76.04 2.44									

GEMTEC
Consulting Engineers and Scientists

LOGGED: R.F.
CHECKED: S.R.

ENV - BOREHOLE LOG 1055 KLONDIKE ROAD - 64153.85 - AUGUST 2021.GPJ GEMTEC 2018.GDT 21/9/21

RECORD OF BOREHOLE 21-3

CLIENT: Maple Leaf Custom Homes
PROJECT: 1055 Klondike Road- Phase Two ESA
JOB#: 64153.85
LOCATION: Refer to Borehole and Monitoring Well Location Plan, Figure A.1

SHEET: 1 OF 1
DATUM: CGVD28
BORING DATE: Aug 12 2021

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
		Ground Surface		78.56									
0		Grey GRAVEL and TOPSOIL		78.36									
		Brown SILTY SAND		0.20	1	SL	229				None		
					2	SL	203				None		
1													Backfilled with Auger Cuttings
2					3	SL	610		PHC F1-F4/VOCs, PAHs, M&I	Hex: 65 IBL: 1	None		
				76.43									
		End of Borehole		2.13									

GEMTEC
Consulting Engineers and Scientists

LOGGED: R.F.
CHECKED: S.R.

RECORD OF BOREHOLE 21-4

CLIENT: Maple Leaf Custom Homes
PROJECT: 1055 Klondike Road- Phase Two ESA
JOB#: 64153.85
LOCATION: Refer to Borehole and Monitoring Well Location Plan, Figure A.1

SHEET: 1 OF 1
DATUM: CGVD28
BORING DATE: Aug 12 2021

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
		Ground Surface		78.49									
0		Dark brown TOPSOIL		78.34									
		Brown SILTY SAND		0.15	1	SL	610		PHC F1-F4/VOCs, PAHs, M&I	Hex: 50 IBL: 1	None		Backfilled with Auger Cuttings
1													
2					2	SL	610			Hex: 50 IBL: 1	None		
				76.21									
		End of Borehole		2.29									

GEMTEC
Consulting Engineers and Scientists

LOGGED: R.F.
CHECKED: S.R.

APPENDIX C

Analytical Summary Tables

TABLE C1
SOIL ANALYTICAL RESULTS
Supplemental Phase Two ESA
1055 Klondike Road, Ottawa, Ontario

				Sample ID:	BH18-1 SA3	BH18-3 SA9	BH18-5 SA8	BH18-301 SA9	GS-N	GS-M
				Laboratory ID:	1812403-01	1812403-02	1812403-03	1812403-04	1831557-01	1831557-02
				Date Sampled (dd/mm/yyyy):	09/03/2018	09/03/2018	09/03/2018	09/03/2018	08/03/2018	08/03/2018
				Depth (mbgs):	1.52 - 2.29	6.10 - 6.71	6.10 - 6.79	5.33 - 5.94	N/A	N/A
Parameter	**Units**	**RDL**	**MECP Table 9 SCS[1]**							
General Inorganics										
Sodium Adsorption Rate	N/A	N/A	5		NA	NA	NA	NA	NA	NA
Electrical Conductivity	uS/cm	0.005	0.7		NA	NA	NA	NA	NA	NA
Cyanide, free	ug/g dry	0.04	0.051		NA	NA	NA	NA	NA	NA
pH	pH Units	N/A	NS		NA	NA	NA	NA	NA	NA
% Soilds	% by Wt.	0.1	NS		81.8	66.1	72.8	64.0	88	84.1
Metals										
Antimony	ug/g dry	0.8	1.3		NA	NA	NA	NA	<1.0	<1.0
Arsenic	ug/g dry	1	18		NA	NA	NA	NA	2.4	<1.0
Barium	ug/g dry	2.0	220		NA	NA	NA	NA	55.5	41.4
Beryllium	ug/g dry	0.4	2.5		NA	NA	NA	NA	<0.5	<0.5
Boron	ug/g dry	5	36		NA	NA	NA	NA	<5.0	<5.0
Boron (Hot Water Soluble)	ug/g dry	0.10	1.5		NA	NA	NA	NA	NA	NA
Cadmium	ug/g dry	0.5	1.2		NA	NA	NA	NA	<0.5	<0.5
Chromium	ug/g dry	5	70		NA	NA	NA	NA	19	16.3
Cobalt	ug/g dry	0.5	22		NA	NA	NA	NA	4.7	4.1
Copper	ug/g dry	1.0	92		NA	NA	NA	NA	17	8.5
Lead	ug/g dry	1	120		NA	NA	NA	NA	95.7	19.5
Molybdenum	ug/g dry	0.5	2		NA	NA	NA	NA	<1.0	<1.0
Nickel	ug/g dry	1	82		NA	NA	NA	NA	10.3	9.5
Selenium	ug/g dry	0.8	1.5		NA	NA	NA	NA	<1.0	<1.0
Silver	ug/g dry	0.5	0.5		NA	NA	NA	NA	<0.3	<0.3
Thallium	ug/g dry	0.5	1		NA	NA	NA	NA	<1.0	<1.0
Uranium	ug/g dry	0.50	2.5		NA	NA	NA	NA	<1.0	<1.0
Vanadium	ug/g dry	0.4	86		NA	NA	NA	NA	24.8	21.3
Zinc	ug/g dry	5	290		NA	NA	NA	NA	**439**	46.1
Chromium, Hexavalent	ug/g dry	0.2	0.66		NA	NA	NA	NA	NA	NA
Mercury	ug/g dry	0.1	0.27		NA	NA	NA	NA	NA	NA
Volatiles Organic Compounds										
Dichlorodifluoromethane	µg/g	0.05	0.05		ND (0.05)	NA	ND (0.05)	NA	NA	NA
Vinyl Chloride	ug/g	0.02	0.02		ND (0.02)	NA	ND (0.02)	NA	NA	NA
Bromomethane	ug/g	0.05	0.05		ND (0.05)	NA	ND (0.05)	NA	NA	NA
Trichlorofluoromethane	ug/g	0.05	0.25		ND (0.05)	NA	ND (0.05)	NA	NA	NA
Acetone	ug/g	0.50	0.5		ND (0.50)	NA	ND (0.50)	NA	NA	NA
1,1-Dichloroethylene	ug/g	0.05	0.05		ND (0.05)	NA	ND (0.05)	NA	NA	NA
Methylene Chloride	ug/g	0.05	0.05		ND (0.05)	NA	ND (0.05)	NA	NA	NA
Trans- 1,2-Dichloroethylene	ug/g	0.05	0.05		ND (0.05)	NA	ND (0.05)	NA	NA	NA
Methyl tert-butyl Ether	ug/g	0.05	0.05		NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	ug/g	0.02	0.05		ND (0.05)	NA	ND (0.05)	NA	NA	NA
Methyl Ethyl Ketone	ug/g	0.50	0.5		ND (0.50)	NA	ND (0.50)	NA	NA	NA
Cis- 1,2-Dichloroethylene	ug/g	0.02	0.05		ND (0.05)	NA	ND (0.05)	NA	NA	NA
Chloroform	ug/g	0.04	0.05		ND (0.05)	NA	ND (0.05)	NA	NA	NA
1,2-Dichloroethane	ug/g	0.03	0.05		ND (0.05)	NA	ND (0.05)	NA	NA	NA
1,1,1-Trichloroethane	ug/g	0.05	0.05		ND (0.05)	NA	ND (0.05)	NA	NA	NA
Carbon Tetrachloride	ug/g	0.05	0.05		ND (0.05)	NA	ND (0.05)	NA	NA	NA
Benzene	ug/g	0.02	0.02		ND (0.02)	NA	ND (0.02)	NA	<0.02	<0.02
1,2-Dichloropropane	ug/g	0.03	0.05		ND (0.05)	NA	ND (0.05)	NA	NA	NA
Trichloroethylene	ug/g	0.03	0.05		ND (0.05)	NA	ND (0.05)	NA	NA	NA
Bromodichloromethane	ug/g	0.05	0.05		ND (0.05)	NA	ND (0.05)	NA	NA	NA
Methyl Isobutyl Ketone	ug/g	0.50	0.5		ND (0.50)	NA	ND (0.50)	NA	NA	NA
1,1,2-Trichloroethane	ug/g	0.04	0.05		ND (0.05)	NA	ND (0.05)	NA	NA	NA
Toluene	ug/g	0.05	0.2		ND (0.05)	NA	ND (0.05)	NA	<0.05	<0.05
Dibromochloromethane	ug/g	0.05	0.05		ND (0.05)	NA	ND (0.05)	NA	NA	NA
Ethylene Dibromide	ug/g	0.04	0.05		ND (0.05)	NA	ND (0.05)	NA	NA	NA
Tetrachloroethylene	ug/g	0.05	0.05		ND (0.05)	NA	ND (0.05)	NA	NA	NA
1,1,1,2-Tetrachloroethane	ug/g	0.04	0.05		ND (0.05)	NA	ND (0.05)	NA	NA	NA
Chlorobenzene	ug/g	0.05	0.05		ND (0.05)	NA	ND (0.05)	NA	NA	NA
Ethylbenzene	ug/g	0.05	0.05		ND (0.05)	NA	ND (0.05)	NA	<0.05	<0.05
m & p-Xylene	ug/g	0.05	NS		ND (0.05)	NA	ND (0.05)	NA	<0.05	<0.05
Bromoform	ug/g	0.05	0.05		ND (0.05)	NA	ND (0.05)	NA	NA	NA
Styrene	ug/g	0.05	0.05		ND (0.05)	NA	ND (0.05)	NA	NA	NA
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05		ND (0.05)	NA	ND (0.05)	NA	NA	NA
o-Xylene	ug/g	0.05	NS		ND (0.05)	NA	ND (0.05)	NA	NA	NA
1,3-Dichlorobenzene	ug/g	0.05	0.05		ND (0.05)	NA	ND (0.05)	NA	NA	NA
1,4-Dichlorobenzene	ug/g	0.05	0.05		ND (0.05)	NA	ND (0.05)	NA	NA	NA
1,2-Dichlorobenzene	ug/g	0.05	0.05		ND (0.05)	NA	ND (0.05)	NA	NA	NA
Xylenes (Total)	ug/g	0.05	0.05		ND (0.05)	NA	ND (0.05)	NA	<0.05	<0.05
1,3-Dichloropropene (Cis + Trans)	µg/g	0.04	0.05		ND (0.05)	NA	ND (0.05)	NA	NA	NA
n-Hexane	µg/g	0.05	0.05		ND (0.05)	NA	ND (0.05)	NA	NA	NA
Toluene-d8	% Recoveŋ	1	NS		NA	ND (0.05)	NA	ND (0.05)	101	107
4-Bromofluorobenzene	% Recoveŋ	1	NS		NA	NA	NA	NA	NA	NA
Petroleum Hydrocarbons										
F1 (C6 - C10)	µg/g	5	NS		ND (7)	ND (7)	ND (7)	ND (7)	<7	<7
F1 (C6 to C10) minus BTEX	µg/g	5	25		NA	NA	NA	NA	NA	NA
Toluene-d8	% Recoveŋ	1	NS		NA	NA	NA	NA	NA	NA
F2 (C10 to C16)	µg/g	10	10		ND (4)	ND (4)	ND (4)	ND (4)	<4	<4
F2 (C10 to C16) minus Naphthalene	µg/g	10	NS		NA				NA	NA
F3 (C16 to C34)	µg/g	50	240		ND (8)	ND (8)	ND (8)	ND (8)	<8	<8
F3 (C16 to C34) minus PAHs	µg/g	50	NS		NA	NA	NA	NA	NA	NA
F4 (C34 to C50)	µg/g	50	120		ND (6)	ND (6)	ND (6)	ND (6)	<6	<6
Gravimetric Heavy Hydrocarbons	µg/g	50	120		NA	NA	NA	NA	NA	NA
Moisture Content	%	0.1	NS		NA	NA	NA	NA	NA	NA
Terphenyl	%	1	NS		NA	NA	NA	NA	NA	NA
Polycyclic Aromatic Hydrocarbons										
Naphthalene	µg/g	0.05	0.09		NA	NA	NA	NA	<0.01	<0.01
Acenaphthylene	µg/g	0.05	0.093		NA	NA	NA	NA	<0.02	<0.02
Acenaphthene	µg/g	0.05	0.072		NA	NA	NA	NA	<0.02	<0.02
Fluorene	µg/g	0.05	0.19		NA	NA	NA	NA	<0.02	<0.02
Phenanthrene	µg/g	0.05	0.69		NA	NA	NA	NA	0.02	<0.02
Anthracene	µg/g	0.05	0.22		NA	NA	NA	NA	<0.02	<0.02
Fluoranthene	µg/g	0.05	0.69		NA	NA	NA	NA	0.04	<0.02
Pyrene	µg/g	0.05	1		NA	NA	NA	NA	0.03	<0.02
Benz(a)anthracene	µg/g	0.05	0.36		NA	NA	NA	NA	<0.02	<0.02
Chrysene	µg/g	0.05	2.8		NA	NA	NA	NA	0.03	<0.02
Benzo(b)fluoranthene	µg/g	0.05	0.47		NA	NA	NA	NA	<0.02	<0.02
Benzo(k)fluoranthene	µg/g	0.05	0.48		NA	NA	NA	NA	<0.02	<0.02
Benzo(a)pyrene	µg/g	0.05	0.3		NA	NA	NA	NA	0.03	<0.02
Indeno(1,2,3-cd)pyrene	µg/g	0.05	0.23		NA	NA	NA	NA	<0.02	<0.02
Dibenz(a,h)anthracene	µg/g	0.05	0.1		NA	NA	NA	NA	<0.02	<0.02
Benzo(g,h,i)perylene	µg/g	0.05	0.68		NA	NA	NA	NA	0.02	<0.02
1 and 2 Methlynaphthalene	µg/g	0.05	3.1		NA	NA	NA	NA	<0.02	<0.02
Naphthalene-d8	%	1	NS		NA	NA	NA	NA	NA	NA
Acridine-d9	%	1	NS		NA	NA	NA	NA	NA	NA
Terphenyl-d14	%	1	NS		NA	NA	NA	NA	70.4	70.9
Moisture Content	%	0.1	NS		NA	NA	NA	NA	NA	NA

Notes:
'RDL': Method Detection Limit
'N/A' : Not Applicable
'NA': Not Analyzed
'ND' : Non Detect
'NS ' : No Standard / Guideline Established
'mbgs' : metres below ground surface
1- MECP Table 9 SCS: Generic Site Condition Standards for Use within 30 m of a Water Body in a Non-Potable Ground Water Condition, residential/parkland/institutional, industrial/commercial/community (RPI/ICC) land use, coarse textured soils (MECP, 2011).

Bolded Exceeds MECP Table 9 SCS

TABLE C1
SOIL ANALYTICAL RESULTS
Supplemental Phase Two ESA
1055 Klondike Road, Ottawa, Ontario

			Sample ID:	BH21-1 SA-1	BH21-2 SA-2	BH21-2 SA-102	BH21-3 SA-3	BH21-4 SA-1
			Laboratory ID:	2851686	2851690	2851691	2851692	2851693
			Date Sampled (dd/mm/yyyy):	16/02/2021	08/12/2021	08/12/2021	08/12/2021	08/12/2021
			Depth (mbgs):	0 - 0.20	0.53 - 0.86	0.53 - 0.86	1.52 - 2.13	0.15 - 0.76
Parameter	**Units**	**RDL**	**MECP Table 9 SCS[1]**					
General Inorganics								
Sodium Adsorption Rate	N/A	N/A	5	NA	3.16	3.37	0.282	0.119
Electrical Conductivity	uS/cm	0.005	0.7	NA	0.282	0.208	0.058	0.068
Cyanide, free	ug/g dry	0.04	0.051	NA	<0.040	<0.040	<0.040	<0.040
pH	pH Units	N/A	NS	NA	7.62	7.54	7.43	7.54
% Soilds	% by Wt.	0.1	NS	NA	NA	NA	NA	NA
Metals								
Antimony	ug/g dry	0.8	1.3	<0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	ug/g dry	1	18	3	1	1	1	1
Barium	ug/g dry	2.0	220	87.1	53.4	59.2	27.8	40.3
Beryllium	ug/g dry	0.4	2.5	<0.4	<0.4	<0.4	<0.4	<0.4
Boron	ug/g dry	5	36	<5	<5	<5	<5	<5
Boron (Hot Water Soluble)	ug/g dry	0.10	1.5	NA	0.13	0.13	<0.10	0.51
Cadmium	ug/g dry	0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	ug/g dry	5	70	22	25	24	13	23
Cobalt	ug/g dry	0.5	22	5.3	6.1	6.4	4.2	6.1
Copper	ug/g dry	1.0	92	12.8	13.6	13.2	7.3	11
Lead	ug/g dry	1	120	37	4	3	2	3
Molybdenum	ug/g dry	0.5	2	0.7	0.6	<0.5	<0.5	<0.5
Nickel	ug/g dry	1	82	10	14	14	8	12
Selenium	ug/g dry	0.8	1.5	<0.8	<0.8	<0.8	<0.8	<0.8
Silver	ug/g dry	0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Thallium	ug/g dry	0.5	1	<0.5	<0.5	<0.5	<0.5	<0.5
Uranium	ug/g dry	0.50	2.5	<0.50	0.53	<0.50	<0.50	<0.50
Vanadium	ug/g dry	0.4	86	32.3	31.1	32	21.7	29.7
Zinc	ug/g dry	5	290	112	26	25	17	26
Chromium, Hexavalent	ug/g dry	0.2	0.66	NA	<0.2	<0.2	<0.2	<0.2
Mercury	ug/g dry	0.1	0.27		<0.10	<0.10	<0.10	<0.10
Volatiles Organic Compounds								
Dichlorodifluoromethane	µg/g	0.05	0.05	NA	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	ug/g	0.02	0.02	NA	<0.02	<0.02	<0.02	<0.02
Bromomethane	ug/g	0.05	0.05	NA	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	ug/g	0.05	0.25	NA	<0.05	<0.05	<0.05	<0.05
Acetone	ug/g	0.50	0.5	NA	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethylene	ug/g	0.05	0.05	NA	<0.05	<0.05	<0.05	<0.05
Methylene Chloride	ug/g	0.05	0.05	NA	<0.05	<0.05	<0.05	<0.05
Trans- 1,2-Dichloroethylene	ug/g	0.05	0.05	NA	<0.05	<0.05	<0.05	<0.05
Methyl tert-butyl Ether	ug/g	0.05	0.05	NA	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethane	ug/g	0.02	0.05	NA	<0.02	<0.02	<0.02	<0.02
Methyl Ethyl Ketone	ug/g	0.50	0.5	NA	<0.50	<0.50	<0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g	0.02	0.05	NA	<0.02	<0.02	<0.02	<0.02
Chloroform	ug/g	0.04	0.05	NA	<0.04	<0.04	<0.04	<0.04
1,2-Dichloroethane	ug/g	0.03	0.05	NA	<0.03	<0.03	<0.03	<0.03
1,1,1-Trichloroethane	ug/g	0.05	0.05	NA	<0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	ug/g	0.05	0.05	NA	<0.05	<0.05	<0.05	<0.05
Benzene	ug/g	0.02	0.02	NA	<0.02	<0.02	<0.02	<0.02
1,2-Dichloropropane	ug/g	0.03	0.05	NA	<0.03	<0.03	<0.03	<0.03
Trichloroethylene	ug/g	0.03	0.05	NA	<0.03	<0.03	<0.03	<0.03
Bromodichloromethane	ug/g	0.05	0.05	NA	<0.05	<0.05	<0.05	<0.05
Methyl Isobutyl Ketone	ug/g	0.50	0.5	NA	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	ug/g	0.04	0.05	NA	<0.04	<0.04	<0.04	<0.04
Toluene	ug/g	0.05	0.2	NA	<0.05	<0.05	<0.05	<0.05
Dibromochloromethane	ug/g	0.05	0.05	NA	<0.05	<0.05	<0.05	<0.05
Ethylene Dibromide	ug/g	0.04	0.05	NA	<0.04	<0.04	<0.04	<0.04
Tetrachloroethylene	ug/g	0.05	0.05	NA	<0.05	<0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	ug/g	0.04	0.05	NA	<0.04	<0.04	<0.04	<0.04
Chlorobenzene	ug/g	0.05	0.05	NA	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	ug/g	0.05	0.05	NA	<0.05	<0.05	<0.05	<0.05
m & p-Xylene	ug/g	0.05	NS	NA	<0.05	<0.05	<0.05	<0.05
Bromoform	ug/g	0.05	0.05	NA	<0.05	<0.05	<0.05	<0.05
Styrene	ug/g	0.05	0.05	NA	<0.05	<0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.05	NA	<0.05	<0.05	<0.05	<0.05
o-Xylene	ug/g	0.05	NS	NA	<0.05	<0.05	<0.05	<0.05
1,3-Dichlorobenzene	ug/g	0.05	0.05	NA	<0.05	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	ug/g	0.05	0.05	NA	<0.05	<0.05	<0.05	<0.05
1,2-Dichlorobenzene	ug/g	0.05	0.05	NA	<0.05	<0.05	<0.05	<0.05
Xylenes (Total)	ug/g	0.05	0.05	NA	<0.05	<0.05	<0.05	<0.05
1,3-Dichloropropene (Cis + Trans)	µg/g	0.04	0.05	NA	<0.04	<0.04	<0.04	<0.04
n-Hexane	µg/g	0.05	0.05	NA	<0.05	<0.05	<0.05	<0.05
Toluene-d8	% Recovery	1	NS	NA	109	116	119	122
4-Bromofluorobenzene	% Recovery	1	NS	NA	102	106	100	99
Petroleum Hydrocarbons								
F1 (C6 - C10)	µg/g	5	NS	NA	<5	<5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	5	25	NA	<5	<5	<5	<5
Toluene-d8	% Recovery	1	NS	NA	71	76	102	96
F2 (C10 to C16)	µg/g	10	10	NA	<10	<10	<10	<10
F2 (C10 to C16) minus Naphthalene	µg/g	10	NS	NA	<10	<10	<10	<10
F3 (C16 to C34)	µg/g	50	240	NA	<50	<50	<50	<50
F3 (C16 to C34) minus PAHs	µg/g	50	NS	NA	<50	<50	<50	<50
F4 (C34 to C50)	µg/g	50	120	NA	<50	<50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g	50	120	NA	NA	NA	NA	NA
Moisture Content	%	0.1	NS	NA	17.8	18.7	8.5	12.2
Terphenyl	%	1	NS	NA	101	107	100	95
Polycyclic Aromatic Hydrocarbons								
Naphthalene	µg/g	0.05	0.09	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthylene	µg/g	0.05	0.093	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthene	µg/g	0.05	0.072	<0.05	<0.05	<0.05	<0.05	<0.05
Fluorene	µg/g	0.05	0.19	<0.05	<0.05	<0.05	<0.05	<0.05
Phenanthrene	µg/g	0.05	0.69	<0.05	<0.05	<0.05	<0.05	<0.05
Anthracene	µg/g	0.05	0.22	<0.05	<0.05	<0.05	<0.05	<0.05
Fluoranthene	µg/g	0.05	0.69	<0.05	<0.05	<0.05	<0.05	<0.05
Pyrene	µg/g	0.05	1	0.05	<0.05	<0.05	<0.05	<0.05
Benz(a)anthracene	µg/g	0.05	0.36	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	µg/g	0.05	2.8	0.06	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg/g	0.05	0.47	0.06	<0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	µg/g	0.05	0.48	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	µg/g	0.05	0.3	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.05	0.23	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenz(a,h)anthracene	µg/g	0.05	0.1	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(g,h,i)perylene	µg/g	0.05	0.68	<0.05	<0.05	<0.05	<0.05	<0.05
1 and 2 Methlynaphthalene	µg/g	0.05	3.1	<0.05	<0.05	<0.05	<0.05	<0.05
Naphthalene-d8	%	1	NS	111	89	85	89	89
Acridine-d9	%	1	NS	98	85	96	85	85
Terphenyl-d14	%	1	NS	86	84	85	96	96
Moisture Content	%	0.1	NS	5.9	17.8	18.7	8.5	12.2

Notes:
'RDL': Method Detection Limit
'N/A' : Not Applicable
'NA': Not Analyzed
'ND' : Non Detect
'NS ' : No Standard / Guideline Established
'mbgs' : metres below ground surface
1- MECP Table 9 SCS: Generic Site Condition Standards for Use within 30 m of a Water Body in a Non-Potable Ground Water Condition, residential/parkland/institutional, industrial/commercial/community (RPI/ICC) land use, coarse textured soils (MECP, 2011).

Bolded Exceeds MECP Table 9 SCS

TABLE C2
TOXICITY CHARACTERISTIC LEACHING PROCEDURE ANALYTICAL RESULTS
Supplemental Phase Two ESA
1055 Klondike Road, Ottawa, Ontario

Parameter	Units	RDL	O.Reg 347/558 Schedule 4[1]	Sample ID: TCLP-01 Laboratory ID: 2851683 Date Sampled (dd/mm/yyyy): 08/12/2021	Sample ID: TCLP-02 Laboratory ID: 2851685 Date Sampled (dd/mm/yyyy): 08/12/2021
Metals					
Arsenic Leachate	mg/L	0.010	2.5	<0.010	<0.010
Barium Leachate	mg/L	0.010	100	0.384	0.549
Boron Leachate	mg/L	0.050	500	0.052	<0.050
Cadmium Leachate	mg/L	0.010	0.5	<0.010	<0.010
Chromium Leachate	mg/L	0.050	5	<0.050	<0.050
Lead Leachate	mg/L	0.010	5	0.02	0.012
Mercury Leachate	mg/L	0.01	0.1	<0.01	<0.01
Selenium Leachate	mg/L	0.010	1	<0.010	<0.010
Silver Leachate	mg/L	0.010	5	<0.010	<0.010
Uranium Leachate	mg/L	0.050	10	<0.050	<0.050
Fluoride Leachate	mg/L	0.10	150	<0.10	0.19
Cyanide Leachate	mg/L	0.05	20	<0.05	<0.05
(Nitrate + Nitrite) as N Leachate	mg/L	0.70	1000	<0.70	<0.70

Notes:
'MDL': Method Detection Limit
'ND' : Non Detect
'NS ' : No Standard / Guideline Established
1 - MECP O.Reg. 558/347 Schedule 4, Leachate Quality Criteria, to evaluate waste classification (hazardous or non-hazardous waste) for on-site soils (MECP, 2000).

Bolded Exceeds MECP O.Reg 558/347 Schedule 4

TABLE C3
GROUNDWATER ANALYTICAL RESULTS
Supplemental Phase Two ESA
1055 Klondike Road, Ottawa, Ontario

			Sample ID:	MW18-3 SA1	MW18-3 GW3	MW18-5 SA1	MW19-2	MW21-1 SA-1	MW19-2 SA-1	Trip Blank
			Laboratory ID:	1820545-01	1831559-01	1820545-02	1915143-01	2876800	2876834	2877004
			Date Sampled (dd/mm/yyyy):	17/05/2018	17/05/2018	17/05/2018	08/04/2019	19/08/2021	19/08/2021	19/08/2021
			Screen Interval (mbgs):	1.52 - 3.05	3.05 - 4.57	2.44 - 3.05	5.48- 8.53	3.05 - 6.10	5.48 - 8.54	N/A
Parameter	**Units**	**RDL**	**MECP Table 9 SCS[1]**							
General Inorganics										
Dissolved Sodium	µg/L	50	NS	NA	NA	NA	NA	NA	29,900	NA
Electrical Conductivity	uS/cm	2	NS	NA	NA	NA	NA	NA	790	NA
pH	pH Units	NA	NS	NA	NA	NA	NA	NA	7.88	NA
Anions										
Chloride	µg/L	100	1,800,000	NA	NA	NA	NA	NA	33,000	NA
Metals										
Dissolved Antimony	µg/L	1.0	16,000	NA	NA	NA	NA	<1.0	<1.0	NA
Dissolved Arsenic	µg/L	1.0	1,500	NA	NA	NA	NA	<1.0	<1.0	NA
Dissolved Barium	µg/L	2.0	23,000	NA	NA	NA	NA	70.8	47.7	NA
Dissolved Beryllium	µg/L	0.5	53	NA	NA	NA	NA	<0.5	<0.50	NA
Dissolved Boron	µg/L	10.0	36,000	NA	NA	NA	NA	36.5	46.3	NA
Dissolved Cadmium	µg/L	0.20	2.1	NA	NA	NA	NA	<0.20	<0.20	NA
Dissolved Chromium	µg/L	2.0	640	NA	NA	NA	NA	<2.0	2.2	NA
Dissolved Cobalt	µg/L	0.50	52	NA	NA	NA	NA	<0.50	<0.50	NA
Dissolved Copper	µg/L	1.0	69	NA	NA	NA	NA	3.0	3.0	NA
Dissolved Lead	µg/L	0.50	20	NA	NA	NA	NA	<0.50	<0.50	NA
Dissolved Molybdenum	µg/L	0.50	7,300	NA	NA	NA	NA	11.7	3.77	NA
Dissolved Nickel	µg/L	3.0	390	NA	NA	NA	NA	<3.0	11.7	NA
Dissolved Selenium	µg/L	1.0	50	NA	NA	NA	NA	<1.0	<1.0	NA
Dissolved Silver	µg/L	0.20	1.2	NA	NA	NA	NA	<0.20	<0.20	NA
Dissolved Thallium	µg/L	0.30	400	NA	NA	NA	NA	<0.30	<0.30	NA
Dissolved Uranium	µg/L	0.50	330	NA	NA	NA	NA	3.12	4.36	NA
Dissolved Vanadium	µg/L	0.40	200	NA	NA	NA	NA	6.83	5.11	NA
Dissolved Zinc	µg/L	5.0	890	NA	NA	NA	NA	11.2	<5.0	NA
Mercury	µg/L	0.02	0.29	NA	NA	NA	NA	<0.02	<0.02	NA
Chromium VI	µg/L	2	110	NA	NA	NA	NA	<2	<2	NA
Volatiles										
Dichlorodifluoromethane	µg/L	0.20	3500	N/A	N/A	ND (1.0)	N/A	NA	<0.20	<0.20
Vinyl Chloride	µg/L	0.17	0.5	N/A	N/A	ND (0.5)	N/A	NA	<0.17	<0.17
Bromomethane	µg/L	0.20	5.6	N/A	N/A	ND (0.5)	N/A	NA	<0.20	<0.20
Trichlorofluoromethane	µg/L	0.40	2,000	N/A	N/A	ND (1.0)	N/A	NA	<0.40	<0.40
Acetone	µg/L	1.0	100,000	N/A	N/A	ND (5.0)	N/A	NA	<1.0	<1.0
1,1-Dichloroethylene	µg/L	0.30	1.6	N/A	N/A	ND (0.5)	N/A	NA	<0.30	<0.30
Methylene Chloride	µg/L	0.30	610	N/A	N/A	ND (5.0)	N/A	NA	<0.30	<0.30
trans- 1,2-Dichloroethylene	µg/L	0.20	1.6	N/A	N/A	ND (0.5)	N/A	NA	<0.20	<0.20
Methyl tert-butyl ether	µg/L	0.20	190	N/A	N/A	ND (2.0)	N/A	NA	<0.20	<0.20
1,1-Dichloroethane	µg/L	0.30	320	N/A	N/A	ND (0.5)	N/A	NA	<0.30	<0.30
Methyl Ethyl Ketone	µg/L	1.0	470,000	N/A	N/A	ND (5.0)	N/A	NA	<1.0	<1.0
cis- 1,2-Dichloroethylene	µg/L	0.20	1.6	N/A	N/A	ND (0.5)	N/A	NA	<0.20	<0.20
Chloroform	µg/L	0.20	2.4	N/A	N/A	ND (0.5)	N/A	NA	<0.20	<0.20
1,2-Dichloroethane	µg/L	0.20	1.6	N/A	N/A	ND (0.5)	N/A	NA	<0.20	<0.20
1,1,1-Trichloroethane	µg/L	0.30	640	N/A	N/A	ND (0.5)	N/A	NA	<0.30	<0.30
Carbon Tetrachloride	µg/L	0.20	0.79	N/A	N/A	ND (0.2)	N/A	NA	<0.20	<0.20
Benzene	µg/L	0.20	44	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	NA	<0.20	<0.20
1,2-Dichloropropane	µg/L	0.20	16	N/A	N/A	ND (0.5)	N/A	NA	<0.20	<0.20
Trichloroethylene	µg/L	0.20	1.6	N/A	N/A	ND (0.5)	N/A	NA	<0.20	<0.20
Bromodichloromethane	µg/L	0.20	67,000	N/A	N/A	ND (0.5)	N/A	NA	<0.20	<0.20
Methyl Isobutyl Ketone	µg/L	1.0	140,000	N/A	N/A	ND (5.0)	N/A	NA	<1.0	<1.0
1,1,2-Trichloroethane	µg/L	0.20	4.7	N/A	N/A	ND (0.5)	N/A	NA	<0.20	<0.20
Toluene	µg/L	0.20	14,000	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	NA	<0.20	<0.20
Dibromochloromethane	µg/L	0.10	65,000	N/A	N/A	ND (0.5)	N/A	NA	<0.10	<0.10
Ethylene Dibromide	µg/L	0.10	0.25	N/A	N/A	ND (0.2)	N/A	NA	<0.10	<0.10
Tetrachloroethylene	µg/L	0.20	1.6	N/A	N/A	ND (0.5)	N/A	NA	<0.20	<0.20
1,1,1,2-Tetrachloroethane	µg/L	0.10	3.3	N/A	N/A	ND (0.5)	N/A	NA	<0.10	<0.10
Chlorobenzene	µg/L	0.10	500	N/A	N/A	ND (0.5)	N/A	NA	<0.10	<0.10
Ethylbenzene	µg/L	0.10	1800	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	NA	<0.10	<0.10
m & p-Xylene	µg/L	0.20	NS	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	NA	<0.20	<0.20
Bromoform	µg/L	0.10	380	N/A	N/A	ND (0.5)	N/A	NA	<0.10	<0.10
Styrene	µg/L	0.10	1300	N/A	N/A	ND (0.5)	N/A	NA	<0.10	<0.10
1,1,2,2-Tetrachloroethane	µg/L	0.10	3.2	N/A	N/A	ND (0.5)	N/A	NA	<0.10	<0.10
o-Xylene	µg/L	0.10	NS	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	NA	<0.10	<0.10
1,3-Dichlorobenzene	µg/L	0.10	7,600	N/A	N/A	ND (0.5)	N/A	NA	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	0.10	8	N/A	N/A	ND (0.5)	N/A	NA	<0.10	<0.10
1,2-Dichlorobenzene	µg/L	0.10	4,600	N/A	N/A	ND (0.5)	N/A	NA	<0.10	<0.10
1,3-Dichloropropene	µg/L	0.30	5.2	N/A	N/A	ND (0.5)	N/A	NA	<0.30	<0.30
Xylenes (Total)	µg/L	0.20	3,300	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	NA	<0.20	<0.20
n-Hexane	µg/L	0.20	51	N/A	N/A	ND (1.0)	N/A	NA	<0.20	<0.20
Toluene-d8	% Recovery	1	NS	NA	NA	NA	NA	NA	101	108
4-Bromofluorobenzene	% Recovery	1	NS	NA	NA	NA	NA	NA	92	96
Petroleum Hydrocarbons										
F1 (C6-C10)	µg/L	25	420	ND (25)	ND (25)	ND (25)	ND (25)	NA	<25	<25
F1 (C6 to C10) minus BTEX	µg/L	25	420	NA	NA	NA	NA	NA	<25	<25
Toluene-d8	% Recovery	1.00	NS	NA	NA	NA	NA	NA	106	98.2
F2 (C10 to C16)	µg/L	100	150	ND (100)	ND (100)	ND (100)	ND (100)	NA	<100	<100
F2 (C10 to C16) minus Naphthalene	µg/L	100	150	NA	NA	NA	NA	NA	<100	NA
F3 (C16 to C34)	µg/L	100	500	334	ND (100)	**548**	ND (100)	NA	<100	<100
F3 (C16 to C34) minus PAHs	µg/L	100	500	NA	NA	NA	NA	NA	<100	NA
F4 (C34 to C50)	µg/L	100	500	ND (100)	ND (100)	113	ND (100)	NA	<100	<100
Gravimetric Heavy Hydrocarbons	µg/L	500	NS	NA	NA	NA	NA	NA	NA	500
Terphenyl	% Recovery		NS	NA	NA	NA	NA	NA	88	110
Polycyclic Aromatic Hydrocarbons										
Naphthalene	µg/L	0.20	1,400	NA	NA	NA	NA	<0.20	<0.20	NA
Acenaphthylene	µg/L	0.20	1.4	NA	NA	NA	NA	<0.20	<0.20	NA
Acenaphthene	µg/L	0.20	600	NA	NA	NA	NA	<0.20	<0.20	NA
Fluorene	µg/L	0.20	290	NA	NA	NA	NA	<0.20	<0.20	NA
Phenanthrene	µg/L	0.10	380	NA	NA	NA	NA	<0.10	<0.10	NA
Anthracene	µg/L	0.10	1	NA	NA	NA	NA	<0.10	<0.10	NA
Fluoranthene	µg/L	0.20	73	NA	NA	NA	NA	<0.20	<0.20	NA
Pyrene	µg/L	0.20	5.7	NA	NA	NA	NA	<0.20	<0.20	NA
Benzo(a)anthracene	µg/L	0.20	1.8	NA	NA	NA	NA	<0.20	<0.20	NA
Chrysene	µg/L	0.10	0.7	NA	NA	NA	NA	<0.10	<0.10	NA
Benzo(b)fluoranthene	µg/L	0.10	0.75	NA	NA	NA	NA	<0.10	<0.10	NA
Benzo(k)fluoranthene	µg/L	0.10	0.4	NA	NA	NA	NA	<0.10	<0.10	NA
Benzo(a)pyrene	µg/L	0.01	0.81	NA	NA	NA	NA	<0.01	<0.01	NA
Indeno(1,2,3-cd)pyrene	µg/L	0.20	0.2	NA	NA	NA	NA	<0.20	<0.20	NA
Dibenz(a,h)anthracene	µg/L	0.20	0.4	NA	NA	NA	NA	<0.20	<0.20	NA
Benzo(g,h,i)perylene	µg/L	0.20	0.2	NA	NA	NA	NA	<0.20	<0.20	NA
2-and 1-methyl Naphthalene	µg/L	0.20	1500	NA	NA	NA	NA	<0.20	<0.20	NA
Naphthalene-d8	%	1	NS	NA	NA	NA	NA	89	102	NA
Acridine-d9	%	1	NS	NA	NA	NA	NA	88	88	NA
Terphenyl-d14	%	1	NS					85	96	NA

Notes:
'MDL': Reported Detection Limit
'NA' : Not Analyzed
'ND' : Non Detect
'NS ' : No Standard / Guideline Established
'mbgs' : metres below ground surface
1- MECP Table 9 SCS: Generic Site Condition Standards for Use within 30 m of a Water Body in a Non-Potable Ground Water Condition, all types of property use, groundwater (MECP, 2011).

Bolded	Exceeds MECP Table 9 SCS

APPENDIX D

Laboratory Analytical Reports

AGAT Laboratories

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CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS
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ATTENTION TO: Rhian Fox
PROJECT: 64153.85
AGAT WORK ORDER: 21T790730
TRACE ORGANICS REVIEWED BY: Neli Popnikolova, Senior Chemist
WATER ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer
DATE REPORTED: Aug 26, 2021
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

Disclaimer:

- *All work conducted herein has been done using accepted standard protocols, and generally accepted practices and methods. AGAT test methods may incorporate modifications from the specified reference methods to improve performance.*
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Certificate of Analysis

AGAT WORK ORDER: 21T790730

PROJECT: 64153.85

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Rhian Fox

SAMPLING SITE:1055 Klondike Road

SAMPLED BY:Rkian Fox

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

DATE RECEIVED: 2021-08-19

DATE REPORTED: 2021-08-26

				SAMPLE DESCRIPTION:	MW21-1 SA-1	MW19-2 SA-1
				SAMPLE TYPE:	Water	Water
				DATE SAMPLED:	2021-08-19 11:00	2021-08-19 11:00
Parameter	**Unit**	**G / S**	**RDL**		**2876800**	**2876834**
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
Benzo(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
Sediment					No	No
Surrogate	**Unit**	**Acceptable Limits**				
Naphthalene-d8	%	50-140			89	102
Acridine-d9	%	50-140			88	88
Terphenyl-d14	%	50-140			85	96

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.

2876800-2876834 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.
2- and 1-Methyl Naphthalene is a calculated parameter. The calculated value is the sum of 2-Methyl Naphthalene and 1-Methyl Naphthalene. The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.
Sediment parameter is comment only based on visual inspection of the sample prior to extraction and is not an accredited test.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: N Popnikolof

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AGAT WORK ORDER: 21T790730

PROJECT: 64153.85

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Rhian Fox

SAMPLING SITE:1055 Klondike Road

SAMPLED BY:Rkian Fox

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

DATE RECEIVED: 2021-08-19

DATE REPORTED: 2021-08-26

		SAMPLE DESCRIPTION:		**Trip Blank**
		SAMPLE TYPE:		**Water**
		DATE SAMPLED:		**2021-08-19 11:00**
Parameter	**Unit**	**G / S**	**RDL**	**2877004**
F1 (C6 - 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	NA
Sediment				No
Surrogate	**Unit**	**Acceptable Limits**		
Toluene-d8	% Recovery	50-140		98.2
Terphenyl	%	60-140		110

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.

2877004 The C6-C10 fraction is calculated using Toluene response factor.
C6–C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX. The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.
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 contribution.
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.
Sediment parameter is comment only based on visual inspection of the sample prior to extraction and is not an accredited test.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: NPopnikolof

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AGAT WORK ORDER: 21T790730

PROJECT: 64153.85

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Rhian Fox

SAMPLING SITE:1055 Klondike Road

SAMPLED BY:Rkian Fox

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

DATE RECEIVED: 2021-08-19

DATE REPORTED: 2021-08-26

				SAMPLE DESCRIPTION:	MW19-2 SA-1
				SAMPLE TYPE:	Water
				DATE SAMPLED:	2021-08-19 11:00
Parameter	**Unit**	**G / S**	**RDL**	**2876834**	
F1 (C6-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	
F2 (C10 to C16) minus Naphthalene	µg/L		100	<100	
F3 (C16 to C34)	µg/L	500	100	<100	
F3 (C16 to C34) minus PAHs	µg/L		100	<100	
F4 (C34 to C50)	µg/L	500	100	<100	
Gravimetric Heavy Hydrocarbons	µg/L		500	NA	
Sediment				No	
Surrogate	**Unit**	**Acceptable Limits**			
Toluene-d8	% Recovery	50-140		106	
Terphenyl	% Recovery	60-140		88	

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.

2876834 The C6-C10 fraction is calculated using toluene response factor.
C6–C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX. The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.
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.
C>10 – C16 (F2- Naphthalene) is a calculated parameter. The calculated value is F2 - Naphthalene.
C>16 - C34 (F3-PAH) is a calculated parameter. The calculated value is F3-PAH (PAH: sum of Phenanthrene, Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Fluoranthene, Dibenzo(a,h)anthracene, Indeno(1,2,3-c,d)pyrene and Pyrene).
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
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.

Sediment parameter is comment only based on visual inspection of the sample prior to extraction and is not an accredited test.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: N Popnikolof

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AGAT WORK ORDER: 21T790730

PROJECT: 64153.85

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Rhian Fox

SAMPLING SITE:1055 Klondike Road

SAMPLED BY:Rkian Fox

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

DATE RECEIVED: 2021-08-19

DATE REPORTED: 2021-08-26

		SAMPLE DESCRIPTION:		MW19-2 SA-1	Trip Blank
		SAMPLE TYPE:		Water	Water
		DATE SAMPLED:		2021-08-19 11:00	2021-08-19 11:00
Parameter	Unit	G / S	RDL	2876834	2877004
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	<0.20	<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

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Certificate of Analysis

AGAT WORK ORDER: 21T790730

PROJECT: 64153.85

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Rhian Fox

SAMPLING SITE:1055 Klondike Road

SAMPLED BY:Rkian Fox

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

DATE RECEIVED: 2021-08-19

DATE REPORTED: 2021-08-26

				SAMPLE DESCRIPTION:	MW19-2 SA-1	Trip Blank
				SAMPLE TYPE:	Water	Water
				DATE SAMPLED:	2021-08-19 11:00	2021-08-19 11:00
Parameter	**Unit**	**G / S**	**RDL**		**2876834**	**2877004**
m & p-Xylene	µg/L		0.20		<0.20	<0.20
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
Xylenes (Total)	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			101	108
4-Bromofluorobenzene	% Recovery	50-140			92	96

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.

2876834-2877004 Xylenes total is a calculated parameter. The calculated value is the sum of m&p-Xylene and o-Xylene.
1,3-Dichloropropene total is a calculated parameter. The calculated value is the sum of Cis-1,3-Dichloropropene and Trans-1,3-Dichloropropene.
The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.

Analysis performed at AGAT Toronto (unless marked by *)

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AGAT WORK ORDER: 21T790730

PROJECT: 64153.85

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Rhian Fox

SAMPLING SITE:1055 Klondike Road

SAMPLED BY:Rkian Fox

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

DATE RECEIVED: 2021-08-19

DATE REPORTED: 2021-08-26

		SAMPLE DESCRIPTION:		MW21-1 SA-1
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2021-08-19 11:00
Parameter	Unit	G / S	RDL	2876800
Dissolved Antimony	µg/L	1.5	1.0	<1.0
Dissolved Arsenic	µg/L	13	1.0	<1.0
Dissolved Barium	µg/L	610	2.0	70.8
Dissolved Beryllium	µg/L	0.5	0.5	<0.5
Dissolved Boron	µg/L	1700	10.0	36.5
Dissolved Cadmium	µg/L	0.5	0.20	<0.20
Dissolved Chromium	µg/L	11	2.0	<2.0
Dissolved Cobalt	µg/L	3.8	0.50	<0.50
Dissolved Copper	µg/L	5	1.0	3.0
Dissolved Lead	µg/L	1.9	0.50	<0.50
Dissolved Molybdenum	µg/L	23	0.50	11.7
Dissolved Nickel	µg/L	14	3.0	<3.0
Dissolved Selenium	µg/L	5	1.0	<1.0
Dissolved Silver	µg/L	0.3	0.20	<0.20
Dissolved Thallium	µg/L	0.5	0.30	<0.30
Dissolved Uranium	µg/L	8.9	0.50	3.12
Dissolved Vanadium	µg/L	3.9	0.40	**6.83**
Dissolved Zinc	µg/L	160	5.0	11.2
Mercury	µg/L	0.1	0.02	<0.02
Chromium VI	µg/L	25	2	<2

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.

2876800 Metals analysis completed on a filtered sample.

Dissolved Vanadium data reported was confirmed by re-analysis.

Analysis performed at AGAT Toronto (unless marked by *)

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AGAT WORK ORDER: 21T790730

PROJECT: 64153.85

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Rhian Fox

SAMPLING SITE:1055 Klondike Road

SAMPLED BY:Rkian Fox

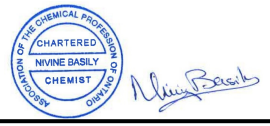
O. Reg. 153(511) - Metals & Inorganics (Water) (excl. CN)

DATE RECEIVED: 2021-08-19

DATE REPORTED: 2021-08-26

		SAMPLE DESCRIPTION:		MW19-2 SA-1
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2021-08-19 11:00
Parameter	Unit	G / S	RDL	2876834
Dissolved Antimony	µg/L	1.5	1.0	<1.0
Dissolved Arsenic	µg/L	13	1.0	<1.0
Dissolved Barium	µg/L	610	2.0	47.7
Dissolved Beryllium	µg/L	0.5	0.50	<0.50
Dissolved Boron	µg/L	1700	10.0	46.3
Dissolved Cadmium	µg/L	0.5	0.20	<0.20
Dissolved Chromium	µg/L	11	2.0	2.2
Dissolved Cobalt	µg/L	3.8	0.50	<0.50
Dissolved Copper	µg/L	5	1.0	3.0
Dissolved Lead	µg/L	1.9	0.50	<0.50
Dissolved Molybdenum	µg/L	23	0.50	3.77
Dissolved Nickel	µg/L	14	3.0	11.7
Dissolved Selenium	µg/L	5	1.0	<1.0
Dissolved Silver	µg/L	0.3	0.20	<0.20
Dissolved Thallium	µg/L	0.5	0.30	<0.30
Dissolved Uranium	µg/L	8.9	0.50	4.36
Dissolved Vanadium	µg/L	3.9	0.40	**5.11**
Dissolved Zinc	µg/L	160	5.0	<5.0
Mercury	µg/L	0.1	0.02	<0.02
Chromium VI	µg/L	25	2	<2
Dissolved Sodium	µg/L	490000	50	29900
Chloride	µg/L	790000	100	33000
Electrical Conductivity	uS/cm	NA	2	790
pH	pH Units		NA	7.88

Certified By:



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AGAT WORK ORDER: 21T790730

PROJECT: 64153.85

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Rhian Fox

SAMPLING SITE:1055 Klondike Road

SAMPLED BY:Rkian Fox

O. Reg. 153(511) - Metals & Inorganics (Water) (excl. CN)

DATE RECEIVED: 2021-08-19 **DATE REPORTED: 2021-08-26**

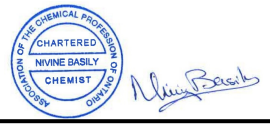
Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Ground Water - All Types of Property Uses
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

2876834 Metals analysis completed on a filtered sample.

Dissolved Vanadium data reported was confirmed by re-analysis.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



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Exceedance Summary

AGAT WORK ORDER: 21T790730

PROJECT: 64153.85

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Rhian Fox

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
2876800	MW21-1 SA-1	ON T1 GW	O. Reg. 153(511) - All Metals (Water)	Dissolved Vanadium	µg/L	3.9	6.83
2876834	MW19-2 SA-1	ON T1 GW	O. Reg. 153(511) - Metals & Inorganics (Water) (excl. CN)	Dissolved Vanadium	µg/L	3.9	5.11

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Quality Assurance

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

AGAT WORK ORDER: 21T790730

PROJECT: 64153.85

ATTENTION TO: Rhian Fox

SAMPLING SITE:1055 Klondike Road

SAMPLED BY:Rkian Fox

Trace Organics Analysis

RPT Date: Aug 26, 2021			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) - PAHs (Water)															
Naphthalene	2876834	2876834	< 0.20	< 0.20	0.0%	< 0.20	98%	50%	140%	85%	50%	140%	84%	50%	140%
Acenaphthylene	2876834	2876834	< 0.20	< 0.20	0.0%	< 0.20	87%	50%	140%	87%	50%	140%	89%	50%	140%
Acenaphthene	2876834	2876834	< 0.20	< 0.20	0.0%	< 0.20	98%	50%	140%	84%	50%	140%	84%	50%	140%
Fluorene	2876834	2876834	< 0.20	< 0.20	0.0%	< 0.20	102%	50%	140%	89%	50%	140%	85%	50%	140%
Phenanthrene	2876834	2876834	< 0.10	< 0.10	0.0%	< 0.10	87%	50%	140%	87%	50%	140%	87%	50%	140%
Anthracene	2876834	2876834	< 0.10	< 0.10	0.0%	< 0.10	102%	50%	140%	85%	50%	140%	87%	50%	140%
Fluoranthene	2876834	2876834	< 0.20	< 0.20	0.0%	< 0.20	96%	50%	140%	84%	50%	140%	96%	50%	140%
Pyrene	2876834	2876834	< 0.20	< 0.20	0.0%	< 0.20	84%	50%	140%	98%	50%	140%	85%	50%	140%
Benzo(a)anthracene	2876834	2876834	< 0.20	< 0.20	0.0%	< 0.20	85%	50%	140%	87%	50%	140%	84%	50%	140%
Chrysene	2876834	2876834	< 0.10	< 0.10	0.0%	< 0.10	85%	50%	140%	87%	50%	140%	87%	50%	140%
Benzo(b)fluoranthene	2876834	2876834	< 0.10	< 0.10	0.0%	< 0.10	87%	50%	140%	82%	50%	140%	85%	50%	140%
Benzo(k)fluoranthene	2876834	2876834	< 0.10	< 0.10	0.0%	< 0.10	97%	50%	140%	81%	50%	140%	84%	50%	140%
Benzo(a)pyrene	2876834	2876834	< 0.01	< 0.01	0.0%	< 0.01	91%	50%	140%	87%	50%	140%	96%	50%	140%
Indeno(1,2,3-cd)pyrene	2876834	2876834	< 0.20	< 0.20	0.0%	< 0.20	87%	50%	140%	85%	50%	140%	87%	50%	140%
Dibenz(a,h)anthracene	2876834	2876834	< 0.20	< 0.20	0.0%	< 0.20	87%	50%	140%	87%	50%	140%	85%	50%	140%
Benzo(g,h,i)perylene	2876834	2876834	< 0.20	< 0.20	0.0%	< 0.20	84%	50%	140%	84%	50%	140%	87%	50%	140%
O. Reg. 153(511) - PHCs F1 - F4 (with PAHs and VOC) (Water)															
F1 (C6-C10)	2876270		<25	<25	NA	< 25	102%	60%	140%	99%	60%	140%	99%	60%	140%
F2 (C10 to C16)	2876675		< 100	< 100	NA	< 100	115%	60%	140%	74%	60%	140%	77%	60%	140%
F3 (C16 to C34)	2876675		< 100	< 100	NA	< 100	98%	60%	140%	79%	60%	140%	78%	60%	140%
F4 (C34 to C50)	2876675		< 100	< 100	NA	< 100	92%	60%	140%	87%	60%	140%	93%	60%	140%
O. Reg. 153(511) - VOCs (Water)															
Dichlorodifluoromethane	2877404		<0.20	<0.20	NA	< 0.20	74%	50%	140%	83%	50%	140%	76%	50%	140%
Vinyl Chloride	2877404		<0.17	<0.17	NA	< 0.17	98%	50%	140%	102%	50%	140%	78%	50%	140%
Bromomethane	2877404		<0.20	<0.20	NA	< 0.20	103%	50%	140%	109%	50%	140%	105%	50%	140%
Trichlorofluoromethane	2877404		<0.40	<0.40	NA	< 0.40	90%	50%	140%	80%	50%	140%	74%	50%	140%
Acetone	2877404		<1.0	<1.0	NA	< 1.0	97%	50%	140%	88%	50%	140%	100%	50%	140%
1,1-Dichloroethylene	2877404		<0.30	<0.30	NA	< 0.30	78%	50%	140%	76%	60%	130%	81%	50%	140%
Methylene Chloride	2877404		<0.30	<0.30	NA	< 0.30	98%	50%	140%	91%	60%	130%	99%	50%	140%
trans- 1,2-Dichloroethylene	2877404		<0.20	<0.20	NA	< 0.20	86%	50%	140%	78%	60%	130%	91%	50%	140%
Methyl tert-butyl ether	2877404		<0.20	<0.20	NA	< 0.20	74%	50%	140%	72%	60%	130%	72%	50%	140%
1,1-Dichloroethane	2877404		<0.30	<0.30	NA	< 0.30	91%	50%	140%	79%	60%	130%	83%	50%	140%
Methyl Ethyl Ketone	2877404		<1.0	<1.0	NA	< 1.0	78%	50%	140%	91%	50%	140%	82%	50%	140%
cis- 1,2-Dichloroethylene	2877404		<0.20	<0.20	NA	< 0.20	92%	50%	140%	84%	60%	130%	74%	50%	140%
Chloroform	2877404		<0.20	<0.20	NA	< 0.20	90%	50%	140%	82%	60%	130%	78%	50%	140%
1,2-Dichloroethane	2877404		<0.20	<0.20	NA	< 0.20	98%	50%	140%	82%	60%	130%	103%	50%	140%
1,1,1-Trichloroethane	2877404		<0.30	<0.30	NA	< 0.30	75%	50%	140%	72%	60%	130%	79%	50%	140%
Carbon Tetrachloride	2877404		<0.20	<0.20	NA	< 0.20	80%	50%	140%	77%	60%	130%	98%	50%	140%

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Quality Assurance

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

AGAT WORK ORDER: 21T790730

PROJECT: 64153.85

ATTENTION TO: Rhian Fox

SAMPLING SITE:1055 Klondike Road

SAMPLED BY:Rkian Fox

Trace Organics Analysis (Continued)

RPT Date: Aug 26, 2021			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
Benzene	2877404		<0.20	<0.20	NA	< 0.20	87%	50%	140%	79%	60%	130%	78%	50%	140%
1,2-Dichloropropane	2877404		<0.20	<0.20	NA	< 0.20	83%	50%	140%	73%	60%	130%	100%	50%	140%
Trichloroethylene	2877404		<0.20	<0.20	NA	< 0.20	83%	50%	140%	77%	60%	130%	72%	50%	140%
Bromodichloromethane	2877404		<0.20	<0.20	NA	< 0.20	77%	50%	140%	80%	60%	130%	81%	50%	140%
Methyl Isobutyl Ketone	2877404		<1.0	<1.0	NA	< 1.0	88%	50%	140%	89%	50%	140%	91%	50%	140%
1,1,2-Trichloroethane	2877404		<0.20	<0.20	NA	< 0.20	84%	50%	140%	88%	60%	130%	115%	50%	140%
Toluene	2877404		<0.20	<0.20	NA	< 0.20	71%	50%	140%	80%	60%	130%	55%	50%	140%
Dibromochloromethane	2877404		<0.10	<0.10	NA	< 0.10	78%	50%	140%	82%	60%	130%	100%	50%	140%
Ethylene Dibromide	2877404		<0.10	<0.10	NA	< 0.10	85%	50%	140%	86%	60%	130%	107%	50%	140%
Tetrachloroethylene	2877404		<0.20	<0.20	NA	< 0.20	70%	50%	140%	73%	60%	130%	71%	50%	140%
1,1,1,2-Tetrachloroethane	2877404		<0.10	<0.10	NA	< 0.10	84%	50%	140%	72%	60%	130%	78%	50%	140%
Chlorobenzene	2877404		<0.10	<0.10	NA	< 0.10	77%	50%	140%	82%	60%	130%	87%	50%	140%
Ethylbenzene	2877404		<0.10	<0.10	NA	< 0.10	89%	50%	140%	74%	60%	130%	80%	50%	140%
m & p-Xylene	2877404		<0.20	<0.20	NA	< 0.20	84%	50%	140%	75%	60%	130%	70%	50%	140%
Bromoform	2877404		<0.10	<0.10	NA	< 0.10	92%	50%	140%	88%	60%	130%	109%	50%	140%
Styrene	2877404		<0.10	<0.10	NA	< 0.10	71%	50%	140%	74%	60%	130%	76%	50%	140%
1,1,2,2-Tetrachloroethane	2877404		<0.10	<0.10	NA	< 0.10	98%	50%	140%	89%	60%	130%	88%	50%	140%
o-Xylene	2877404		<0.10	<0.10	NA	< 0.10	75%	50%	140%	81%	60%	130%	84%	50%	140%
1,3-Dichlorobenzene	2877404		<0.10	<0.10	NA	< 0.10	81%	50%	140%	78%	60%	130%	92%	50%	140%
1,4-Dichlorobenzene	2877404		<0.10	<0.10	NA	< 0.10	83%	50%	140%	80%	60%	130%	98%	50%	140%
1,2-Dichlorobenzene	2877404		<0.10	<0.10	NA	< 0.10	86%	50%	140%	82%	60%	130%	101%	50%	140%
n-Hexane	2877404		<0.20	<0.20	NA	< 0.20	77%	50%	140%	105%	60%	130%	74%	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).

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

F1 (C6 - C10)	2876270	<25	<25	NA	< 25	102%	60%	140%	99%	60%	140%	99%	60%	140%

Certified By: N Popnikolof

AGAT Laboratories

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Quality Assurance

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

AGAT WORK ORDER: 21T790730

PROJECT: 64153.85

ATTENTION TO: Rhian Fox

SAMPLING SITE:1055 Klondike Road

SAMPLED BY:Rkian Fox

Water Analysis

RPT Date: Aug 26, 2021			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals & Inorganics (Water) (excl. CN)															
Dissolved Antimony	2882530		<1.0	<1.0	NA	< 1.0	99%	70%	130%	105%	80%	120%	111%	70%	130%
Dissolved Arsenic	2882530		1.3	1.3	NA	< 1.0	96%	70%	130%	97%	80%	120%	102%	70%	130%
Dissolved Barium	2882530		264	266	0.9%	< 2.0	97%	70%	130%	98%	80%	120%	100%	70%	130%
Dissolved Beryllium	2882530		<0.50	<0.50	NA	< 0.50	107%	70%	130%	84%	80%	120%	97%	70%	130%
Dissolved Boron	2882530		55.2	49.7	10.6%	< 10.0	99%	70%	130%	89%	80%	120%	93%	70%	130%
Dissolved Cadmium	2882530		<0.20	<0.20	NA	< 0.20	100%	70%	130%	98%	80%	120%	97%	70%	130%
Dissolved Chromium	2882530		2.0	<2.0	NA	< 2.0	101%	70%	130%	106%	80%	120%	107%	70%	130%
Dissolved Cobalt	2882530		1.32	1.27	NA	< 0.50	94%	70%	130%	105%	80%	120%	107%	70%	130%
Dissolved Copper	2882530		6.0	5.3	11.8%	< 1.0	99%	70%	130%	103%	80%	120%	105%	70%	130%
Dissolved Lead	2882530		2.38	2.29	NA	< 0.50	98%	70%	130%	103%	80%	120%	103%	70%	130%
Dissolved Molybdenum	2882530		7.99	7.92	0.8%	< 0.50	101%	70%	130%	105%	80%	120%	110%	70%	130%
Dissolved Nickel	2882530		3.0	3.3	NA	< 3.0	96%	70%	130%	105%	80%	120%	105%	70%	130%
Dissolved Selenium	2882530		<1.0	<1.0	NA	< 1.0	90%	70%	130%	97%	80%	120%	102%	70%	130%
Dissolved Silver	2882530		<0.20	<0.20	NA	< 0.20	98%	70%	130%	118%	80%	120%	114%	70%	130%
Dissolved Thallium	2882530		<0.30	<0.30	NA	< 0.30	101%	70%	130%	105%	80%	120%	106%	70%	130%
Dissolved Uranium	2882530		4.19	3.88	7.9%	< 0.50	102%	70%	130%	113%	80%	120%	110%	70%	130%
Dissolved Vanadium	2882530		3.58	3.26	9.5%	< 0.40	98%	70%	130%	108%	80%	120%	109%	70%	130%
Dissolved Zinc	2882530		6.3	8.1	NA	< 5.0	98%	70%	130%	93%	80%	120%	102%	70%	130%
Mercury	2875705		<0.02	<0.02	NA	< 0.02	99%	70%	130%	98%	80%	120%	93%	70%	130%
Chromium VI	2873114		<2	<2	NA	< 2	101%	70%	130%	109%	80%	120%	109%	70%	130%
Dissolved Sodium	2871251		9250	9200	0.6%	< 50	101%	70%	130%	97%	80%	120%	97%	70%	130%
Chloride	2876240		803	805	0.2%	< 100	100%	70%	130%	108%	80%	120%	109%	70%	130%
Electrical Conductivity	2878860		262	261	0.4%	< 2	109%	90%	110%						
pH	2878860		7.77	7.87	1.3%	NA	103%	90%	110%						

Comments: NA signifies Not Applicable.
Duplicate NA: results are under 5X the RDL and will not be calculated.

Certified By:

AGAT Laboratories

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Method Summary

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

AGAT WORK ORDER: 21T790730

PROJECT: 64153.85

ATTENTION TO: Rhian Fox

SAMPLING SITE:1055 Klondike Road

SAMPLED BY:Rkian Fox

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Naphthalene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Acenaphthylene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Acenaphthene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Fluorene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Phenanthrene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Anthracene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Fluoranthene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Pyrene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Benzo(a)anthracene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Chrysene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Benzo(b)fluoranthene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Benzo(k)fluoranthene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Benzo(a)pyrene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Dibenz(a,h)anthracene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Benzo(g,h,i)perylene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
2-and 1-methyl Naphthalene	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Naphthalene-d8	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Acridine-d9	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Terphenyl-d14	ORG-91-5105	modified from EPA 3510C and EPA 8270E	GC/MS
Sediment			
Toluene-d8	VOL-91-5009	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
F1 (C6 - C10)	VOL-91- 5010	modified from MOE PHC E3421	(P&T)GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5010	modified from MOE PHC E3421	(P&T)GC/FID
F2 (C10 to C16)	VOL-91-5010	modified from MOE PHC E3421	GC / FID
F3 (C16 to C34)	VOL-91-5010	modified from MOE PHC E3421	GC / FID
F4 (C34 to C50)	VOL-91-5010	modified from MOE PHC E3421	GC / FID
Gravimetric Heavy Hydrocarbons	VOL-91-5010	modified from MOE PHC E3421	BALANCE
Terphenyl	VOL-91-5009	modified from MOE PHC E3421	GC/FID
F1 (C6-C10)	VOL-91-5010	modified from MOE PHC-E3421	(P&T)GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5010	modified from MOE PHC-E3421	P&T GC/FID
Toluene-d8	VOL-91-5010	modified from MOE PHC-E3421	(P&T)GC/MS
F2 (C10 to C16)	VOL-91-5010	modified from MOE PHC-E3421	GC/FID

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Method Summary

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS | **AGAT WORK ORDER: 21T790730**

PROJECT: 64153.85 | **ATTENTION TO: Rhian Fox**

SAMPLING SITE:1055 Klondike Road | **SAMPLED BY:Rkian Fox**

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
F2 (C10 to C16) minus Naphthalene	VOL-91-5010	modified from MOE PHC-E3421	GC/FID
F3 (C16 to C34)	VOL-91-5010	modified from MOE PHC-E3421	GC/FID
F3 (C16 to C34) minus PAHs	VOL-91-5010	modified from MOE PHC-E3421	GC/FID
F4 (C34 to C50)	VOL-91-5010	modified from MOE PHC-E3421	GC/FID
Gravimetric Heavy Hydrocarbons	VOL-91-5010	modified from MOE PHC-E3421	BALANCE
Terphenyl	VOL-91-5010	modified from MOE PHC-E3421	GC/FID
Dichlorodifluoromethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Vinyl Chloride	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Bromomethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Acetone	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Methylene Chloride	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
trans- 1,2-Dichloroethylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Methyl tert-butyl ether	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
cis- 1,2-Dichloroethylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Chloroform	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Benzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Trichloroethylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Bromodichloromethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Toluene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Dibromochloromethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS

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Method Summary

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

AGAT WORK ORDER: 21T790730

PROJECT: 64153.85

ATTENTION TO: Rhian Fox

SAMPLING SITE:1055 Klondike Road

SAMPLED BY:Rkian Fox

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Tetrachloroethylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Chlorobenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Ethylbenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
m & p-Xylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Bromoform	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Styrene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
o-Xylene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
1,3-Dichloropropene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Xylenes (Total)	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
n-Hexane	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Toluene-d8	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS

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Method Summary

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ATTENTION TO: Rhian Fox

SAMPLING SITE:1055 Klondike Road

SAMPLED BY:Rkian Fox

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Dissolved Antimony	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Arsenic	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Barium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Beryllium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Boron	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Cadmium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Chromium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Cobalt	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Copper	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Lead	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Molybdenum	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Nickel	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Selenium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Silver	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Thallium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Uranium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Vanadium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Dissolved Zinc	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP-MS
Mercury	MET-93-6100	modified from EPA 245.2 and SM 3112 B	CVAAS
Chromium VI	INOR-93-6034	modified from SM 3500-CR B	LACHAT FIA
Dissolved Sodium	MET-93-6105	modified from EPA 6010D	ICP/OES
Chloride	INOR-93-6004	modified from SM 4110 B	ION CHROMATOGRAPH
Electrical Conductivity	INOR-93-6000	SM 2510 B	PC TITRATE
pH	INOR-93-6000	modified from SM 4500-H+ B	PC TITRATE

ottawa-

ice 8677 92

AGAT Laboratories

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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 #: 21T790730

Cooler Quantity: 1

Arrival Temperatures: 20.2 20.2 20.2

Custody Seal Intact: ☐ Yes ☐ No ☑ ~~N/A~~

Notes: Ice Pack

Report Information:

Company: GEMTEC
Contact: Rhian Fox
Address: 32 Steacle Drive, Ottawa, ON
Phone: 343-553-1600 Fax:
Reports to be sent to:
1. Email: rhian.fox@gemtec.ca
2. Email: nicole.soucy@gemtec.ca

Project Information:

Project: 64153.85
Site Location: 1055 Klondike Road
Sampled By: Rhian Fox
AGAT Quote #: PO: 64153.85
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:

(Please check all applicable boxes)

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

☐ Excess Soils R406 — Table (Indicate One)
☐ Regulation 558
☐ CCME

☐ Sewer Use ☐ Sanitary ☐ Storm — Region
☐ 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, DOC (Y/N)	O. Reg 153: Metals & Inorganics	O. Reg 153: Metals - ☑ CrVI, ☑ Hg, ☑ HWSB	O. Reg 153: BTEX, F1-F4 PHCs, Analyze F4G if required ☐ Yes ☐ No	O. Reg 153: PAHs	O. Reg 153: PCBs	O. Reg 153: VOC	O. Reg 558: Landfill Disposal Characterization TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	O. Reg 406: Excess Soils SPLP Rainwater Leach SPLP: ☐ Metals ☐ VOCs ☐ SVOCs	O. Reg 406: Excess Soils Characterization Package pH, ICPMS Metals, BTEX, F1-F4	Salt - EC/SAR	Potentially Hazardous or High Concentration (Y/N)
MW21-1 SA-1	Aug. 19/21	11:00 AM/PM		GW	Metals field filtered			☑		☑							
MW19-2 SA-1	Aug. 19/21	11:00 AM/PM		GW	Metals field filtered		☑		☑	☑		☑					
Trip Blank	Aug. 19/21	11:00 AM/PM		GW					☑			☑					
		AM/PM															
		AM/PM															
		AM/PM															
		AM/PM															
		AM/PM															
		AM/PM															
		AM/PM															
		AM/PM															

Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time
Rhian Fox	Aug 19/2021	1400	Jeff Jones	19/Aug/21	1400
			Simon 21/8/20		1055

Page 1 of 1

N°:

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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: 64153.85

AGAT WORK ORDER: 21Z787215

SOIL ANALYSIS REVIEWED BY: Nivine Basily, Inorganics Report Writer

TRACE ORGANICS REVIEWED BY: Neli Popnikolova, Senior Chemist

DATE REPORTED: Aug 23, 2021

PAGES (INCLUDING COVER): 21

VERSION*: 1

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

*Notes

Disclaimer:

- All work conducted herein has been done using accepted standard protocols, and generally accepted practices and methods. AGAT test methods may incorporate modifications from the specified reference methods to improve performance.
- All samples will be disposed of within 30 days after receipt unless a Long Term Storage Agreement is signed and returned. Some specialty analysis may be exempt, please contact your Client Project Manager for details.
- AGAT's liability in connection with any delay, performance or non-performance of these services is only to the Client and does not extend to any other third party. Unless expressly agreed otherwise in writing, AGAT's liability is limited to the actual cost of the specific analysis or analyses included in the services.
- This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
- The test results reported herewith relate only to the samples as received by the laboratory.
- Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, warranties of merchantability, fitness for a particular purpose, or non-infringement. AGAT assumes no responsibility for any errors or omissions in the guidelines contained in this document.
- All reportable information as specified by ISO/IEC 17025:2017 is available from AGAT Laboratories upon request.

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 21Z787215

PROJECT: 64153.85

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Nicole Soucy

SAMPLING SITE:

SAMPLED BY:

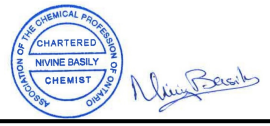
O. Reg. 153(511) - Metals & Inorganics (Soil)

DATE RECEIVED: 2021-08-12

DATE REPORTED: 2021-08-23

SAMPLE DESCRIPTION:				BH21-2 SA-2	BH21-2 SA-102	BH21-3 SA-3	BH21-4 SA-4
SAMPLE TYPE:				Soil	Soil	Soil	Soil
DATE SAMPLED:				2021-08-12	2021-08-12	2021-08-12	2021-08-12
Parameter	Unit	G / S	RDL	2851690	2851691	2851692	2851693
Antimony	µg/g	1.3	0.8	<0.8	<0.8	<0.8	<0.8
Arsenic	µg/g	18	1	1	1	1	1
Barium	µg/g	220	2.0	53.4	59.2	27.8	40.3
Beryllium	µg/g	2.5	0.4	<0.4	<0.4	<0.4	<0.4
Boron	µg/g	36	5	<5	<5	<5	<5
Boron (Hot Water Soluble)	µg/g	NA	0.10	0.13	0.13	<0.10	0.51
Cadmium	µg/g	1.2	0.5	<0.5	<0.5	<0.5	<0.5
Chromium	µg/g	70	5	25	24	13	23
Cobalt	µg/g	21	0.5	6.1	6.4	4.2	6.1
Copper	µg/g	92	1.0	13.6	13.2	7.3	11.0
Lead	µg/g	120	1	4	3	2	3
Molybdenum	µg/g	2	0.5	0.6	<0.5	<0.5	<0.5
Nickel	µg/g	82	1	14	14	8	12
Selenium	µg/g	1.5	0.8	<0.8	<0.8	<0.8	<0.8
Silver	µg/g	0.5	0.5	<0.5	<0.5	<0.5	<0.5
Thallium	µg/g	1	0.5	<0.5	<0.5	<0.5	<0.5
Uranium	µg/g	2.5	0.50	0.53	<0.50	<0.50	<0.50
Vanadium	µg/g	86	0.4	31.1	32.0	21.7	29.7
Zinc	µg/g	290	5	26	25	17	26
Chromium, Hexavalent	µg/g	0.66	0.2	<0.2	<0.2	<0.2	<0.2
Cyanide, Free	µg/g	0.051	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
Electrical Conductivity (2:1)	mS/cm	0.57	0.005	0.282	0.208	0.058	0.068
Sodium Adsorption Ratio (2:1) (Calc.)	N/A	2.4	N/A	3.16	3.37	0.282	0.119
pH, 2:1 CaCl2 Extraction	pH Units		NA	7.62	7.54	7.43	7.54

Certified By:



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Certificate of Analysis

AGAT WORK ORDER: 21Z787215

PROJECT: 64153.85

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Nicole Soucy

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2021-08-12

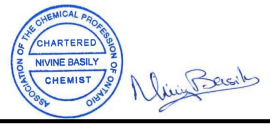
DATE REPORTED: 2021-08-23

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.

2851690-2851693 EC was 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. SAR is a calculated parameter.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



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AGAT WORK ORDER: 21Z787215

PROJECT: 64153.85

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Nicole Soucy

SAMPLING SITE:

SAMPLED BY:

O. Reg. 153(511) - Metals (Including Hydrides) (Soil)

DATE RECEIVED: 2021-08-12

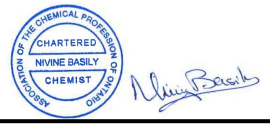
DATE REPORTED: 2021-08-23

		SAMPLE DESCRIPTION:		BH21-1 SA-1
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2021-08-12
Parameter	Unit	G / S	RDL	2851686
Antimony	µg/g	1.3	0.8	<0.8
Arsenic	µg/g	18	1	3
Barium	µg/g	220	2.0	87.1
Beryllium	µg/g	2.5	0.4	<0.4
Boron	µg/g	36	5	<5
Cadmium	µg/g	1.2	0.5	<0.5
Chromium	µg/g	70	5	22
Cobalt	µg/g	21	0.5	5.3
Copper	µg/g	92	1.0	12.8
Lead	µg/g	120	1	37
Molybdenum	µg/g	2	0.5	0.7
Nickel	µg/g	82	1	10
Selenium	µg/g	1.5	0.8	<0.8
Silver	µg/g	0.5	0.5	<0.5
Thallium	µg/g	1	0.5	<0.5
Uranium	µg/g	2.5	0.50	<0.50
Vanadium	µg/g	86	0.4	32.3
Zinc	µg/g	290	5	112

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.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



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AGAT WORK ORDER: 21Z787215

PROJECT: 64153.85

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Nicole Soucy

SAMPLING SITE:

SAMPLED BY:

O. Reg. 558 Metals and Inorganics

DATE RECEIVED: 2021-08-12

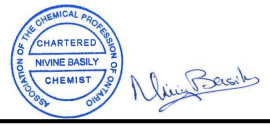
DATE REPORTED: 2021-08-23

		SAMPLE DESCRIPTION:		TCLP-01	TCLP-02
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2021-08-12	2021-08-12
Parameter	Unit	G / S	RDL	2851683	2851685
Arsenic Leachate	mg/L	2.5	0.010	<0.010	<0.010
Barium Leachate	mg/L	100	0.010	0.384	0.549
Boron Leachate	mg/L	500	0.050	0.052	<0.050
Cadmium Leachate	mg/L	0.5	0.010	<0.010	<0.010
Chromium Leachate	mg/L	5	0.050	<0.050	<0.050
Lead Leachate	mg/L	5	0.010	0.020	0.012
Mercury Leachate	mg/L	0.1	0.01	<0.01	<0.01
Selenium Leachate	mg/L	1	0.010	<0.010	<0.010
Silver Leachate	mg/L	5	0.010	<0.010	<0.010
Uranium Leachate	mg/L	10	0.050	<0.050	<0.050
Fluoride Leachate	mg/L	150	0.10	<0.10	0.19
Cyanide Leachate	mg/L	20	0.05	<0.05	<0.05
(Nitrate + Nitrite) as N Leachate	mg/L	1000	0.70	<0.70	<0.70

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to O. Reg. 558 - Schedule IV Leachate Quality Criteria
Guideline values are for general reference only. The guidelines provided may or may not be relevant for the intended use. Refer directly to the applicable standard for regulatory interpretation.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:



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AGAT WORK ORDER: 21Z787215

PROJECT: 64153.85

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Nicole Soucy

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2021-08-12

DATE REPORTED: 2021-08-23

		SAMPLE DESCRIPTION:		BH21-1 SA-1	BH21-2 SA-2	BH21-2 SA-102	BH21-3 SA-3	BH21-4 SA-4
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2021-08-12	2021-08-12	2021-08-12	2021-08-12	2021-08-12
Parameter	Unit	G / S	RDL	2851686	2851690	2851691	2851692	2851693
Naphthalene	µg/g	0.09	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthylene	µg/g	0.093	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthene	µg/g	0.072	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluorene	µg/g	0.12	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Phenanthrene	µg/g	0.69	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Anthracene	µg/g	0.16	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluoranthene	µg/g	0.56	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Pyrene	µg/g	1	0.05	0.05	<0.05	<0.05	<0.05	<0.05
Benz(a)anthracene	µg/g	0.36	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	µg/g	2.8	0.05	0.06	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg/g	0.47	0.05	0.06	<0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	µg/g	0.48	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	µg/g	0.3	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.46	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenz(a,h)anthracene	µg/g	0.1	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(g,h,i)perylene	µg/g	0.68	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1 and 2 Methlynaphthalene	µg/g	0.59	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Moisture Content	%		0.1	5.9	17.8	18.7	8.5	12.2
Surrogate	Unit	Acceptable Limits						
Naphthalene-d8	%	50-140		111	89	85	89	89
Acridine-d9	%	50-140		98	85	96	85	85
Terphenyl-d14	%	50-140		86	84	85	96	96

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.

2851686-2851693 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.
2- and 1-Methyl Naphthalene is a calculated parameter. The calculated value is the sum of 2-Methyl Naphthalene and 1-Methyl Naphthalene.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: NPopowich

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Certificate of Analysis

AGAT WORK ORDER: 21Z787215

PROJECT: 64153.85

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Nicole Soucy

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2021-08-12

DATE REPORTED: 2021-08-23

		SAMPLE DESCRIPTION:		BH21-2 SA-2	BH21-2 SA-102	BH21-3 SA-3	BH21-4 SA-4
		SAMPLE TYPE:		Soil	Soil	Soil	Soil
		DATE SAMPLED:		2021-08-12	2021-08-12	2021-08-12	2021-08-12
Parameter	Unit	G / S	RDL	2851690	2851691	2851692	2851693
F1 (C6 - C10)	µg/g	25	5	<5	<5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	25	5	<5	<5	<5	<5
F2 (C10 to C16)	µg/g	10	10	<10	<10	<10	<10
F2 (C10 to C16) minus Naphthalene	µg/g		10	<10	<10	<10	<10
F3 (C16 to C34)	µg/g	240	50	<50	<50	<50	<50
F3 (C16 to C34) minus PAHs	µg/g		50	<50	<50	<50	<50
F4 (C34 to C50)	µg/g	120	50	<50	<50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g	120	50	NA	NA	NA	NA
Moisture Content	%		0.1	17.8	18.7	8.5	12.2
Surrogate	Unit	Acceptable Limits					
Toluene-d8	% Recovery	50-140		71	76	102	96
Terphenyl	%	60-140		101	107	100	95

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.

2851690-2851693 Results are based on sample dry weight.
The C6-C10 fraction is calculated using toluene response factor.
C6–C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX. The calculated parameter is non-accredited. The parameters that are components of the calculation are accredited.
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.
C>10 – C16 (F2- Naphthalene) is a calculated parameter. The calculated value is F2 - Naphthalene.
C>16 - C34 (F3-PAH) is a calculated parameter. The calculated value is F3-PAH (PAH: sum of Phenanthrene, Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Fluoranthene, Dibenzo(a,h)anthracene, Indeno(1,2,3-c,d)pyrene and Pyrene).
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC10, nC16 and nC34 response factors are within 10% of their average.
C50 response factor is within 70% of nC10 + nC16 + nC34 average.
Linearity is within 15%.
Extraction and holding times were met for this sample.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: N Popnikolof

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AGAT WORK ORDER: 21Z787215

PROJECT: 64153.85

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Nicole Soucy

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2021-08-12

DATE REPORTED: 2021-08-23

SAMPLE DESCRIPTION:				BH21-2 SA-2	BH21-2 SA-102	BH21-3 SA-3	BH21-4 SA-4
SAMPLE TYPE:				Soil	Soil	Soil	Soil
DATE SAMPLED:				2021-08-12	2021-08-12	2021-08-12	2021-08-12
Parameter	Unit	G / S	RDL	2851690	2851691	2851692	2851693
Dichlorodifluoromethane	µg/g	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
Bromomethane	ug/g	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
Acetone	ug/g	0.5	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
Methylene Chloride	ug/g	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
Methyl tert-butyl Ether	ug/g	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
Methyl Ethyl Ketone	ug/g	0.5	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
Chloroform	ug/g	0.05	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
1,1,1-Trichloroethane	ug/g	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
Benzene	ug/g	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
Trichloroethylene	ug/g	0.05	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
Methyl Isobutyl Ketone	ug/g	0.5	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
Toluene	ug/g	0.2	0.05	<0.05	<0.05	<0.05	<0.05
Dibromochloromethane	ug/g	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
Tetrachloroethylene	ug/g	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
Chlorobenzene	ug/g	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
m & p-Xylene	ug/g		0.05	<0.05	<0.05	<0.05	<0.05

Certified By: N Popnikolof

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Certificate of Analysis

AGAT WORK ORDER: 21Z787215

PROJECT: 64153.85

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Nicole Soucy

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2021-08-12

DATE REPORTED: 2021-08-23

		SAMPLE DESCRIPTION:		BH21-2 SA-2	BH21-2 SA-102	BH21-3 SA-3	BH21-4 SA-4
		SAMPLE TYPE:		Soil	Soil	Soil	Soil
		DATE SAMPLED:		2021-08-12	2021-08-12	2021-08-12	2021-08-12
Parameter	Unit	G / S	RDL	2851690	2851691	2851692	2851693
Bromoform	ug/g	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
1,1,2,2-Tetrachloroethane	ug/g	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
1,3-Dichlorobenzene	ug/g	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
1,2-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05
Xylenes (Total)	ug/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichloropropene (Cis + Trans)	µg/g	0.05	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
Moisture Content	%		0.1	17.8	18.7	8.5	12.2
Surrogate	Unit	Acceptable Limits					
Toluene-d8	% Recovery	50-140		109	116	119	122
4-Bromofluorobenzene	% Recovery	50-140		102	106	100	99

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.

2851690-2851693 The sample was analyzed 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.
Xylenes total is a calculated parameter. The calculated value is the sum of m&p-Xylene + o-Xylene.
1,3-Dichloropropene total is a calculated parameter. The calculated value is the sum of Cis-1,3-Dichloropropene and Trans-1,3-Dichloropropene.
The calculated parameters are non-accredited. The parameters that are components of the calculation are accredited.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: N Popnikolof

AGAT Laboratories

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Exceedance Summary

AGAT WORK ORDER: 21Z787215

PROJECT: 64153.85

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Nicole Soucy

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
2851690	BH21-2 SA-2	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Sodium Adsorption Ratio (2:1) (Calc.)	N/A	2.4	3.16
2851691	BH21-2 SA-102	ON T1 S RPI/ICC	O. Reg. 153(511) - Metals & Inorganics (Soil)	Sodium Adsorption Ratio (2:1) (Calc.)	N/A	2.4	3.37

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Quality Assurance

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

AGAT WORK ORDER: 21Z787215

PROJECT: 64153.85

ATTENTION TO: Nicole Soucy

SAMPLING SITE:

SAMPLED BY:

Soil Analysis

RPT Date: Aug 23, 2021			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. 558 Metals and Inorganics															
Arsenic Leachate	2863298		<0.010	<0.010	NA	< 0.010	98%	70%	130%	108%	80%	120%	106%	70%	130%
Barium Leachate	2863298		0.424	0.427	0.7%	< 0.010	100%	70%	130%	99%	80%	120%	101%	70%	130%
Boron Leachate	2863298		<0.050	<0.050	NA	< 0.050	110%	70%	130%	88%	80%	120%	87%	70%	130%
Cadmium Leachate	2863298		<0.010	<0.010	NA	< 0.010	102%	70%	130%	103%	80%	120%	99%	70%	130%
Chromium Leachate	2863298		<0.050	<0.050	NA	< 0.050	100%	70%	130%	111%	80%	120%	105%	70%	130%
Lead Leachate	2863298		<0.010	<0.010	NA	< 0.010	98%	70%	130%	91%	80%	120%	89%	70%	130%
Mercury Leachate	2863298		<0.01	<0.01	NA	< 0.01	101%	70%	130%	100%	80%	120%	97%	70%	130%
Selenium Leachate	2863298		<0.010	<0.010	NA	< 0.010	97%	70%	130%	108%	80%	120%	104%	70%	130%
Silver Leachate	2863298		<0.010	<0.010	NA	< 0.010	104%	70%	130%	103%	80%	120%	96%	70%	130%
Uranium Leachate	2863298		<0.050	<0.050	NA	< 0.050	96%	70%	130%	103%	80%	120%	102%	70%	130%
Fluoride Leachate	2863298		0.21	0.21	NA	< 0.10	102%	90%	110%	101%	90%	110%	101%	70%	130%
Cyanide Leachate	2863298		<0.05	<0.05	NA	< 0.05	99%	70%	130%	105%	80%	120%	115%	70%	130%
(Nitrate + Nitrite) as N Leachate	2863298		<0.70	<0.70	NA	< 0.70	102%	80%	120%	98%	80%	120%	99%	70%	130%

Comments: NA signifies Not Applicable.
Duplicate NA: results are under 5X the RDL and will not be calculated.

O. Reg. 153(511) - Metals & Inorganics (Soil)															
Antimony	2868152		<0.8	<0.8	NA	< 0.8	127%	70%	130%	102%	80%	120%	97%	70%	130%
Arsenic	2868152		<1	1	NA	< 1	125%	70%	130%	107%	80%	120%	111%	70%	130%
Barium	2868152		24.4	25.5	4.4%	< 2.0	101%	70%	130%	102%	80%	120%	103%	70%	130%
Beryllium	2868152		<0.4	<0.4	NA	< 0.4	113%	70%	130%	99%	80%	120%	97%	70%	130%
Boron	2868152		<5	<5	NA	< 5	101%	70%	130%	105%	80%	120%	102%	70%	130%
Boron (Hot Water Soluble)	2852282		0.71	0.64	10.4%	< 0.10	92%	60%	140%	94%	70%	130%	110%	60%	140%
Cadmium	2868152		<0.5	<0.5	NA	< 0.5	111%	70%	130%	103%	80%	120%	104%	70%	130%
Chromium	2868152		14	15	NA	< 5	114%	70%	130%	101%	80%	120%	112%	70%	130%
Cobalt	2868152		2.8	2.8	0.0%	< 0.5	112%	70%	130%	101%	80%	120%	102%	70%	130%
Copper	2868152		10.0	10.1	1.0%	< 1.0	95%	70%	130%	100%	80%	120%	95%	70%	130%
Lead	2868152		20	22	9.5%	< 1	105%	70%	130%	94%	80%	120%	93%	70%	130%
Molybdenum	2868152		<0.5	<0.5	NA	< 0.5	116%	70%	130%	105%	80%	120%	111%	70%	130%
Nickel	2868152		5	5	0.0%	< 1	113%	70%	130%	103%	80%	120%	103%	70%	130%
Selenium	2868152		<0.8	<0.8	NA	< 0.8	133%	70%	130%	113%	80%	120%	115%	70%	130%
Silver	2868152		<0.5	<0.5	NA	< 0.5	118%	70%	130%	101%	80%	120%	99%	70%	130%
Thallium	2868152		<0.5	<0.5	NA	< 0.5	115%	70%	130%	103%	80%	120%	103%	70%	130%
Uranium	2868152		<0.50	0.50	NA	< 0.50	109%	70%	130%	98%	80%	120%	97%	70%	130%
Vanadium	2868152		23.0	25.5	10.3%	< 0.4	125%	70%	130%	102%	80%	120%	105%	70%	130%
Zinc	2868152		40	42	4.9%	< 5	110%	70%	130%	113%	80%	120%	118%	70%	130%
Chromium, Hexavalent	2854748		<0.2	<0.2	NA	< 0.2	100%	70%	130%	86%	80%	120%	96%	70%	130%
Cyanide, Free	2865650		<0.040	<0.040	NA	< 0.040	91%	70%	130%	108%	80%	120%	100%	70%	130%
Mercury	2868152		0.10	0.12	NA	< 0.10	111%	70%	130%	108%	80%	120%	106%	70%	130%

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Quality Assurance

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

AGAT WORK ORDER: 21Z787215

PROJECT: 64153.85

ATTENTION TO: Nicole Soucy

SAMPLING SITE:

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Soil Analysis (Continued)

RPT Date: Aug 23, 2021			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
Electrical Conductivity (2:1)	2864004		0.140	0.136	2.9%	< 0.005	112%	80%	120%						
Sodium Adsorption Ratio (2:1) (Calc.)	2847804		5.01	5.02	0.2%	NA									
pH, 2:1 CaCl2 Extraction	2865650		7.82	8.25	5.4%	NA	99%	80%	120%						

Comments: NA signifies Not Applicable.
pH duplicates QA acceptance criteria was met relative as stated in Table 5-15 of Analytical Protocol document.
Duplicate NA: results are under 5X the RDL and will not be calculated.

More than 90% of the elements met acceptance limits and overall data quality is acceptable for use. For a multi-element scan up to 10% of analytes may exceed the quoted limits by up to 10% absolute.

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Trace Organics Analysis

RPT Date: Aug 23, 2021			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - VOCs (Soil)															
Dichlorodifluoromethane	2851553		<0.05	<0.05	NA	< 0.05	93%	50%	140%	105%	50%	140%	89%	50%	140%
Vinyl Chloride	2851553		<0.02	<0.02	NA	< 0.02	117%	50%	140%	109%	50%	140%	88%	50%	140%
Bromomethane	2851553		<0.05	<0.05	NA	< 0.05	91%	50%	140%	108%	50%	140%	117%	50%	140%
Trichlorofluoromethane	2851553		<0.05	<0.05	NA	< 0.05	89%	50%	140%	101%	50%	140%	72%	50%	140%
Acetone	2851553		<0.50	<0.50	NA	< 0.50	104%	50%	140%	80%	50%	140%	93%	50%	140%
1,1-Dichloroethylene	2851553		<0.05	<0.05	NA	< 0.05	105%	50%	140%	92%	60%	130%	96%	50%	140%
Methylene Chloride	2851553		<0.05	<0.05	NA	< 0.05	74%	50%	140%	90%	60%	130%	75%	50%	140%
Trans- 1,2-Dichloroethylene	2851553		<0.05	<0.05	NA	< 0.05	86%	50%	140%	108%	60%	130%	110%	50%	140%
Methyl tert-butyl Ether	2851553		<0.05	<0.05	NA	< 0.05	110%	50%	140%	88%	60%	130%	86%	50%	140%
1,1-Dichloroethane	2851553		<0.02	<0.02	NA	< 0.02	114%	50%	140%	78%	60%	130%	99%	50%	140%
Methyl Ethyl Ketone	2851553		<0.50	<0.50	NA	< 0.50	93%	50%	140%	84%	50%	140%	84%	50%	140%
Cis- 1,2-Dichloroethylene	2851553		<0.02	<0.02	NA	< 0.02	107%	50%	140%	83%	60%	130%	103%	50%	140%
Chloroform	2851553		<0.04	<0.04	NA	< 0.04	103%	50%	140%	86%	60%	130%	84%	50%	140%
1,2-Dichloroethane	2851553		<0.03	<0.03	NA	< 0.03	91%	50%	140%	95%	60%	130%	91%	50%	140%
1,1,1-Trichloroethane	2851553		<0.05	<0.05	NA	< 0.05	93%	50%	140%	91%	60%	130%	94%	50%	140%
Carbon Tetrachloride	2851553		<0.05	<0.05	NA	< 0.05	93%	50%	140%	97%	60%	130%	79%	50%	140%
Benzene	2851553		<0.02	<0.02	NA	< 0.02	95%	50%	140%	74%	60%	130%	116%	50%	140%
1,2-Dichloropropane	2851553		<0.03	<0.03	NA	< 0.03	104%	50%	140%	83%	60%	130%	85%	50%	140%
Trichloroethylene	2851553		<0.03	<0.03	NA	< 0.03	87%	50%	140%	94%	60%	130%	107%	50%	140%
Bromodichloromethane	2851553		<0.05	<0.05	NA	< 0.05	87%	50%	140%	101%	60%	130%	115%	50%	140%
Methyl Isobutyl Ketone	2851553		<0.50	<0.50	NA	< 0.50	91%	50%	140%	84%	50%	140%	94%	50%	140%
1,1,2-Trichloroethane	2851553		<0.04	<0.04	NA	< 0.04	93%	50%	140%	84%	60%	130%	92%	50%	140%
Toluene	2851553		<0.05	<0.05	NA	< 0.05	114%	50%	140%	106%	60%	130%	115%	50%	140%
Dibromochloromethane	2851553		<0.05	<0.05	NA	< 0.05	96%	50%	140%	84%	60%	130%	74%	50%	140%
Ethylene Dibromide	2851553		<0.04	<0.04	NA	< 0.04	88%	50%	140%	81%	60%	130%	83%	50%	140%
Tetrachloroethylene	2851553		<0.05	<0.05	NA	< 0.05	87%	50%	140%	97%	60%	130%	105%	50%	140%
1,1,1,2-Tetrachloroethane	2851553		<0.04	<0.04	NA	< 0.04	102%	50%	140%	94%	60%	130%	89%	50%	140%
Chlorobenzene	2851553		<0.05	<0.05	NA	< 0.05	100%	50%	140%	94%	60%	130%	101%	50%	140%
Ethylbenzene	2851553		<0.05	<0.05	NA	< 0.05	72%	50%	140%	94%	60%	130%	83%	50%	140%
m & p-Xylene	2851553		<0.05	<0.05	NA	< 0.05	99%	50%	140%	94%	60%	130%	96%	50%	140%
Bromoform	2851553		<0.05	<0.05	NA	< 0.05	88%	50%	140%	76%	60%	130%	78%	50%	140%
Styrene	2851553		<0.05	<0.05	NA	< 0.05	94%	50%	140%	103%	60%	130%	110%	50%	140%
1,1,2,2-Tetrachloroethane	2851553		<0.05	<0.05	NA	< 0.05	75%	50%	140%	103%	60%	130%	109%	50%	140%
o-Xylene	2851553		<0.05	<0.05	NA	< 0.05	91%	50%	140%	87%	60%	130%	99%	50%	140%
1,3-Dichlorobenzene	2851553		<0.05	<0.05	NA	< 0.05	79%	50%	140%	113%	60%	130%	97%	50%	140%
1,4-Dichlorobenzene	2851553		<0.05	<0.05	NA	< 0.05	80%	50%	140%	111%	60%	130%	99%	50%	140%
1,2-Dichlorobenzene	2851553		<0.05	<0.05	NA	< 0.05	86%	50%	140%	103%	60%	130%	112%	50%	140%
n-Hexane	2851553		<0.05	<0.05	NA	< 0.05	85%	50%	140%	91%	60%	130%	112%	50%	140%

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Quality Assurance

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AGAT WORK ORDER: 21Z787215

PROJECT: 64153.85

ATTENTION TO: Nicole Soucy

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Trace Organics Analysis (Continued)

RPT Date: Aug 23, 2021			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) - PAHs (Soil)															
Naphthalene	2857693	2857693	< 0.05	< 0.05	0.0%	< 0.05	98%	50%	140%	102%	50%	140%	102%	50%	140%
Acenaphthylene	2857693	2857693	0.13	0.09	NA	< 0.05	96%	50%	140%	85%	50%	140%	85%	50%	140%
Acenaphthene	2857693	2857693	< 0.05	< 0.05	NA	< 0.05	84%	50%	140%	95%	50%	140%	96%	50%	140%
Fluorene	2857693	2857693	< 0.05	< 0.05	NA	< 0.05	98%	50%	140%	98%	50%	140%	84%	50%	140%
Phenanthrene	2857693	2857693	0.36	0.26	32.3%	< 0.05	85%	50%	140%	96%	50%	140%	85%	50%	140%
Anthracene	2857693	2857693	0.20	0.14	NA	< 0.05	96%	50%	140%	85%	50%	140%	96%	50%	140%
Fluoranthene	2857693	2857693	1.18	0.87	30.2%	< 0.05	85%	50%	140%	89%	50%	140%	95%	50%	140%
Pyrene	2857693	2857693	1.23	0.84	37.7%	< 0.05	81%	50%	140%	98%	50%	140%	98%	50%	140%
Benz(a)anthracene	2857693	2857693	0.69	0.46	40.0%	< 0.05	85%	50%	140%	96%	50%	140%	96%	50%	140%
Chrysene	2857693	2857693	1.05	0.63	50.0%	< 0.05	98%	50%	140%	102%	50%	140%	84%	50%	140%
Benzo(b)fluoranthene	2857693	2857693	0.72	0.61	16.5%	< 0.05	98%	50%	140%	114%	50%	140%	85%	50%	140%
Benzo(k)fluoranthene	2857693	2857693	0.54	0.42	25.0%	< 0.05	102%	50%	140%	115%	50%	140%	99%	50%	140%
Benzo(a)pyrene	2857693	2857693	0.60	0.37	47.4%	< 0.05	98%	50%	140%	118%	50%	140%	95%	50%	140%
Indeno(1,2,3-cd)pyrene	2857693	2857693	0.28	0.20	NA	< 0.05	85%	50%	140%	112%	50%	140%	84%	50%	140%
Dibenz(a,h)anthracene	2857693	2857693	0.05	< 0.05	NA	< 0.05	96%	50%	140%	119%	50%	140%	85%	50%	140%
Benzo(g,h,i)perylene	2857693	2857693	0.29	0.21	NA	< 0.05	89%	50%	140%	120%	50%	140%	96%	50%	140%
O. Reg. 153(511) - PHCs F1 - F4 (with PAHs and VOC) (Soil)															
F1 (C6 - C10)	2849247		<5	<5	NA	< 5	98%	60%	140%	103%	60%	140%	111%	60%	140%
F2 (C10 to C16)	2863882		< 10	< 10	NA	< 10	102%	60%	140%	99%	60%	140%	81%	60%	140%
F3 (C16 to C34)	2863882		< 50	< 50	NA	< 50	102%	60%	140%	110%	60%	140%	86%	60%	140%
F4 (C34 to C50)	2863882		< 50	< 50	NA	< 50	92%	60%	140%	84%	60%	140%	80%	60%	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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QA Violation

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

AGAT WORK ORDER: 21Z787215

PROJECT: 64153.85

ATTENTION TO: Nicole Soucy

RPT Date: Aug 23, 2021

PARAMETER	Sample Id	Sample Description	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
			Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
				Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - Metals & Inorganics (Soil)											
Selenium		BH21-2 SA-2	133%	70%	130%	113%	80%	120%	115%	70%	130%

Comments: NA signifies Not Applicable.
pH duplicates QA acceptance criteria was met relative as stated in Table 5-15 of Analytical Protocol document.
Duplicate NA: results are under 5X the RDL and will not be calculated.

More than 90% of the elements met acceptance limits and overall data quality is acceptable for use. For a multi-element scan up to 10% of analytes may exceed the quoted limits by up to 10% absolute.

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Method Summary

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

AGAT WORK ORDER: 21Z787215

PROJECT: 64153.85

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Antimony	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Arsenic	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Barium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Beryllium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Boron	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Boron (Hot Water Soluble)	MET-93-6104	modified from EPA 6010D and MSA PART 3, CH 21	ICP/OES
Cadmium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Chromium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Cobalt	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Copper	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Lead	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Molybdenum	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Nickel	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Selenium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Silver	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Thallium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Uranium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Vanadium	MET-93-6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Zinc	MET 93 -6103	modified from EPA 3050B and EPA 6020B and ON MOECC	ICP-MS
Chromium, Hexavalent	INOR-93-6068	modified from EPA 3060 and EPA 7196	SPECTROPHOTOMETER
Cyanide, Free	INOR-93-6052	modified from ON MOECC E3015, SM 4500-CN- I, G-387	TECHNICON AUTO ANALYZER
Mercury	MET-93-6103	modified from EPA 7471B and SM 3112 B	ICP-MS
Electrical Conductivity (2:1)	INOR-93-6036	modified from MSA PART 3, CH 14 and SM 2510 B	EC METER
Sodium Adsorption Ratio (2:1) (Calc.)	INOR-93-6007	modified from EPA 6010D & Analytical Protocol	ICP/OES
pH, 2:1 CaCl2 Extraction	INOR-93-6031	modified from EPA 9045D and MCKEAGUE 3.11	PH METER
Arsenic Leachate	MET-93-6103	EPA 1311 & modified from EPA 6020B	ICP-MS
Barium Leachate	MET-93-6103	EPA 1311 & modified from EPA 6020B	ICP-MS
Boron Leachate	MET-93-6103	EPA 1311 & modified from EPA 6020B	ICP-MS
Cadmium Leachate	MET-93-6103	EPA 1311 & modified from EPA 6020B	ICP-MS
Chromium Leachate	MET-93-6103	EPA 1311 & modified from EPA 6020B	ICP-MS

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Method Summary

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

AGAT WORK ORDER: 21Z787215

PROJECT: 64153.85

ATTENTION TO: Nicole Soucy

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Lead Leachate	MET-93-6103	EPA 1311 & modified from EPA 6020B	ICP-MS
Mercury Leachate	MET-93-6103	EPA 1311 & modified from EPA 6020B	ICP-MS
Selenium Leachate	MET-93-6103	EPA 1311 & modified from EPA 6020B	ICP-MS
Silver Leachate	MET-93-6103	EPA 1311 & modified from EPA 6020B	ICP-MS
Uranium Leachate	MET-93-6103	EPA 1311 & modified from EPA 6020B	ICP-MS
Fluoride Leachate	INOR-93-6018	EPA 1311 & modified from SM4500-F-C	ION SELECTIVE ELECTRODE
Cyanide Leachate	INOR-93-6052	EPA 1311 modified from MOE 3015 SM 4500 CN-I,G387	TECHNICON AUTO ANALYZER
(Nitrate + Nitrite) as N Leachate	INOR-93-6053	EPA SW 846-1311 & modified from SM 4500 - NO3- I	LACHAT FIA

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Naphthalene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Acenaphthylene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Acenaphthene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Fluorene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Phenanthrene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Anthracene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Fluoranthene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Pyrene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benz(a)anthracene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Chrysene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benzo(b)fluoranthene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benzo(k)fluoranthene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benzo(a)pyrene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Indeno(1,2,3-cd)pyrene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Dibenz(a,h)anthracene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Benzo(g,h,i)perylene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
1 and 2 Methlynaphthalene	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Naphthalene-d8	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Acridine-d9	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Terphenyl-d14	ORG-91-5106	modified from EPA 3570 and EPA 8270E	GC/MS
Moisture Content	VOL-91-5009	CCME Tier 1 Method	BALANCE
F1 (C6 - C10)	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5009	modified from CCME Tier 1 Method	P&T GC/FID
Toluene-d8	VOL-91-5009	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
F2 (C10 to C16)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F2 (C10 to C16) minus Naphthalene	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F3 (C16 to C34)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F3 (C16 to C34) minus PAHs	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
F4 (C34 to C50)	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
Gravimetric Heavy Hydrocarbons	VOL-91-5009	modified from CCME Tier 1 Method	BALANCE
Terphenyl	VOL-91-5009	modified from CCME Tier 1 Method	GC/FID
Dichlorodifluoromethane	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Vinyl Chloride	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Bromomethane	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Acetone	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Methylene Chloride	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Trans- 1,2-Dichloroethylene	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Methyl tert-butyl Ether	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Cis- 1,2-Dichloroethylene	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Chloroform	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Benzene	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Trichloroethylene	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Bromodichloromethane	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Toluene	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Dibromochloromethane	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Tetrachloroethylene	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Chlorobenzene	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Ethylbenzene	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
m & p-Xylene	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Bromoform	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Styrene	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
o-Xylene	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Xylenes (Total)	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
1,3-Dichloropropene (Cis + Trans)	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
n-Hexane	VOL-91-5002	modified from EPA 5035C and EPA 8260D	(P&T)GC/MS
Toluene-d8	VOL-91-5002	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5002	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
Moisture Content	VOL-91-5009	modified from CCME Tier 1 Method	BALANCE

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LABORATORY USE ONLY LT: 4.2 4.0 3.8
Arrival Condition: ☐ Good ☐ Poor (complete "notes")
Arrival Temperature: 2.7 | 2.3 | 2.7 AGAT WO #: 21Z787215
Notes: ice . -3 coolers - 1 samples packed into one → 2 returned containers

Client Information
Company: GEMTEC
Contact: Rhian Fox
Address: 32 Steacie Drive, Ottawa, ON
Phone: 343-553-1600 Fax:
Project: 64153.85 PO:
AGAT Quotation #:
Please note, if quotation number is not provided, client will be billed full price for analysis.

Invoice To Same as Above? Yes/No (circle)
Company:
Contact:
Address:
Phone: Fax:

Report Information - reports to be sent to:
1. Name: Rhian Fox
Email: rhian.fox@gemtec.ca
2. Name:
Email:

Report Format
☐ Single Sample per page
☑ Multiple Samples per page
☐ Results by fax

Turnaround Time (TAT) Required*
Regular TAT:
☑ 5 to 7 Working Days
Rush TAT: (please provide prior notification)
Rush Surcharges Apply
☐ 3 to 5 Working Days
☐ 2 Working Days
☐ 1 Working Day
OR
DATE REQUIRED (Rush surcharges may apply):
*TAT is exclusive of weekends and statutory holidays

Regulatory Requirements
☑ Regulation 153 Table 1 (Indicate one) ☐ Ind/Com ☐ Res/Park ☐ Agriculture
Soil Texture (check one) ☐ Coarse ☐ Med/Fine
☐ Sewer Use Region ____ (Indicate one) ☐ Sanitary ☐ Storm
☐ Regulation 558
☐ CCME
☐ Other (indicate)
☐ Prov. Water Quality Objectives (PWQO)
☐ Nutrient Management Act (NMA)

Is this a drinking water sample (potable water intended for human consumption)? ☐ Yes ☐ No (If "Yes" please use the Drinking Water Chain of Custody Record)

Sample Identification	Date Sampled	Time Sampled	Sample Matrix	# of Containers	Comments Site/ Sample Information	Metals and Inorganics	Metal Scan (exclud. Hg, B, Cr6)	CCME Fractions 1 to 4	VOCs	PAHs	PCBs	TCLP Metals/Inorganics	TCLP	Storm Sewer Use	Sanitary Sewer Use	PHC F1-F4					LABORATORY USE ONLY LAB SAMPLE ID
TCLP-01	Aug 12		S	2								X									
TCLP-02	Aug 12		S	2								X									
BH21-1 SA-1	Aug 12		S	4			X			X											
BH21-2 SA-2	Aug 12		S	7		X			X	X						X					
BH21-2 SA-102	Aug 12		S	7		X			X	X						X					
BH21-3 SA-3	Aug 12		S	7		X			X	X						X					
BH21-4 SA-4	Aug 12		S	7		X			X	X						X					

Samples Relinquished By (print name & sign)	Date/Time	Samples Received By (print name & sign)	Date/Time
Rhian Fox	Augu 12/21	UBerthelet 2021/08/12	15h27
IB to Pino 2021/08/12 16h00		Avneet Minhas AM	Aug 14/21 11:21 am

Pink Copy – Client
Yellow + Golden Copy - AGAT
White Copy - AGAT

PAGE ____ of ____
NO:

Document ID: DIV-78-1511.004 Date Issued: September 22, 2009

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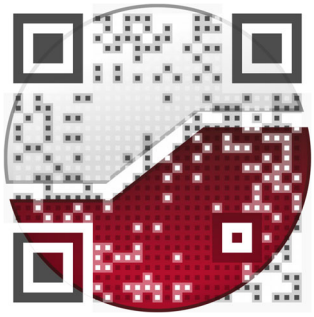

civil	civil
geotechnical	géotechnique
environmental	environnementale
field services	surveillance de chantier
materials testing	service de laboratoire des matériaux

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