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Phase Two Environmental Site Assessment
Zoning By-Law Amendment Application
6158 Rideau Valley Drive
Ottawa, Ontario

GEMTEC Project: 100011.082

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Submitted to:

Millers Farm
6158 Rideau Valley Drive North
Manotick, Ontario
K4M 1B3

Phase Two Environmental Site Assessment
Zoning By-Law Amendment Application
6158 Rideau Valley Drive
Ottawa, Ontario

September 4, 2024
GEMTEC Project: 100011.082

experience • knowledge • integrity

GEMTEC Consulting Engineers and Scientists Limited
32 Steacie Drive
Ottawa, ON, Canada
K2K 2A9

September 4, 2024 File: 100011.082

Millers Farm
6158 Rideau Valley Drive North
Manotick, Ontario
K4M 1B3

Attention: Jaime Mallory, Planner I, Development Review – Rural Services

Re: Phase Two Environmental Site Assessment
Zoning By-Law Amendment Application
6158 Rideau Valley Drive
Ottawa, Ontario

Enclosed is our Phase Two Environmental Site Assessment report for the above noted project. The report presented herein is based on the scope of work discussed in the proposal dated June 11, 2024. This report was prepared by Mohit Bhargav, M.Sc.E, EIT, and reviewed by Nicole Soucy, M.A.Sc., P.Eng, QP_{ESA}.

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

Mohit Bhargav, M.Sc.E., EIT
Environmental Scientist

Nicole Soucy, M.A.Sc., P.Eng, QP_{ESA}
Environmental Engineer

MB/NS

Enclosures
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EXECUTIVE SUMMARY

GEMTEC Consulting Engineers and Scientists Limited (GEMTEC) was retained by the Owners of 6158 Rideau Valley Drive to carry out a Phase Two Environmental Site Assessment (ESA) for a portion of the property located at 6158 Rideau Valley Drive in Ottawa, Ontario. It is understood that this Phase Two ESA is required to support a minor zoning by-law amendment application with the City of Ottawa.

The proposed area (herein referred to as the 'Site') to be rezoned through a minor zoning by-law amendment application fronts along Rideau Valley Drive up to a municipal drain (McIntyre Scobie Drain). The Site is not considered an enhanced investigation property as defined under Ontario Regulation (O.Reg.) 153/04, as amended. The land use of the Site will not be changing to a more sensitive land use, and therefore it is anticipated the filing of a Record of Site Condition (RSC) under O.Reg. 153/04 will not be required. The Phase Two ESA was carried out in general accordance with O.Reg. 153/04, as amended.

GEMTEC completed a Phase One ESA at the Site in June 2024. The findings of the Phase One ESA are provided under a separate cover entitled:

- Phase One Environmental Site Assessment, Zoning By-Law Amendment Application, 6158 Rideau Valley Drive, Ottawa, Ontario. GEMTEC Project 100011.082.

A Phase Two ESA was recommended to address the three areas of potential of environmental concern (APECs) identified on the Site as part of Phase One ESA (GEMTEC, June 2024). The APECs identified during the Phase One ESA investigation are provided below.

APEC #	APEC	Location of APEC on the Site	PCA	Location of PCA (On-Site and/or Off-Site)	COPCs	Media Potentially Impacted (Soil, Groundwater and/or Sediments)
1	Presence of Oil Water Separator and general maintenance of farm equipment at Structure 7.	Along the western building line of Building Workshop (Structure 7)	OT 1	On-Site	PHC F1-F4, VOCs, PAHs	Soil Groundwater
2	Presence of Aboveground Storage Tanks (ASTs)	Along the western building line of Storage Shed (Structure 3)	28	On-Site	PHC F1-F4, BTEX, PAHs	Soil Groundwater

APEC #	APEC	Location of APEC on the Site	PCA	Location of PCA (On-Site and/or Off-Site)	COPCs	Media Potentially Impacted (Soil, Groundwater and/or Sediments)
3	Bulk Salt Storage	Building footprint of Storage Shed (Structure 9)	48	On-Site	EC, SAR Sodium, Chloride	Soil Groundwater

Notes:
28. Gasoline and Associated Products Storage in Fixed Tanks
48. Salt Manufacturing, Processing and Bulk Storage
OT 1: Presence of an Oil Water Separator
PCA – Potentially Contaminating Activities
COPCs – Contaminants of Potential Environmental Concern
PHC F1-F4 – Petroleum Hydrocarbons F1-F4
BTEX – Benzene, Toluene, Ethylbenzene, and Xylene
EC – Electrical Conductivity
SAR – Sodium Adsorption Ratio
VOCs – Volatile Organic Compounds
PAHs – Polycyclic Aromatic Hydrocarbons

Six boreholes (labelled BH24-01 through BH24-06) were advanced by Strata Drilling Group using a Geomachine GM100 to depths ranging between 3.65 m below ground surface (bgs) to 6.10 m bgs as part of the Phase Two ESA investigation on July 18, 2024. The macro core soil samples were obtained at regular depth intervals and logged in the field noting subsurface. Four out of six locations were installed with groundwater monitoring wells (labelled BH/MW24-01, BH/MW24-03, BH/MW24-04, and BH/MW24-05) as part of the investigation.

The subsurface soil conditions encountered in the boreholes generally consisted of brown silty sand with varying amounts of gravel from BH24-01 to BH24-04 whereas the subsurface soil conditions at BH24-05 and BH24-06 consisted of brown silty sand with varying amounts of gravel underlain by silty clay.

A total of ten soil samples were collected and analyzed for one or more of the following contaminants of potential concern (COPCs): Electrical Conductivity (EC), Sodium Adsorption Ratio (SAR), pH, Petroleum Hydrocarbons F1-F4 (PHC F1-F4), Volatile Organic Compounds (VOCs), Polycyclic Aromatic Hydrocarbons (PAHs), Benzene, Toluene, Ethylbenzene, and Xylene (BTEX).

A total of five groundwater samples were collected and analyzed for one or more of the following contaminants of potential concern (COPCs): Sodium, Chloride, PHC F1-F4, VOCs, and PAHs in addition to one field blank and one trip blank submission for PHC F1 and VOCs.

The soil analytical results were compared to Table 2 Full Depth Generic Site Condition Standards (SCS) in a Potable Ground Water Condition for Residential/Parkland/Institutional (RPI) land use with coarse textured soil. The groundwater analytical results were compared to Table 2 Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for All Types of Property Use with coarse textured soil.

No exceedances were reported for soil samples except for SAR sample collected from BH24-01. As per Section 48(2) of O. Reg. 153/04, if two or more samples of soil are taken from sampling points at the same sampling location that are at the same depth under the property, the property meets a standard mentioned in subsection (1) if the average of the sampling results meets the standard and in no other circumstances. Based on this consideration, averaging was applied to the two samples that were collected from BH24-01 i.e., SA5 and SA105. The average value resulting between the two samples is 2.75, and therefore would not be considered an exceedance at the Site.

No exceedances of O.Reg. 347/558 Schedule 4 were identified in the leachate (Toxicity Characteristic Leaching Procedure (TCLP)) sample.

No exceedances for groundwater samples were noted at any of the sampling locations.

Based on the above-noted findings, no additional work is recommended at this time.

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1.0 INTRODUCTION

GEMTEC Consulting Engineers and Scientists Limited (GEMTEC) was retained by the Owners of 6158 Rideau Valley Drive to carry out a Phase Two Environmental Site Assessment (ESA) for a portion of the property located at 6158 Rideau Valley Drive in Ottawa, Ontario. It is understood that this Phase Two ESA is required to support a minor zoning by-law amendment application with the City of Ottawa.

The proposed area (herein referred to as the 'Site') to be rezoned through a minor zoning by-law amendment application fronts along Rideau Valley Drive up to a municipal drain (McIntyre Scobie Drain). The Site is not considered an enhanced investigation property as defined under Ontario Regulation (O.Reg.) 153/04, as amended. The land use of the Site will not be changing to a more sensitive land use, and therefore it is anticipated the filing of a Record of Site Condition (RSC) under O.Reg. 153/04 will not be required. The Phase Two ESA was carried out in general accordance with O.Reg. 153/04, as amended.

GEMTEC previously completed a Phase One ESA for the Site titled 'Phase One Environmental Site Assessment, Zoning By-Law Amendment Application, 6158 Rideau Valley Drive, Ottawa, Ontario' dated June 12, 2024. The findings for the Phase One ESA are provided under a separate cover. As summarized in the Phase One ESA, GEMTEC recommended a Phase Two ESA be completed for the Site.

The approximate boundaries and the location of the Site are provided on Figure A.1, Appendix A.

1.1 Site Description

The Site covers an approximate area of 44,400 square metres (m^2) and is occupied by nine structures owned and operated by 'Millers Farm and Market'. Based on the available aerial photographs, the Site was first developed sometime circa 1946 considering two structures were present in the southern portion of the Site (current location of Two Storey Barn (Structure 1) and Residential Building (Structure 2)) and the land use at the Site was agricultural. Historical land use in the Phase One Study Area (or Study Area) was predominately agricultural and rural residential with community right of ways (i.e., roadways). The Site features (including structures) are shown in Figure A.2, Appendix A.

1.2 Site Ownership

The details for the Site are summarized in Table 1.1.

Table 1.1: Legal Description and Site Information

Site Information	
Legal Description[1]	PART OF LOT 13, CONCESSION BF, AKA CON ABF, BEING PARTS 2 AND 4 ON 5R6592, EXCEPT PART 1 ON 4R18840, OTTAWA. S/T NS171551

Site Information	
PIN	03909-0149 (LT)
Site Owner	Ronald Miller and Suzzanne Miller
Site Contact	Mr. David Beveridge

Note:
1. The legal description provided for the Site also includes the legal description for 6158 Rideau Valley Drive, a much larger land parcel.

1.3 Current and Proposed Future Uses

Currently the Site is occupied by nine structures which are owned by Ronald Miller and Suzzanne Miller and operated as Millers Farm and Market. The Site was used for agricultural purposes historically and the current use encompasses a combination of agricultural activities (including market gardening, chicken coops, and the operation of greenhouses) as well as commercial operations (such as a sales shop, and landscape soil depot). The future land use is not anticipated to change.

1.4 Applicable Site Condition Standards

1.4.1 Soil and Groundwater Standards

Site Condition Standards (SCS) were selected for the Site in accordance with the requirements of O.Reg. 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 relevant Site characteristics were considered in the selection of the applicable regulatory criteria are as follows:

- Land Use: The Site is currently used for a combination of agricultural activities (including market gardening, chicken coops, and the operation of greenhouses) as well as commercial operations (such as a sales shop). The future land use is expected to be the same. However, a residential building (Structure 2) is present on-Site. Therefore, the land use for the Site is considered Agricultural or Other Property Use.
- Soil Texture: Based on visual observations made during the Environmental Field Investigation (field program/environmental investigation), coarse grained soils are present on-Site. Coarse textured soil is defined by Section 42(1) of O. Reg.153/04 as ‘soil that contains 50 percent or more by mass of particles that are greater than 75 micrometres in mean diameter’. Accordingly, coarse textured soils have been considered applicable for the 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 intrusive investigation, the Site is not considered a shallow soil property as the overburden thickness is greater than 2 m for more than two-thirds of the Site. The property does not include a water body nor is it located within 30 metres of a water body.

- Groundwater Use: The Site and adjacent properties rely on groundwater as a potable source of water. Through review of the Ontario Water Well records, potable domestic wells were identified within 250 m the of the Site. Accordingly, the Site has been considered to be situated within a potable water well zone.
- 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.

Through a review of samples submitted for analysis during the field program, the pH values were within range for surface soil and subsurface soil. Therefore, the Site is not considered to be an environmentally sensitive site. Additionally, no water bodies or Areas of Natural and Scientific Interest (ANSIs) were identified on or within 30 m of the Site. McIntyre Scobie Drain, a municipal drain and not a permanent water body, is present along the west edge of the Site and the Rideau River is present approximately 400 m northeast of the Site.

Based on the review of Site characteristics, the following provincial standards were considered to be applicable to the analytical results obtained during the field investigation:

- Soil: MECP, 2011. Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act. Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for Agricultural or Other Property Use (Agri) land use with coarse textured soil.
- Groundwater: MECP, 2011. Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act. Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for All Types of Property Use with coarse textured soil.

1.4.2 Soil Waste Classification

The following provincial standards were considered to be applicable to the soil analytical results obtained during the environmental investigation to confirm off-Site disposal requirements:

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

2.0 BACKGROUND INFORMATION

This section presents the background conditions of the Site including a description of the physical setting and a summary of past investigations conducted.

The objectives of the Phase Two ESA were to obtain information about environmental conditions in the soil and groundwater on, in or under the Site, and to develop the information necessary to complete the Phase Two ESA for the Site. The objectives of this Phase Two ESA were achieved by:

- Developing an understanding of the geological and hydrogeological conditions at the Site; and,
- Conducting field sampling for all contaminants of potential concern (COPCs) associated with the areas of potential environmental concern (APECs) identified in the Phase One ESA (GEMTEC, June 2024).

2.1 Physical Setting

The Site has a relatively flat topography and is at an elevation of approximately 88 metres (m) above sea level (asl). The Site has a topographic high point and gradually slopes either towards Rideau Valley Drive (located to the east of the Site) or McIntyre Scobie Drain (located to the west of the Site). Surrounding local topography generally slopes gradually downwards towards Rideau River which is located approximately 400 m northeast of the Site.

Overburden is generally mapped as fine-textured glaciomarine deposits (i.e., silt and clay, minor sand and gravel) and stone-poor, sandy silt to silty sand-textured till with a thickness ranging from 15 to 25 m. The bedrock is mapped as dolostone, and sandstone of Beekmantown Group.

No provincially significant wetlands (PSWs) or ANSIs were identified on the Site.

The physical setting for the Site is consistent based on GEMTEC's observation during the Phase Two ESA field program.

2.2 Past Investigations

A Phase One ESA was completed by GEMTEC for the Site and is summarized below.

2.2.1 Phase One Environmental Site Assessment

GEMTEC conducted a Phase One ESA titled 'Phase One Environmental Site Assessment, Zoning By-Law Amendment Application, 6158 Rideau Valley Drive, Ottawa, Ontario' dated June 2024 to assess the likelihood of soil and/or groundwater contamination resulting from historical or present activities at the Site and surrounding area. This included a review of available historical information on the Site and surrounding area, interviews with persons familiar with the Site and a Site reconnaissance. Based on this report, several potentially contaminating activities (PCAs) were identified resulting in three APECs at the Site.

Figure A.3, Appendix A illustrates the location of the PCAs and the APECs. The APECs identified in the Phase One ESA (GEMTEC, June 2024) are summarized in Table 2.1.

Table 2.1: APECs as per Phase One ESA (GEMTEC, June 2024)

APEC #	APEC	Location of APEC on the Site	PCA	Location of PCA (On-Site and/or Off-Site)	COPCs	Media Potentially Impacted (Soil, Groundwater and/or Sediments)
1	Presence of Oil Water Separator and general maintenance of farm equipment at Structure 7.	Along the western building line of Building Workshop (Structure 7)	OT 1	On-Site	PHC F1-F4, VOCs, PAHs	Soil Groundwater
2	Presence of Aboveground Storage Tanks (ASTs)	Along the western building line of Storage Shed (Structure 3)	28	On-Site	PHC F1-F4, BTEX, PAHs	Soil Groundwater

APEC #	APEC	Location of APEC on the Site	PCA	Location of PCA (On-Site and/or Off-Site)	COPCs	Media Potentially Impacted (Soil, Groundwater and/or Sediments)
3	Bulk Salt Storage	Building footprint of Storage Shed (Structure 9)	48	On-Site	EC, SAR Sodium, Chloride	Soil Groundwater

Notes:

28. Gasoline and Associated Products Storage in Fixed Tanks
48. Salt Manufacturing, Processing and Bulk Storage
OT 1: Presence of an Oil Water Separator
PHC F1-F4 – Petroleum Hydrocarbons F1-F4
BTEX – Benzene, Toluene, Ethylbenzene, and Xylene
EC – Electrical Conductivity
SAR – Sodium Adsorption Ratio
VOCs – Volatile Organic Compounds
PAHs – Polycyclic Aromatic Hydrocarbons

3.0 SCOPE OF THE INVESTIGATION

3.1 Overview of the Phase Two ESA Investigation

The Phase Two ESA investigation activities were completed between July 18, 2024, and August 2, 2024. The Phase Two ESA included the following tasks:

- **Health and Safety Plan:** Preparation of a Health and Safety Plan for internal and subcontractor use prior to initiating any field work at the Site;
- **Utility Clearances:** Coordination of utility clearances with local utility companies along with retaining the services of a private locator to assess for possible services in the areas of the proposed borehole locations;
- **Sampling and Analysis Plan (SAP):** Preparation of an informal SAP to document the purpose, rationale, number and location of samples to be recovered as part of the Phase Two ESA investigation. More details are available in Section 4.2;
- **Borehole Advancement and Monitoring Well Installation:** The Phase Two ESA investigation activities included the drilling of six boreholes and completion of four of the boreholes as monitoring wells. The locations of the boreholes and monitoring well are provided in Figure A.4, Appendix A;
- **Soil Sampling:** Soil samples were collected on July 18, 2024 from the boreholes. Eight soil samples were submitted for chemical analysis of one or more of the following COPCs:
  - Petroleum Hydrocarbon (PHC) Four Fractions (F1-F4);
  - Volatile Organic Compounds (VOCs);
  - Electrical conductivity (EC);

    - Sodium adsorption ratio (SAR);
    - pH;
    - Polycyclic Aromatic Hydrocarbons (PAHs); and,
    - Benzene, Toluene, Ethylbenzene, and Xylene (BTEX).
    - Details of COPCs with respect to the sampling locations is available in Section 4.2.
- **Groundwater Monitoring and Sampling:** Five groundwater samples were collected on August 2, 2024 from the monitoring wells. The groundwater samples were submitted for chemical analysis of one or more of the following COPCs:
    - PAHs;
    - PHC F1-F4;
    - BTEX;
    - VOCs;
    - Sodium and Chloride; and,
    - Field Blank and Trip Blank for PHC F1/VOCs.
    - Details of COPCs with respect to the sampling locations is available in Section 4.2.
- **Surveying:** An elevation survey for boreholes and monitoring wells was completed using a high precision digital GPS (Trimble R10); and,
- **Reporting:** GEMTEC compiled and assessed the field and laboratory results from the above-noted activities into this report.

The Phase Two ESA was carried out in general accordance with GEMTEC's standard operating procedures, which conform to the requirements of O. Reg. 153/04.

3.2 Media Investigated

The Phase Two ESA field program included sampling of subsurface soil from boreholes and groundwater from the monitoring wells to address the potential environmental issues identified in the Phase One ESA.

No sediment was present at the Site and, therefore, no sediment sampling was completed.

3.3 Phase One ESA Conceptual Site Model

The following describes the Phase One ESA Conceptual Site Model (CSM) based on the information obtained and reviewed as part of the Phase One ESA (GEMTEC, June 2024).

- The Site is a portion of the property located at 6158 Rideau Valley Drive in Ottawa, Ontario and covers an approximate area of 44,400 m^2. A total of nine structures are present on the Site and the Site features (including structures) are shown in Figure A.2, Appendix A.
- Based on the available aerial photographs, the Site was first developed sometime circa 1946 considering two structures were present in the southern portion of the Site (current location of Two Storey Barn (Structure 1) and Residential Building (Structure 2)) and the land use at the Site was agricultural. Historical land use in the Phase One Study Area was

predominately agricultural and rural residential with community right of ways (i.e., roadways).

- Current surrounding land uses include agricultural, community, and residential;
- The Site and nearby developed properties are serviced with natural gas and overhead hydro. Groundwater is used as the source of potable water in the study area;
- The elevation of the Site approximately 88 m asl. The Site has a topographic high point and gradually slopes either towards Rideau Valley Drive (located to the east of the Site) or McIntyre Scobie Drain (located to the west of the Site). Surrounding local topography generally slopes gradually downwards towards Rideau River which is located approximately 400 m northeast of the Site.
- Overburden is generally mapped as fine-textured glaciomarine deposits (i.e., silt and clay, minor sand and gravel) and stone-poor, sandy silt to silty sand-textured till with a thickness ranging from 15 to 25 m.
- The bedrock is mapped as dolostone, and sandstone of Beekmantown Group.
- Shallow groundwater direction is interpreted to be to the eastwards towards Rideau River.
- No ANSIs were identified on the Site or within the study area; and,
- Based on the review of records, the interview and the Site reconnaissance completed as part of the Phase One ESA, GEMTEC identified several PCAs resulting in three APECs on the Site. These APECs include:
    - APEC 1 – Presence of Oil Water Separator and general maintenance of farm equipment at Structure 7. This APEC is limited to the western building line of Building Workshop (Structure 7). The COPCs are PHC F1-F4, VOCs, and PAHs, in soil and groundwater.
    - APEC 2 – Presence of ASTs. This APEC is limited to the western building line of Storage Shed (Structure 3). The COPCs are PHC F1-F4, BTEX, and PAHs in soil and groundwater.
    - APEC 3 – Bulk Salt Storage. This APEC is limited to the footprint of Storage Shed (Structure 9). The COPCs are EC and SAR in soil and sodium and chloride groundwater.

3.4 Deviations from Sampling and Analysis Plan

No deviations to the sampling and analysis plan occurred during the Phase Two ESA investigation.

3.5 Impediments

No physical impediments to the Phase Two ESA investigation were encountered.

4.0 INVESTIGATION METHOD

The following sections describe the field investigation methodology employed during the Phase Two ESA. The field work was conducted between July 18, 2024, and August 2, 2024.

4.1 General

Prior to initiating the field work, GEMTEC developed and implemented Site-specific protocols to protect the health and safety of its employees and subcontractors through the preparation of a Site-specific Health and Safety Plan. Additionally, GEMTEC completed public and private utility clearances.

4.2 Borehole Drilling

On July 18, 2024, six boreholes (labelled BH24-01 through BH24-06) were advanced to depths ranging between 3.65 m below ground surface (bgs) and 6.10 m bgs. Borehole locations (with respect to APECs) are provided in Figure A.4, Appendix A.

Boreholes BH24-01 to BH24-06 were advanced using a track mounted Geomachine GM100 supplied and operated by Strata Drilling Group (Strata). During drilling, a macro core soil sampling system utilizing direct-push technology with disposable 5.71 cm (2-1/4 inch) polyvinyl chloride (PVC) tube liners which fit inside a 6.26 cm (3-1/4 inch) outer stainless-steel tube were used to sample the overburden soil. The macro core soil samples were obtained at regular depth intervals and logged in the field noting subsurface. Table 4.1 summarizes the location of boreholes advanced as part of the Phase Two ESA.

Table 4.1: Borehole locations with investigated APECs

Borehole ID	MW Installation Required	APEC Investigated	COPCs - Soil	COPCs – GW
BH/MW24-1	✓	APEC 3	EC, SAR	Sodium, Chloride
BH24-2	X	APEC 3	EC, SAR	--
BH/MW24-3	✓	APEC 2	PHC F1-F4, BTEX, PAHs	PHC F1-F4, BTEX, PAHs
BH/MW24-4	✓	APEC 2	PHC F1-F4, BTEX, PAHs	PHC F1-F4, BTEX, PAHs
BH/MW24-5	✓	APEC 1	PHC F1-F4, VOCs, PAHs	PHC F1-F4, VOCs, PAHs
BH24-6	X	APEC 1	PHC F1-F4, VOCs, PAHs	--

Notes:

APEC 1 – Presence of Oil Water Separator and general maintenance of farm equipment at Structure 7.
APEC 2 – Presence of ASTs.
APEC 3 – Bulk Salt Storage.
EC – Electrical Conductivity
SAR – Sodium Adsorption Ratio
PHC F1-F4 – Petroleum Hydrocarbon F1-F4
BTEX – Benzene, Toluene, Ethylbenzene, and Xylene
VOCs – Volatile Organic Compounds
PAHs – Polycyclic Aromatic Hydrocarbons

4.3 Soil Sampling

Soil samples were collected from the six boreholes following the Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario (MOE, 1996). Soil samples were recovered at regular intervals during drilling and were split in the field into two components. One component was placed into laboratory prepared containers, one preserved with methanol and the other packed with soil for minimal headspace, then stored in a cooler for potential laboratory analysis. The second component was placed inside a plastic bag for field screening, consisting of the soil description, and noting the presence of any staining, odour and/or debris. A gas detector (RKI Eagle 2) was used to measure the total organic vapour and combustible gas concentrations in the headspace in the sealed plastic bag. Clean gloves were worn and changed between each sample to prevent cross contamination.

Geologic descriptions, visual and olfactory observations, and results of field headspace measurements are presented on the Record of Borehole Logs in Appendix B.

4.4 Field Screening Measurements

Field measurements of sample headspace concentration were made using the equipment detailed in Table 4.2.

Table 4.2: RKI Eagle 2 details for field screening

Equipment	Parameters Detected	Detection Limit	Precision	Accuracy	Calibration Standard
RKI Eagle 2	Combustible gas	0-50,000 ppm	NA	±5%	Hexane (1650 ppm)
	Total organic vapour	0-2,000 ppm	NA	±5%	Isobutylene (100 ppm)

Hexane readings varied between 0 ppm and 1100 ppm whereas IBL readings varied between 0 ppm and 1 ppm. The results of soil headspace screening measurements are provided in the Record of Borehole Logs in Appendix B.

Soil samples at each sampling location were selected for laboratory analysis based on the field headspace screening measurements, visual observations (e.g., staining, discoloration and/or free product, if any), and olfactory observations (if any). Soil samples were submitted to the analytical laboratory under chain-of-custody procedures. No staining, discoloration or free product was noted during the investigation.

4.5 Groundwater - Monitoring Well Installation

Four groundwater monitoring wells (labelled BH/MW24-1, BH/MW24-3, BH/MW24-4, and BH/MW24-5) were installed by Strata using threaded 51 mm diameter, schedule 40, PVC well screens and riser pipe, which were brought to the Site in sealed plastic bags. The annular space was filled with silica filter sand to at least 0.30 m above the well screen. The monitoring wells were sealed with bentonite from the top of the sand pack and completed as a flushmount for all monitoring wells. The riser pipes were sealed with a J-plug.

4.6 Groundwater - Field Measurements for Water Quality Parameters

The field measurements for the groundwater monitoring wells were taken on July 26, 2024, and August 2, 2024. The measurements included measurement of the water level and the bottom of the monitoring well from the top of the riser pipe using an electronic water level tape.

Physical parameters including pH, temperature, conductivity (EC), dissolved oxygen (DO), and oxidation redox potential (ORP) were monitored during groundwater collection using a Horiba Water Quality Meter.

4.7 Groundwater - Development, Purging and Sampling

Monitoring well development was conducted on July 26, 2024, which included removal of a minimum of three well volumes or to dry three times from each monitoring well. Well development activities were performed using dedicated Waterra® tubing and foot valves.

Monitoring well purging and sampling was conducted on August 2, 2024, which included monitoring well sampling using low flow techniques using a GeoPump peristaltic pump. Physical parameters pH, temperature, EC, DO, and ORP were monitored and stabilized before groundwater sample collection. During purging and sampling, qualitative observations were made of water colour, clarity, and the presence of hydrocarbon sheen or odour. Groundwater samples were collected from the monitoring wells directly into laboratory supplied bottles using a peristaltic pump with disposable tubing.

4.8 Sediment Sampling

No sediment samples were collected as part of this investigation as no surface water bodies were identified at the Site.

4.9 Laboratory Analytical Program

All samples were stored and transported in laboratory supplied coolers with ice. Soil and groundwater samples were submitted to AGAT Laboratories Ltd. (AGAT) of Ottawa, Ontario, for analysis of the COPCs. 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. The laboratory meets the ISO/IEC 17025 (2017) standards 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. The details of COPCs with respect to the sampling locations is available in Section 4.2.

4.10 Residue Management

All soil from drilling operations were collected for screening and sampling. Any additional cuttings were stored in soil drums on-Site. Water generated during monitoring well development and sampling was stored in water barrels on-Site. The soil and groundwater drums were disposed off at the Site following receipt and review of soil and groundwater results. All equipment used for sampling was single use and/or disposable, therefore, no wash water was generated during the investigation.

4.11 Surveying

The ground surface elevations at the location of the boreholes (ground surface) 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.4, Appendix A.

4.12 Quality Assurance / Quality Control Program

GEMTEC's quality assurance program for environmental investigations was implemented to ensure that analytical data obtained by the investigation were valid and representative. The quality assurance program included the following measures:

- The use of standard operating procedures for all field investigation activities;
- Soil samples were handled and stored in accordance with the sample collection and preservation requirement of the MECP "Protocol for Analytical Methods Used in the Assessment of Properties Under Part XV.I of the Environmental Protection Act", July 1, 2011. Samples were collected directly into pre-cleaned, laboratory-supplied sample containers with the appropriate preservative for the analyte group. Upon collection, samples were placed in insulated coolers with ice for storage and transport to the analytical laboratory under chain-of-custody;

- The collection of field duplicate samples at a minimum frequency of one duplicate for every ten samples;
- The monitoring wells were to be developed following installation to remove fine particles from the filter pack and any fluids introduced during drilling;
- Monitoring wells were to be appropriately purged prior to groundwater sample collection to remove stagnant water from the well bore and improve sample representativeness, minimizing sample agitation and aeration to the extent practicable;
- A field blank and a trip blank were collected for PHC F1 and VOCs during the groundwater sampling event;
- Clean disposable Nitrile™ gloves were used at each sampling location to prevent cross-contamination;
- Detailed field records documenting the methods and circumstances of collection for each field sample were prepared at the time of sample collection. Each sample was assigned a unique sample identification number recorded in the field notes, along with the date and time of sample collection, the sample matrix, and the requested analyses; and,
- The submission of samples to the analytical laboratory in accordance with standard chain of custody procedures.

5.0 REVIEW AND EVALUATION

This section of the report presents a review and evaluation of the results of the drilling, monitoring, and sampling activities conducted as part of the Phase Two ESA.

5.1 Geology

The soil conditions encountered during the borehole drilling program are presented in the Record of Borehole Logs provided in Appendix B.

The soil stratigraphy was visually observed and logged during the field investigation. The Record of Borehole Logs indicate the subsurface conditions encountered at the specific 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. The following presents an overview of the subsurface conditions encountered in the boreholes advanced as part of this investigation.

The subsurface soil conditions encountered in the boreholes advanced as part of this Phase Two ESA generally consisted of brown silty sand with varying amounts of gravel from BH24-01 to BH24-04 whereas the subsurface soil conditions at BH24-05 and BH24-06 consisted of brown

silty sand with varying amounts of gravel underlain by silty clay. The Record of Borehole Logs are provided in Appendix B.

5.2 Groundwater - Elevations and Flow Direction

Groundwater elevations were calculated based on depth to groundwater measurements collected on August 2, 2024. Groundwater depths were measured directly from the top of each monitoring well riser using an electronic water level tape. Depth measurements were converted to groundwater elevations by subtracting the measured depth from the elevation of the top of each monitoring well riser.

All the monitoring wells were installed to straddle the anticipated water table based on conditions observed during drilling. The well screens were located within the overburden for all the monitoring wells. No free product was identified in and of the monitoring wells.

The location of these monitoring wells is shown in Figure A.4, Appendix A. The details of these monitoring wells are provided in Table 5.1.

Table 5.1: Monitoring Well details

MW ID	Soil stratigraphy at Screen	Water Level (m Top of Casing)	Height of riser pipe (m)	Ground Elevation (m)	GW Elevation (m)
MW24-1	Overburden	3.36	0.10	93.43	89.97
MW24-3	Overburden	1.36	0.11	91.17	89.70
MW24-4	Overburden	1.46	0.12	91.41	89.83
MW24-5	Overburden	3.14	0.02	91.61	88.45

Groundwater elevations ranged from 88.45 and 89.97 m asl on August 2, 2024. The inferred direction of shallow groundwater flow is generally to the southwest based on the interpreted groundwater elevation contours presented in Figure A.5, Appendix A.

Seasonal fluctuation in water levels at the Site should be expected. Considering only one monitoring event was conducted, seasonal trends could not be identified; however, shallow groundwater water levels are typically highest following the spring recharge and decline throughout the summer and fall months into the winter.

5.3 Groundwater: Hydraulic Gradients

The horizontal hydraulic gradient between well sets is presented in Table 5.2. The horizontal hydraulic gradient was estimated for shallow groundwater conditions based on water levels

measured on August 2, 2024, and the inferred groundwater contours are presented in Figure A.5, Appendix A.

Table 5.2: Hydraulic gradients between monitoring well sets

MW ID	MW ID	Distance between MWs (m)	Difference in GW elevation (m)	Horizontal Hydraulic Gradient (m/m)
BH/MW24-01	BH/MW24-03	37	0.27	0.0073
BH/MW24-03	BH/MW24-04	10	0.13	0.0130
BH/MW24-04	BH/MW24-05	77	1.38	0.0180
BH/MW24-05	BH/MW24-01	100	1.52	0.0152

The average horizontal hydraulic gradient for shallow groundwater conditions was 0.0133 m/m. Vertical hydraulic gradient for shallow groundwater conditions were not calculated as nested monitoring wells were not installed at the Site.

5.4 Soil Texture

The predominant soil grain size at the Site was assumed to be coarse-textured based on the observations made during the field investigation.

5.5 Soil - Field Screening

Headspace vapour measurements were conducted on the soil samples collected from each of the boreholes advanced at the Site. The results of headspace vapour measurements are presented in the Record of Borehole Logs in Appendix B.

5.6 Soil - Quality

Soil sampling at the Site was completed during borehole advancement on July 18, 2024. The analytical results of soil samples are presented in Table C.1 and Table C.2, Appendix C. The soil samples were submitted to AGAT for analysis of one or more of the following parameters: EC, SAR, PHC F1-F4, BTEX, VOCs and/or PAHs.

No exceedances were reported for soil samples except for SAR sample collected from BH24-01. As per Section 48(2) of O. Reg. 153/04, if two or more samples of soil are taken from sampling points at the same sampling location that are at the same depth under the property, the property meets a standard mentioned in subsection (1) if the average of the sampling results meets the standard and in no other circumstances. Based on this consideration, averaging was applied to the two samples that were collected from BH24-01 i.e., SA5 and SA105. The average value resulting between the two samples is 2.75, and therefore would not be considered an exceedance at the Site.

Table C.3, Appendix C contains soil analytical data for leachate analysis (Toxicity Characteristic Leaching Procedure (TCLP)). No exceedances of O.Reg. 347/558 Schedule 4 were identified in the TCLP sample submitted.

Laboratory Certificates of Analysis for the soil samples are included in Appendix D.

5.7 Groundwater – Quality

Groundwater sampling at the Site was completed on August 2, 2024. The analytical results of groundwater samples are presented in Table C.4 and Table C.5, Appendix C. The groundwater samples were submitted to AGAT for analysis of one or more of the following parameters: Sodium, Chloride, PHC F1-F4, BTEX, VOCs and/or PAHs. One field blank sample and one trip blank samples were also submitted for PHC F1/VOCs.

No exceedances were identified based on the review of groundwater analytical results to MECP Table 2 All Types of Property Use SCS with coarse-textured soils.

Laboratory Certificates of Analysis for the soil samples are included in Appendix D.

5.8 Sediment - Quality

No sediment samples were collected as part of this investigation.

5.9 Quality Assurance and Quality Control Results

The quality assurance assessment of the field duplicate sample results was conducted according to the MECP document “Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act”, March 9, 2004 (amended in July 2009 and effective as of July 1, 2011) (“Analytical Protocol”).

Three sets of parent and duplicate samples were collected as per Table 5.3.

Table 5.3: Parent and duplicate samples

Date	Media	Sample ID	Duplicate ID
July 18, 2024	Soil	BH24-01 SA5	BH24-01 SA105
July 18, 2024	Soil	BH24-05 SA7	BH24-05 SA107
August 2, 2024	Groundwater	MW-4	MW-104

The analytical results of the parent and duplicate soil samples indicated a satisfactory correlation between the parent and duplicate samples as per the Analytical Protocol except for Conductivity at BH24-01. The inconsistencies identified in the duplicate RPD samples are presumably related to the heterogeneous nature of soil. The calculated RPDs for all of the soil samples and their

duplicates do not suggest inconsistencies in the field collection or the laboratory analysis methods. The Relative Percentage Difference is shown for the parent and the duplicate samples in Table C.6, Appendix C for soil and Table C.7, Appendix C for groundwater.

A certificate of analysis or analytical report has been received for each sample submitted for analysis and is provided in Appendix D. Laboratory QA/QC protocols were within acceptable limits and no analytical flags were provided.

Accordingly, the analytical data generated during the investigation are valid and representative and may be used in this Phase Two ESA without further qualification.

5.10 Phase Two Conceptual Site Model

The Phase Two ESA conceptual site model (CSM) is presented in the following sections.

The Phase Two CSM was prepared in accordance with Schedule E, Part V, Table 1, Section 6, Sub-heading (x) of Ontario Regulation 153/04 (O. Reg. 153/04) and is described in the text below and in the following figures:

- Figure A.1 Site and Study Area Features
- Figure A.2 Site Features
- Figure A.3 Potentially Contaminating Activities and Areas of Potential Environmental Concern
- Figure A.4 Location of Boreholes with respect to APECs
- Figure A.5 Groundwater Flow Direction

5.10.1 Property Description and History

The Site covers an approximate area of 44,400 m^2 and is occupied by nine structures owned and operated by ‘Millers Farm and Market’. Based on the available aerial photographs, the Site was first developed sometime circa 1946 considering two structures were present in the southern portion of the Site (current location of Two Storey Barn (Structure 1) and Residential Building (Structure 2)) and the land use at the Site was agricultural. Historical land use in the Phase One Study Area was predominately agricultural and rural residential with community right of ways (i.e., roadways). The Site features (including structures) are shown in Figure A.2, Appendix A.

Currently the Site is occupied by nine structures which are owned and operated by Millers Farm and Market. The Site was used for agricultural purposes historically and the current use encompasses a combination of agricultural activities (including market gardening, chicken coops, and the operation of greenhouses) as well as commercial operations (such as a sales shop). The future use is not anticipated to change.

The Site and associated Study Area Features are shown on Figure A.1 and Figure A.2, Appendix A. Pertinent identification information for the Site is provided in Table 6.1.

Table 5.4: Legal Description and Site Information

Site Information	
Legal Description[1]	PART OF LOT 13, CONCESSION BF, AKA CON ABF, BEING PARTS 2 AND 4 ON 5R6592, EXCEPT PART 1 ON 4R18840, OTTAWA. S/T NS171551
PIN	03909-0149 (LT)
Site Owner	Ronald Miller and Suzzanne Miller
Site Contact	Mr. David Beveridge

Note:
1. The legal description provided for the Site also includes the legal description for 6158 Rideau Valley Drive, a much larger land parcel.

5.10.2 Previous Investigation

The following lists the previous reports available for the Site. The Phase One ESA formed the basis for completing this Phase Two ESA.

- Phase One Environmental Site Assessment, Zoning By-Law Amendment Application, 6158 Rideau Valley Drive, Ottawa, Ontario dated June 12, 2024.

5.10.3 Potentially Contaminating Activities

The potentially contaminating activities (PCAs) identified in Phase One ESA (GEMTEC, June 2024) are summarized in Table 6.2.

Table 5.5: Summary of Potentially Contaminating Activities

PCA ID	Type of PCA	Address / Location	Information source	PCA Description	Rationale
28	Presence of ASTs	On-Site	Aerial Photographs Site Recon	Presence of ASTs for fuelling farm equipment	Yes – APEC 1 As per O.Reg 153/04, as amended, on-Site PCA leads to an APEC.
48	Bulk Salt Storage	On-Site	Site Recon	Bulk Salt Storage at a Storage Shed (Building 9)	Yes – APEC 2 As per O.Reg 153/04, as amended, on-Site PCA leads to an APEC.

PCA ID	Type of PCA	Address / Location	Information source	PCA Description	Rationale
OT 1	Presence of Oil Water Separator and general maintenanc e of farm equipment.	On-Site	Site Recon	An oil water separator was identified along the western building line of Building Workshop (Structure 7) where general maintenance of the farm equipment is carried out.	Yes – APEC 3 As per O.Reg 153/04, as amended, on-Site PCA leads to an APEC.

Notes:
28. Gasoline and Associated Products Storage in Fixed Tanks
48. Salt Manufacturing, Processing and Bulk Storage
OT 1: Presence of an Oil Water Separator

5.10.4 Area of Potential Environmental Concern

The areas of potential environmental concern (APECs) identified based on the PCAs are summarized in Table 6.3. Figure A.3, Appendix A indicates the location of the APECs.

Table 5.6: Areas of Potential Environmental Concern

APEC #	APEC	Location of APEC on the Site	PCA	Location of PCA (On-Site and/or Off-Site)	COPCs	Media Potentially Impacted (Soil, Groundwater and/or Sediments)
1	Presence of Oil Water Separator and general maintenance of farm equipment at Structure 7.	Along the western building line of Building Workshop (Structure 7)	OT 1	On-Site	PHC F1-F4, VOCs, PAHs	Soil Groundwater
2	Presence of ASTs	Along the western building line of Storage Shed (Structure 3)	28	On-Site	PHC F1-F4, BTEX, PAHs	Soil Groundwater
3	Bulk Salt Storage	Building footprint of Storage	48	On-Site	EC, SAR (Sodium, Chloride)	Soil Groundwater

	Shed (Structure 9)

Notes:

28. Gasoline and Associated Products Storage in Fixed Tanks
48. Salt Manufacturing, Processing and Bulk Storage
OT 1: Presence of an Oil Water Separator
PHC F1-F4 – Petroleum Hydrocarbons F1-F4
BTEX – Benzene, Toluene, Ethylbenzene, and Xylene
EC – Electrical Conductivity
SAR – Sodium Adsorption Ratio
VOC – Volatile Organic Compounds
PAH – Polycyclic Aromatic Hydrocarbons

5.10.5 Subsurface Structures and Utilities

Buried utility service locates completed prior to the drilling program indicated public buried utility services are present along Rideau Valley Drive. No underground utility drawings for the Site were provided for review.

5.10.6 Physical Setting

5.10.6.1 Topography

The Site has a relatively flat topography and is at an elevation of approximately 88 m above sea level (m asl). The Site has a topographic high point and gradually slopes either towards Rideau Valley Drive (located to the east of the Site) or McIntyre Scobie Drain (located to the west of the Site). Surrounding local topography generally slopes gradually downwards towards Rideau River which is located approximately 400 m northeast of the Site.

Based on the topography and hydrogeological features, it is anticipated that local shallow groundwater would flow to the eastwards towards Rideau River. Based on the findings of this Phase Two ESA, shallow groundwater was interpreted to flow towards the southwest based on the interpreted groundwater elevation contours presented in Figure A.5, Appendix A.

The physical setting for the Site is consistent based on GEMTEC's observation during the Phase Two ESA field program

5.10.6.2 Stratigraphy – Boreholes

The subsurface soil conditions encountered in the boreholes advanced as part of this Phase Two ESA generally consisted of brown silty sand with varying amounts of gravel from BH24-01 to BH24-04 whereas the subsurface soil conditions at BH24-05 and BH24-06 consisted of brown silty sand with varying amounts of gravel underlain by silty clay. The Record of Borehole Logs are provided in Appendix B.

5.10.6.3 Depth to Bedrock

The presence of bedrock could not be confirmed. Refusal was noted at two locations, BH/MW24-01 and BH24-02, at a depth ranging between 3.65 m bgs and 5.18 m bgs respectively. However, the overburden mapping indicates that the bedrock is anticipated to be at the depth ranging between 15 and 25 m bgs.

5.10.6.4 Hydrogeological Characteristics

Based on the topography of the Study Area, it is expected that the local shallow groundwater flow will trend east. Based on the interpreted groundwater elevation contours for water level measured on August 2, 2024, the inferred direction of shallow groundwater flow is generally to the southwest.

The average horizontal hydraulic gradient for shallow groundwater conditions was 0.0133 m/m. Vertical hydraulic gradient for shallow groundwater conditions were not calculated as nested monitoring wells were not installed at the Site.

5.10.6.5 Depth to Groundwater

Water levels were measured in the monitoring wells which were advanced at the Site. The location of these monitoring wells is shown on Figure A.4, Appendix A. Groundwater elevations ranged from 88.45 and 89.97 m asl on August 2, 2024. The inferred direction of shallow groundwater flow is generally to the southwest based on the interpreted groundwater elevation contours presented in Figure A.5, Appendix A.

5.10.6.6 Environmentally Sensitive Areas

No areas of natural significance (ANSIs) were identified on-Site or within the Study Area.

5.10.6.7 Shallow Soil Property or Water Body

The overburden thickness is greater than 2 m for more than two-thirds of the Site. The measured depth to water at the Site ranged from 1.47 to 3.37 m bgs. Therefore, Section 43.1(a) and 43.1(b) of O. Reg. 153/04 do not apply to the Site.

5.10.7 Applicable Site Condition Standards

The analytical results were compared to the Table 2 Full Depth Generic Site Condition Standards (SCS) in a Potable Ground Water Condition for Residential/Parkland/Institutional (RPI) Property Use with coarse textured soil as presented in the Ministry of the Environment, Conservation and Parks (MECP) document “Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act” dated April 15, 2011.

The applicable SCS were selected based on the following rationale:

- The Site is currently used for a combination of agricultural activities (including market gardening, chicken coops, and the operation of greenhouses) as well as commercial operations (such as a sales shop). The future land use is expected to be the same. However, a residential building (Structure 2) is present on-Site. Therefore, the land use for the Site is considered Agricultural or Other Property Use.
- Based on visual observations made during the Environmental Field Investigation (field program/environmental investigation), coarse grained soils are present on-Site. Coarse textured soil is defined by Section 42(1) of O. Reg.153/04 as 'soil that contains 50 percent or more by mass of particles that are greater than 75 micrometres in mean diameter'. Accordingly, coarse textured soils have been considered applicable for the Site.
- 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 intrusive investigation, the Site is not considered a shallow soil property as the overburden thickness is greater than 2 m for more than one-third of the Site. The property does not include a water body nor is it located within 30 metres of a water body.

- The Site and adjacent properties rely on groundwater as a potable source of water. Through review of the Ontario Water Well records, potable domestic wells were identified within 250 m the of the Site. Accordingly, the Site has been considered to be situated within a potable water well zone.
- 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.

Through a review of samples submitted for analysis during the field program, the pH values were within range for surface soil and subsurface soil. Therefore, the Site is not considered to be an environmentally sensitive site. Additionally, no water bodies or Areas of Natural and Scientific Interest (ANSIs) were identified on or within 30 m of the Site. McIntyre Scobie Drain, a municipal drain and not a permanent water body, is present along the west edge of the Site and the Rideau River is present approximately 400 m northeast of the Site.

Based on the review of Site characteristics, the following provincial standards were considered to be applicable to the analytical results obtained during the field investigation:

- Soil: MECP, 2011. Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act. Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for Agricultural or Other Property Use (Agri) land use with coarse textured soil.
- Groundwater: MECP, 2011. Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act. Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for All Types of Property Use with coarse textured soil.

The following provincial standards were considered to be applicable to the soil analytical results obtained during the environmental investigation:

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

5.10.8 Contaminated Media

Using MECP accepted averaging techniques, soil and groundwater results satisfied the Table 2 SCS for all soil and groundwater analytical results.

5.10.9 Description of Areas of Contamination on the Site

No areas of soil or groundwater contamination were identified on the Site.

5.10.10 Potential Influence of Utilities on Contaminant Migration

No areas of identified soil and groundwater exceeding the Table 2 SCS were identified at the Site. As such, the potential influence of underground utilities is not an issue at the Site.

5.10.11 Contaminant Migration

Soil impacted with SAR was identified near BH24-01 SA5, which is anticipated to be due to salt storage onsite, however groundwater at this location did not identify any exceedances. Accordingly, contaminant migration is not anticipated to be an issue.

5.10.12 Meteorological and Climatic Considerations

Seasonal fluctuation in water levels on the Site should be expected. Considering only one monitoring event was conducted, seasonal trends could not be identified; however, shallow groundwater water levels are typically highest following the spring recharge and decline throughout the summer and fall months into the winter.

5.10.13 Cross Sections – Lateral and Vertical Distribution of Contaminants

No cross sections were completed considering the absence of the contaminants at the tested locations on the Site.

6.0 CONCLUSIONS

The Phase Two ESA investigated the APECs identified in the Phase One ESA (GEMTEC, June 2024). Based on the results of the soil samples and groundwater samples submitted as part of this Phase Two ESA no impacts were identified. Accordingly, no further work is recommended at this time.

6.1 Signatures

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

Regards,

Mohit Bhargav, M.Sc.E., EIT
Environmental Scientist

Nicole Soucy, M.A.Sc., P.Eng, QP_{ESA}
Environmental Engineer

MB/NS

7.0 REFERENCES

GEMTEC Consulting Engineers and Scientists Limited. June 2024. Phase One Environmental Site Assessment, Zoning By-Law Amendment Application, 6158 Rideau Valley Drive, Ottawa, Ontario.

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

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

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Ontario Ministry of the Environment and Climate Change (MOE). Guidance on sampling and analytical methods for use at contaminated sites in Ontario. Revised December 1996.

Geography Network Canada (GNC). October 2004. Ontario Basic Mapping Accessed: December 2020 & January 2021. Available: http://www.geographynetwork.ca/website/obm/viewer.htm.

Google Earth™ Satellite Imagery, 2019.

8.0 LIMITATION OF LIABILITY

This report was prepared for the exclusive use of the Owners of 6158 Rideau Valley Drive. This report may not be relied upon by any other person or entity without the express written consent of GEMTEC Consulting Engineers and Scientists Limited and the Owners of 6158 Rideau Valley Drive. Nothing in this report is intended to provide a legal opinion. Any use which a third party makes of this report, or any reliance on, or decisions to be made based on it, are the responsibilities of such third parties. GEMTEC accepts no responsibility for damages, if any, suffered by any third party (other than as noted above) as a result of decisions made or actions based on this report.

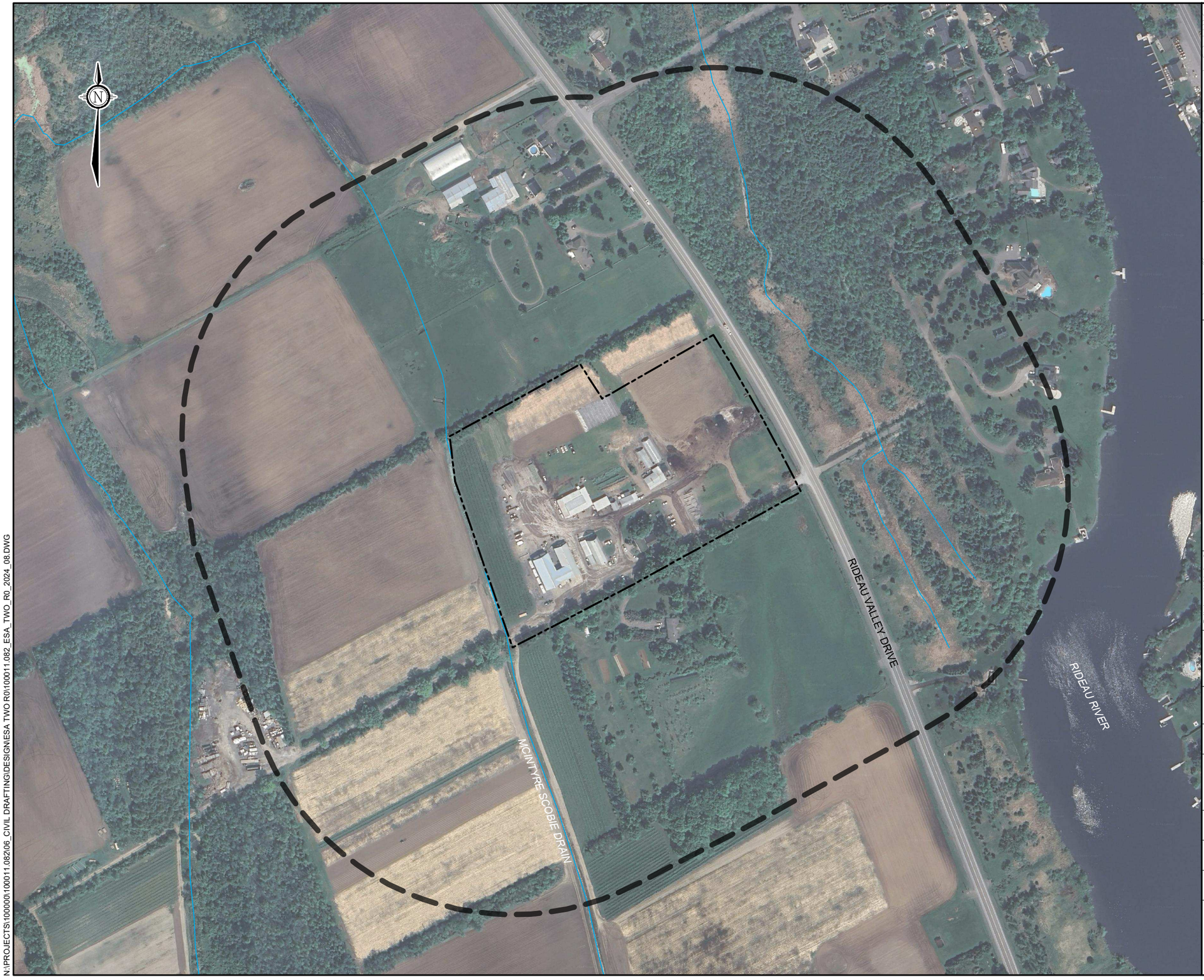
The investigation undertaken by GEMTEC with respect to this report and any conclusions or recommendations made in this report reflect the best judgements of GEMTEC based on the Site conditions observed during the investigations undertaken at the date(s) identified in the report and on the information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

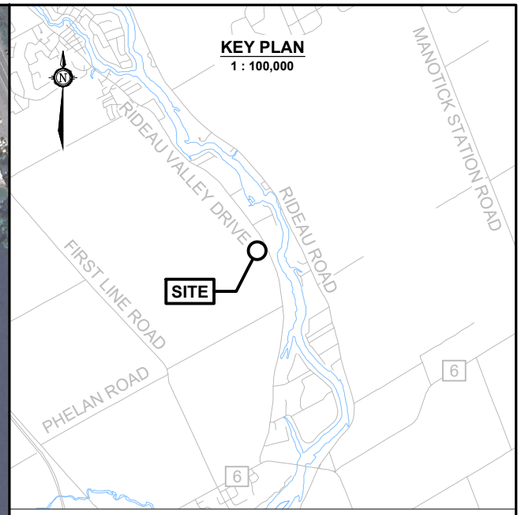
This report provides a professional opinion and therefore no warranty is expressed, implied, or made as to the conclusions, advice and recommendations offered in this report. This report does not provide a legal opinion regarding compliance with applicable laws. With respect to regulatory compliance issues, it should be noted that regulatory statutes and the interpretation of regulatory statutes are subject to change.

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.

APPENDIX A

Figures





LEGEND

- APPROXIMATE SITE BOUNDARY
- STUDY AREA (250 m RADIUS AROUND THE SITE BOUNDARY)
- WATERCOURSE

GENERAL NOTE(S)

1. Coordinate system: NAD83, UTM ZONE 18N, CGVD28
2. Distances, elevations, and coordinates are shown in metres unless denoted otherwise
3. This drawing is a schematic representation and should not be taken as a substitute for a legal survey.
4. Maps Data: Google, @2024 CNES / Airbus, First Base Solutions, Maxar Technologies
5. Contains information licensed under the Open Government Licence – Ontario
6. Geographic dataset source: Ontario GeoHub

SCALE 1:3,500

0 120 240m

DRAWING

SITE AND STUDY AREA

CLIENT

NOVATECH ENGINEERS, PLANNERS & LANDSCAPE ARCHITECTS

PROJECT

PHASE TWO
ENVIRONMENTAL SITE ASSESSMENT,
ZONING BY-LAW AMENDMENT APPLICATION
6158 RIDEAU VALLEY DRIVE
OTTAWA, ONTARIO

DRAWN BY	CHECKED BY
S.L.	M.B.
PROJECT NO.	REVISION NO.
100011.082	0
DATE	FIGURE NO.
AUGUST 2024	**FIGURE A.1**

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ottawa@gemtec.ca

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LEGEND

APPROXIMATE SITE BOUNDARY

WATERCOURSE

FEATURE ID	DESCRIPTION
1	TWO STOREY BARN (MATERIAL STORAGE)
2	OFFICE BUILDING
3	STORAGE SHED (MATERIAL STORAGE)
4	STORAGE SHED (MATERIAL STORAGE)
5	STORAGE SHED (MATERIAL STORAGE)
6	SALES SHOP
7	BUILDING WORKSHOP
8	GREENHOUSES
9	STORAGE SHED (SALT STORAGE)

GENERAL NOTE(S)

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2. Distances, elevations, and coordinates are shown in metres unless denoted otherwise
3. This drawing is a schematic representation and should not be taken as a substitute for a legal survey.
4. Maps Data: Google, @2024 CNES / Airbus, First Base Solutions, Maxar Technologies
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6. Geographic dataset source: Ontario GeoHub

SCALE 1:1,500

0 30 60 90m

DRAWING
SITE FEATURE

CLIENT
NOVATECH ENGINEERS, PLANNERS & LANDSCAPE ARCHITECTS

PROJECT
PHASE TWO
ENVIRONMENTAL SITE ASSESSMENT,
ZONING BY-LAW AMENDMENT APPLICATION
6158 RIDEAU VALLEY DRIVE
OTTAWA, ONTARIO

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S.L.	M.B.
PROJECT NO.	REVISION NO.
100011.082	0
DATE	FIGURE NO.
AUGUST 2024	**FIGURE A.2**

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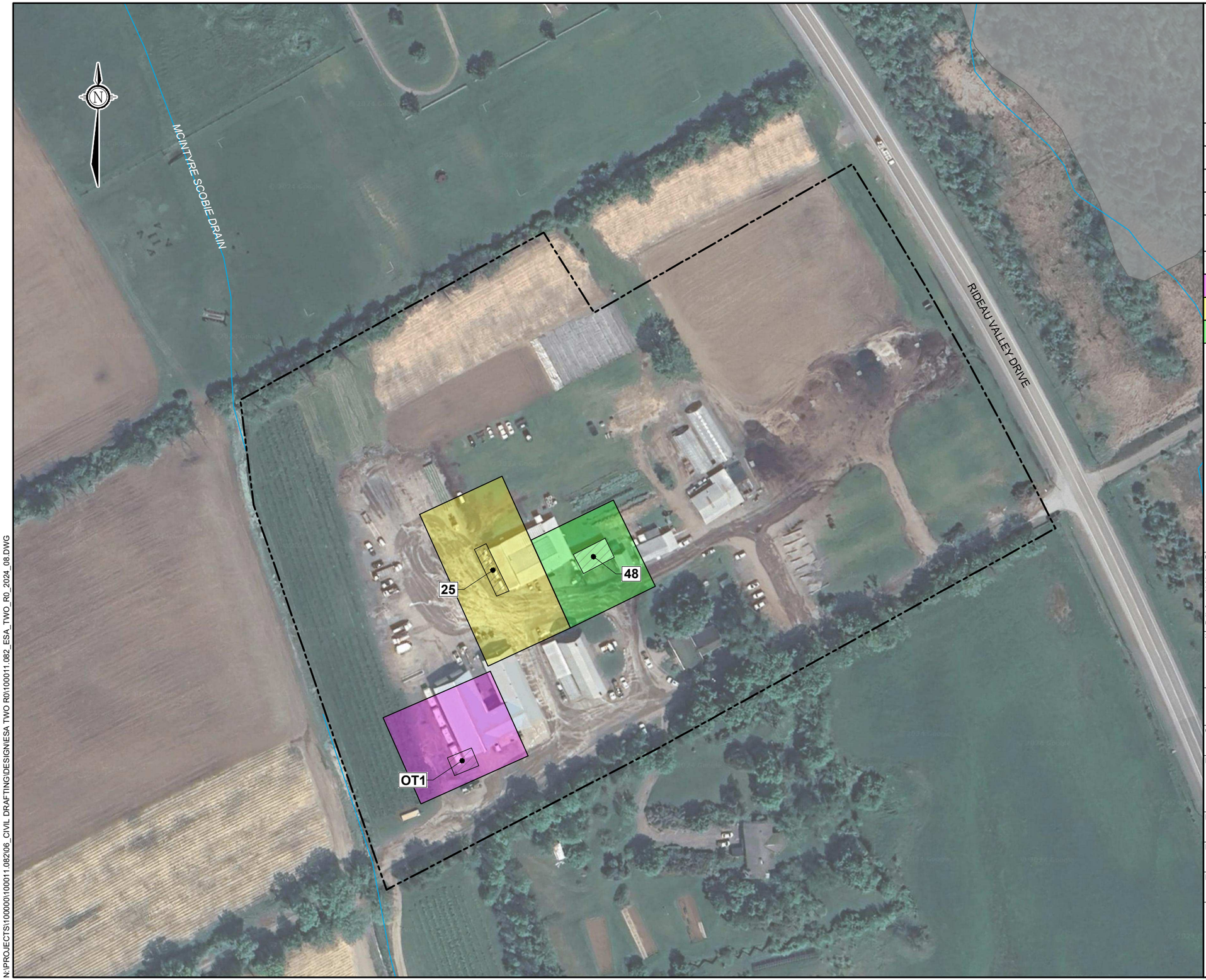

LEGEND

APPROXIMATE SITE BOUNDARY

WATERCOURSE

PCA ID	DESCRIPTION
28	GASOLINE AND ASSOCIATED PRODUCTS STORAGE IN FIXED TANKS
48	SALT MANUFACTURING, PROCESSING AND BULK STORAGE
OT1	PRESENCE OF AN OIL WATER SEPARATOR

APEC ID	DESCRIPTION
1	PRESENCE OF OIL WATER SEPARATOR AND GENERAL MAINTENANCE OF FARM EQUIPMENT AT STRUCTURE 7
2	PRESENCE OF ASTS
3	BULK SALT STORAGE

GENERAL NOTE(S)

1. Coordinate system: NAD83, UTM ZONE 18N, CGVD28
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SCALE 1:1,500

0 30 60 90m

DRAWING
POTENTIALLY CONTAMINATING ACTIVITIES AND AREAS OF POTENTIAL ENVIRONMENTAL CONCERN

CLIENT
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PROJECT
PHASE TWO
ENVIRONMENTAL SITE ASSESSMENT,
ZONING BY-LAW AMENDMENT APPLICATION
6158 RIDEAU VALLEY DRIVE
OTTAWA, ONTARIO

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PROJECT NO.	REVISION NO.
100011.082	0
DATE	FIGURE NO.
AUGUST 2024	**FIGURE A.3**

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LEGEND

- BH/ MW # — BOREHOLE/ MONITORING WELL ID
- XX.XX — GROUND SURFACE ELEVATION, IN METRES
- **BOREHOLE** (current investigation by GEMTEC)
- **BOREHOLE/ MONITORING WELL** (current investigation by GEMTEC)
- **APPROXIMATE SITE BOUNDARY**
- **WATERCOURSE**

APEC ID	DESCRIPTION
1	PRESENCE OF OIL WATER SEPARATOR AND GENERAL MAINTENANCE OF FARM EQUIPMENT AT STRUCTURE 7
2	PRESENCE OF ASTS
3	BULK SALT STORAGE

GENERAL NOTE(S)

1. Coordinate system: NAD83, UTM ZONE 18N, CGVD28
2. Distances, elevations, and coordinates are shown in metres unless denoted otherwise
3. This drawing is a schematic representation and should not be taken as a substitute for a legal survey.
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6. Geographic dataset source: Ontario GeoHub

SCALE 1:750

0 15 30 45m

DRAWING
BOREHOLE LOCATIONS WITH RESPECT TO APECS

CLIENT
NOVATECH ENGINEERS, PLANNERS & LANDSCAPE ARCHITECTS

PROJECT
PHASE TWO
ENVIRONMENTAL SITE ASSESSMENT,
ZONING BY-LAW AMENDMENT APPLICATION
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OTTAWA, ONTARIO

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PROJECT NO.	REVISION NO.
100011.082	0
DATE	FIGURE NO.
AUGUST 2024	**FIGURE A.4**

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LEGEND

- BH/ MW # — BOREHOLE/ MONITORING WELL ID
- XX.XX — GROUND SURFACE ELEVATION, IN METRES
- BOREHOLE (current investigation by GEMTEC)
- BOREHOLE/ MONITORING WELL (current investigation by GEMTEC)
- APPROXIMATE SITE BOUNDARY
- WATERCOURSE

APEC ID	DESCRIPTION
1	PRESENCE OF OIL WATER SEPARATOR AND GENERAL MAINTENANCE OF FARM EQUIPMENT AT STRUCTURE 7
2	PRESENCE OF ASTS
3	BULK SALT STORAGE

Contaminants of Concern	MECP Table 2 Agri or Other Property Use -
SAR	5

Notes:

Agri - Agricultural

'mbgs' - Metres Below Ground Surface

MECP Table 2 SCS: Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act. Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition, Agriculture or Other Property Use with Coarse textured soils (MECP, 2011).

BOLD - Exceeds MECP Table 2 Agri SCS

GENERAL NOTE(S)

1. Coordinate system: NAD83, UTM ZONE 18N, CGVD28
2. Distances, elevations, and coordinates are shown in metres unless denoted otherwise
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SCALE 1:750

0 15 30 45m

DRAWING: SOIL EXCEEDANCES

CLIENT: NOVATECH ENGINEERS, PLANNERS & LANDSCAPE ARCHITECTS

PROJECT: PHASE TWO
ENVIRONMENTAL SITE ASSESSMENT,
ZONING BY-LAW AMENDMENT APPLICATION
6158 RIDEAU VALLEY DRIVE
OTTAWA, ONTARIO

DRAWN BY	CHECKED BY
S.L.	M.B.
PROJECT NO.	REVISION NO.
100011.082	0
DATE	FIGURE NO.
AUGUST 2024	**FIGURE A.5**

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LEGEND

- BH/ MW # — BOREHOLE/ MONITORING WELL ID
- XX.XX — GROUND SURFACE ELEVATION, IN METRES
- XX.XX — GROUND WATER ELEVATION, IN METRES
- **BOREHOLE** (current investigation by GEMTEC)
- **BOREHOLE/ MONITORING WELL** (current investigation by GEMTEC)
- **MECP PUBLIC WELL RECORDS**
- **APPROXIMATE SITE BOUNDARY**
- **WATERCOURSE**
- **GROUNDWATER CONTOUR, IN METRES**
- **GROUND SURFACE ELEVATION, IN METRES**
- **WETLAND UNEVALUATED**
- **GROUNDWATER FLOW DIRECTION**

GENERAL NOTE(S)

1. Coordinate system: NAD83, UTM ZONE 18N, CGVD28
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5. Contains information licensed under the Open Government Licence – Ontario
6. Geographic dataset source: Ontario GeoHub

SCALE 1:1,500

0 30 60 90m

DRAWING
GROUNDWATER FLOW DIRECTION

CLIENT
NOVATECH ENGINEERS, PLANNERS & LANDSCAPE ARCHITECTS

PROJECT
PHASE TWO
ENVIRONMENTAL SITE ASSESSMENT,
ZONING BY-LAW AMENDMENT APPLICATION
6158 RIDEAU VALLEY DRIVE
OTTAWA, ONTARIO

DRAWN BY	CHECKED BY
S.L.	M.B.
PROJECT NO.	REVISION NO.
100011.082	0
DATE	FIGURE NO.
AUGUST 2024	**FIGURE A.6**

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APPENDIX B

Borehole Logs

RECORD OF BOREHOLE 24-01

CLIENT: Novatech
PROJECT: Phase Two Environmental Site Assessment, 6158 Rideau Valley Drive, Ottawa, Ontario
JOB#: 100011.082
LOCATION: See Figure A.4, Appendix A

SHEET: 1 OF 1
DATUM: CGVD28
BORING DATE: Jul 18 2024

DEPTH SCALE METRES	BORING METHOD	DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	NUMBER	TYPE	RECOVERY (mm)	BLOWS/0.3m	LABORATORY ANALYSES	COMBUSTIBLE VAPOUR CONCENTRATION (ppm)	ODOUR	TPH (mg/kg)	MONITORING WELL INSTALLATION AND NOTES
		Ground Surface		93.43									
0	Direct Push Casing (155mm OD)	TOPSOIL		93.23	1	SS	200	NA		Hex: 5; IBL: 0	None		
		Loose to compact, brown SILTY SAND, trace gravel		0.20	2	SS	1200	NA	pH	Hex: 30; IBL: 0	None		Bentonite seal
1													
2					3	SS	600	NA		Hex: 25; IBL: 1	None		
					4	SS	550	NA		Hex: 35; IBL: 0	None		
3				90.38									
		Compact to dense, brown SILTY SAND, trace gravel		3.05	5	SS	750	NA	EC, SAR	Hex: 1100; IBL: 0	None		Filter sand 50 millimetre diameter well
4					6	SS	720	NA		Hex: 30; IBL: 1	None		
				88.86									
		Loose, brown SILTY SAND, trace gravel		4.57	7	SS	610	NA		Hex: 850; IBL: 0	None		
5				88.25									
		End of borehole Sampler refusal		5.18									

GROUNDWATER OBSERVATIONS

DATE	DEPTH (m)	ELEVATION (m)
Aug. 02/24	3.36 ▽	90.07

GEMTEC
Consulting Engineers and Scientists

LOGGED: MB
CHECKED: NS

ENV - BOREHOLE LOG 100011.082_BH LOGS_ 2024-08-21.GPJ GEMTEC 2018.GDT 8/22/24

RECORD OF BOREHOLE 24-02

CLIENT: Novatech
PROJECT: Phase Two Environmental Site Assessment, 6158 Rideau Valley Drive, Ottawa, Ontario
JOB#: 100011.082
LOCATION: See Figure A.4, Appendix A

SHEET: 1 OF 1
DATUM: CGVD28
BORING DATE: Jul 18 2024

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLE DATA: NUMBER	TYPE	RECOVERY (mm)	BLOWS/0.3m	LABORATORY ANALYSES	COMBUSTIBLE VAPOUR CONCENTRATION (ppm)	ODOUR	TPH (mg/kg)	MONITORING WELL INSTALLATION AND NOTES
0		Ground Surface		93.85									
0	Direct Push Casing (155mm OD)	Brown sand and gravel, non-cohesive, dry (FILL MATERIAL)		92.35	1	SS	255	NA		Hex: 35; IBL: 0	None		Backfilled with auger cuttings
1		Brown SILTY SAND, some gravel, some clay		1.50	2	SS	255	NA		Hex: 30; IBL: 0	None		
2					3	SS	610	NA	EC, SAR	Hex: 640; IBL: 1	None		
3				90.20									
		End of borehole Sampler refusal		3.65									

GEMTEC
Consulting Engineers and Scientists

LOGGED: MB
CHECKED: NS

ENV - BOREHOLE LOG 100011.082_BH LOGS_ 2024-08-21.GPJ GEMTEC 2018.GDT 8/22/24

RECORD OF BOREHOLE 24-03

CLIENT: Novatech
PROJECT: Phase Two Environmental Site Assessment, 6158 Rideau Valley Drive, Ottawa, Ontario
JOB#: 100011.082
LOCATION: See Figure A.4, Appendix A

SHEET: 1 OF 1
DATUM: CGVD28
BORING DATE: Jul 18 2024

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		91.18									
0	Direct Push Casing (155mm OD)	TOPSOIL		90.93	1	SS	250	NA		Hex: 0; IBL: 0	None		Flush Mount
		Grey to brown, SILTY SAND, some gravel, some clay, non-cohesive		0.25									
1					2	SS	1300	NA		Hex: 55; IBL: 2	None		Bentonite seal
2					3	SS	650	NA		Hex: 65; IBL: 0	None		
					4	SS	500	NA		Hex: 80; IBL: 0	None		
3					5	SS	750	NA	PAHs, PHC F1-F4, BTEX	Hex: 400; IBL: 0	None		Filter sand 50 millimetre diameter well screen
				87.37									
4		Loose, grey SILTY SAND, some clay, some gravel, wet		3.81	6	SS	750	NA		Hex: 50; IBL: 0	None		
				86.61									
		End of borehole		4.57									

GROUNDWATER OBSERVATIONS

DATE	DEPTH (m)	ELEVATION (m)
Aug. 02/24	1.36 ▽	89.82

GEMTEC
Consulting Engineers and Scientists

LOGGED: MB
CHECKED: NS

ENV - BOREHOLE LOG 100011.082_BH LOGS_ 2024-08-21.GPJ GEMTEC 2018.GDT 8/22/24

RECORD OF BOREHOLE 24-04

CLIENT: Novatech
PROJECT: Phase Two Environmental Site Assessment, 6158 Rideau Valley Drive, Ottawa, Ontario
JOB#: 100011.082
LOCATION: See Figure A.4, Appendix A

SHEET: 1 OF 1
DATUM: CGVD28
BORING DATE: Jul 18 2024

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		91.42									
0	Direct Push Casing (155mm OD)	Sandy GRAVEL		90.81	1	SS	350	NA		Hex: 0; IBL: 1	None		Flush Mount
1		Brown, SILTY SAND, some gravel, some clay, non-cohesive		0.61	2	SS	1200	NA		Hex: 5; IBL: 1	None		Bentonite seal
2					3	SS	600	NA		Hex: 0; IBL: 0	None		
					4	SS	550	NA	pH	Hex: 0; IBL: 0	None		
3					5	SS	750	NA	PAHs, PHC F1-F4, BTEX	Hex: 60; IBL: 0	None		Filter sand 50 millimetre diameter well screen
4					6	SS	610	NA		Hex: 35; IBL: 0	None		
				86.85									
		End of borehole		4.57									

GROUNDWATER OBSERVATIONS

DATE	DEPTH (m)	ELEVATION (m)
Aug. 02/24	1.46 ▽	89.96

GEMTEC
Consulting Engineers and Scientists

LOGGED: MB
CHECKED: NS

ENV - BOREHOLE LOG 100011.082_BH LOGS_2024-08-21.GPJ GEMTEC 2018.GDT 8/22/24

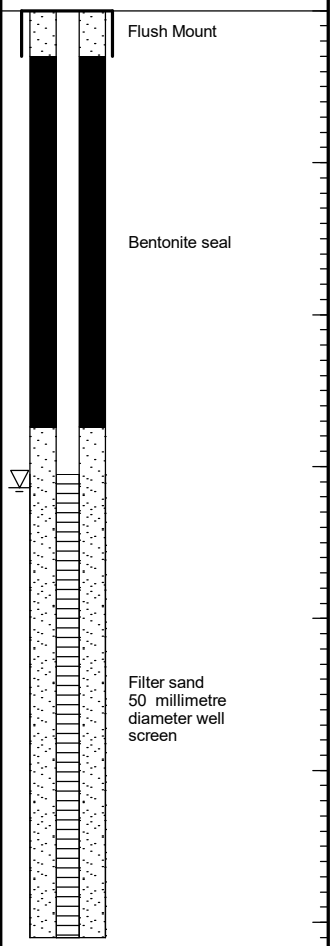
RECORD OF BOREHOLE 24-05

CLIENT: Novatech
PROJECT: Phase Two Environmental Site Assessment, 6158 Rideau Valley Drive, Ottawa, Ontario
JOB#: 100011.082
LOCATION: See Figure A.4, Appendix A

SHEET: 1 OF 1
DATUM: CGVD28
BORING DATE: Jul 18 2024

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		91.61								
0	Direct Push Casing (155mm OD)	GRAVEL		91.36								
		Loose to compact, brown SILTY SAND, trace gravel		0.25	1	SS	457	NA		Hex: 0; IBL: 1	None	
1					2	SS	457	NA		Hex: 0; IBL: 0	None	
		Compact to dense, brown SILTY SAND, trace gravel with some clay		90.09 1.52	3	SS	432	NA		Hex: 0; IBL: 0	None	
2					4	SS	432	NA		Hex: 0; IBL: 1	None	
3				88.56								
		Firm, brown SILTY SAND with some clay		3.05	5	SS	762	NA		Hex: 0; IBL: 0	None	
				87.80								
4		Firm to soft, grey SILTY CLAY with some gravel		3.81	6	SS	762	NA		Hex: 0; IBL: 0	None	
				87.04								
		Brown CLAY and SILT with some gravel		4.57	7	SS	635	NA	PAHs, PHC F1-F4, VOCs	Hex: 20; IBL: 0	None	
5				86.13								
		Grey CLAY and SILT with some gravel		5.48	8	SS	635	NA		Hex: 15; IBL: 0	None	
6				85.51								
		End of borehole		6.10								

MONITORING WELL INSTALLATION AND NOTES



GROUNDWATER OBSERVATIONS

DATE	DEPTH (m)	ELEVATION (m)
Aug. 02/24	3.14 ▽	88.47

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LOGGED: MB
CHECKED: NS

ENV - BOREHOLE LOG 100011.082_BH LOGS_ 2024-08-21.GPJ GEMTEC 2018.GDT 8/22/24

RECORD OF BOREHOLE 24-06

CLIENT: Novatech
PROJECT: Phase Two Environmental Site Assessment, 6158 Rideau Valley Drive, Ottawa, Ontario
JOB#: 100011.082
LOCATION: See Figure A.4, Appendix A

SHEET: 1 OF 1
DATUM: CGVD28
BORING DATE: Jul 18 2024

DEPTH SCALE METRES	BORING METHOD	DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	NUMBER	TYPE	RECOVERY (mm)	BLOWS/0.3m	LABORATORY ANALYSES	COMBUSTIBLE VAPOUR CONCENTRATION (ppm)	ODOUR	TPH (mg/kg)	MONITORING WELL INSTALLATION AND NOTES
		Ground Surface		91.70									
0	Direct Push Casing (155mm OD)	SAND and GRAVEL		90.94	1	SS	381	NA		Hex: 15; IBL: 1	None		Backfilled with auger cuttings
1		Loose to compact, brown SILTY SAND, some clay and trace gravel		0.76	2	SS	381	NA		Hex: 0; IBL: 1	None		
2					3	SS	431	NA		Hex: 0; IBL: 0	None		
		Loose to compact, brown SILTY SAND and gravel. Asphalt layer noted at 9 feet (2.74 m bgs)		89.42 2.28	4	SS	431	NA		Hex: 10; IBL: 0	None		
3		Brown SILTY CLAY		88.65 3.05	5	SS	762	NA		Hex: 0; IBL: 0	None		
4					6	SS	762	NA		Hex: 0; IBL: 1	None		
5					7	SS	457	NA	PAHs, PHC F1-F4, VOCs	Hex: 45; IBL: 0	None		
		End of borehole		86.52 5.18									

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Consulting Engineers and Scientists

LOGGED: MB
CHECKED: NS

ENV - BOREHOLE LOG 100011.082_BH LOGS_ 2024-08-21.GPJ GEMTEC 2018.GDT 8/22/24

APPENDIX C

Soil and Groundwater Analytical Data

GEMTEC
Consulting Engineers and Scientists

Table C.1: Summary of Soil Analytical Results
Metals, Inorganics, and Polycyclic Aromatic Hydrocarbons
Phase Two Environmental Site Assessment
6158 Rideau Valley Drive Ottawa Ontario

Contaminants of Concern	MECP Table 2 Agri or Other Property Use - Coarse	Reporting Detection Limit	Sample ID	BH24-01 SA2	BH24-01 SA5	BH24-01 SA105	BH24-02 SA3	BH24-03 SA5	BH24-04 SA4	BH24-04 SA5	BH24-05 SA7	BH24-05 SA107	BH24-06 SA7
			Sample Depth (mbgs)	0.20 - 1.50	3.04 - 3.81	3.04 - 3.81	3.04 - 3.65	3.04 - 3.81	2.28 - 3.05	3.04 - 3.96	4.57 - 5.48	4.57 - 5.48	4.57 - 5.18
			Lab ID	6086910	6022137	6022154	6022139	6022148	6086911	6022149	6022150	6022155	6022151
			Sampling Date	07/18/2024	07/18/2024	07/18/2024	07/18/2024	07/18/2024	07/18/2024	07/18/2024	07/18/2024	07/18/2024	07/18/2024
			Units										
Inorganics - Soil													
Conductivity	1.4	0.005	mS/cm	NA	0.149	0.198	0.406	NA	NA	NA	NA	NA	NA
SAR	5	-	-	NA	**5.03**	0.479	0.963	NA	NA	NA	NA	NA	NA
pH	Surface Soil: 5-9 Subsurface Soil: 5-11	-	pH units	6.63	NA	NA	NA	NA	6.05	NA	NA	NA	NA
Polycyclic Aromatic Hydrocarbons - Soil													
Naphthalene	0.6	0.05	µg/g	NA	NA	NA	NA	<0.05	NA	<0.05	<0.05	<0.05	<0.05
Acenaphthylene	0.15	0.05	µg/g	NA	NA	NA	NA	<0.05	NA	<0.05	<0.05	<0.05	<0.05
Acenaphthene	7.9	0.05	µg/g	NA	NA	NA	NA	<0.05	NA	<0.05	<0.05	<0.05	<0.05
Fluorene	62	0.05	µg/g	NA	NA	NA	NA	<0.05	NA	<0.05	<0.05	<0.05	<0.05
Phenanthrene	6.2	0.05	µg/g	NA	NA	NA	NA	<0.05	NA	<0.05	<0.05	<0.05	<0.05
Anthracene	0.67	0.05	µg/g	NA	NA	NA	NA	<0.05	NA	<0.05	<0.05	<0.05	<0.05
Fluoranthene	0.69	0.05	µg/g	NA	NA	NA	NA	<0.05	NA	<0.05	<0.05	<0.05	<0.05
Pyrene	78	0.05	µg/g	NA	NA	NA	NA	<0.05	NA	<0.05	<0.05	<0.05	<0.05
Benzo[a]anthracene	0.5	0.05	µg/g	NA	NA	NA	NA	<0.05	NA	<0.05	<0.05	<0.05	<0.05
Chrysene	7	0.05	µg/g	NA	NA	NA	NA	<0.05	NA	<0.05	<0.05	<0.05	<0.05
Benzo[b]fluoranthene	0.78	0.05	µg/g	NA	NA	NA	NA	<0.05	NA	<0.05	<0.05	<0.05	<0.05
Benzo[k]fluoranthene	0.78	0.05	µg/g	NA	NA	NA	NA	<0.05	NA	<0.05	<0.05	<0.05	<0.05
Benzo[a]pyrene	0.078	0.05	µg/g	NA	NA	NA	NA	<0.05	NA	<0.05	<0.05	<0.05	<0.05
Indeno [1,2,3-cd] pyrene	0.38	0.05	µg/g	NA	NA	NA	NA	<0.05	NA	<0.05	<0.05	<0.05	<0.05
Dibenzo[a,h]anthracene	0.1	0.05	µg/g	NA	NA	NA	NA	<0.05	NA	<0.05	<0.05	<0.05	<0.05
Benzo[g,h,i]perylene	6.6	0.05	µg/g	NA	NA	NA	NA	<0.05	NA	<0.05	<0.05	<0.05	<0.05
1,2-Methylnaphthalene	0.99	0.05	µg/g	NA	NA	NA	NA	<0.05	NA	<0.05	<0.05	<0.05	<0.05

Notes:
Agri - Agricultural
'mbgs' - Metres Below Ground Surface
'NS' - No Standard
'NA' - Not Analyzed
<' - Non-Detect Sample

MECP Table 2 SCS: Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act. Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition, Agriculture or Other Property Use with Coarse textured soils (MECP, 2011).

BOLD - Exceeds MECP Table 2 Agri SCS

Client: 1120974 Ontario Inc
Project Number: 100011.082
August 2024

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Table C.2: Summary of Soil Analytical Results
Petroleum Hydrocarbon Four Fractions and Volatile Organic Compounds
Phase Two Environmental Site Assessment
6158 Rideau Valley Drive Ottawa Ontario

Contaminants of Concern	MECP Table 2 Agri or Other Property Use - Coarse	Reporting Detection Limit	Sample ID	BH24-01 SA5	BH24-01 SA105	BH24-02 SA3	BH24-03 SA5	BH24-04 SA5	BH24-05 SA7	BH24-05 SA107	BH24-06 SA7
			Sample Depth (mbgs)	3.04 - 3.81	3.04 - 3.81	3.04 - 3.65	3.04 - 3.81	3.04 - 3.96	4.57 - 5.48	4.57 - 5.48	4.57 - 5.18
			Lab ID	6022137	6022154	6022139	6022148	6022149	6022150	6022155	6022151
			Sampling Date	07/18/2024	07/18/2024	07/18/2024	07/18/2024	07/18/2024	07/18/2024	07/18/2024	07/18/2024
			Units								
Petroleum Hydrocarbons - Soil											
F1 PHCs (C6-C10)	55	5	µg/g	NA	NA	NA	<5	<5	NA	NA	NA
F1 PHCs (C6-C10) minus BTEX	NS	5	µg/g	NA	NA	NA	<5	<5	NA	NA	NA
F2 PHCs (C10-C16)	98	10	µg/g	NA	NA	NA	<10	<10	NA	NA	NA
F3 PHCs (C16-C34)	300	50	µg/g	NA	NA	NA	<50	<50	NA	NA	NA
F4 PHCs (C34-C50)	2800	50	µg/g	NA	NA	NA	<50	<50	NA	NA	NA
Volatile Organic Compounds - Soil											
Dichlorodifluoromethane	16	0.05	µg/g	NA	NA	NA	NA	NA	<0.05	<0.05	<0.05
Vinyl Chloride	0.02	0.02	µg/g	NA	NA	NA	NA	NA	<0.02	<0.02	<0.02
Bromomethane	0.05	0.05	µg/g	NA	NA	NA	NA	NA	<0.05	<0.05	<0.05
Trichlorofluoromethane	4	0.05	µg/g	NA	NA	NA	NA	NA	<0.05	<0.05	<0.05
Acetone	16	0.5	µg/g	NA	NA	NA	NA	NA	<0.50	<0.50	<0.50
1,1-Dichloroethylene	0.05	0.05	µg/g	NA	NA	NA	NA	NA	<0.05	<0.05	<0.05
Methylene Chloride	0.1	0.05	µg/g	NA	NA	NA	NA	NA	<0.05	<0.05	<0.05
trans-1,2-Dichloroethylene	0.084	0.05	µg/g	NA	NA	NA	NA	NA	<0.05	<0.05	<0.05
Methyl tert-butyl Ether	0.75	0.05	µg/g	NA	NA	NA	NA	NA	<0.05	<0.05	<0.05
1,1-Dichloroethane	0.47	0.02	µg/g	NA	NA	NA	NA	NA	<0.02	<0.02	<0.02
Methyl Ethyl Ketone	16	0.5	µg/g	NA	NA	NA	NA	NA	<0.50	<0.50	<0.50
cis-1,2-Dichloroethylene	1.9	0.02	µg/g	NA	NA	NA	NA	NA	<0.02	<0.02	<0.02
Chloroform	0.05	0.04	µg/g	NA	NA	NA	NA	NA	<0.04	<0.04	<0.04
1,2-Dichloroethane	0.05	0.03	µg/g	NA	NA	NA	NA	NA	<0.03	<0.03	<0.03
1,1,1-Trichloroethane	0.38	0.05	µg/g	NA	NA	NA	NA	NA	<0.05	<0.05	<0.05
Carbon Tetrachloride	0.05	0.05	µg/g	NA	NA	NA	NA	NA	<0.05	<0.05	<0.05
Benzene	0.21	0.02	µg/g	NA	NA	NA	<0.02	<0.02	<0.02	<0.02	<0.02
1,2-Dichloropropane	0.05	0.03	µg/g	NA	NA	NA	NA	NA	<0.03	<0.03	<0.03
Trichloroethylene	0.061	0.03	µg/g	NA	NA	NA	NA	NA	<0.03	<0.03	<0.03
Bromodichloromethane	1.5	0.05	µg/g	NA	NA	NA	NA	NA	<0.05	<0.05	<0.05
Methyl Isobutyl Ketone	1.7	0.5	µg/g	NA	NA	NA	NA	NA	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	0.05	0.04	µg/g	NA	NA	NA	NA	NA	<0.04	<0.04	<0.04
Toluene	2.3	0.05	µg/g	NA	NA	NA	<0.05	<0.05	<0.05	<0.05	<0.05
Dibromochloromethane	2.3	0.05	µg/g	NA	NA	NA	NA	NA	<0.05	<0.05	<0.05
Ethylene Dibromide	0.05	0.04	µg/g	NA	NA	NA	NA	NA	<0.04	<0.04	<0.04
Tetrachloroethylene	0.28	0.05	µg/g	NA	NA	NA	NA	NA	<0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	0.058	0.04	µg/g	NA	NA	NA	NA	NA	<0.04	<0.04	<0.04
Chlorobenzene	2.4	0.05	µg/g	NA	NA	NA	NA	NA	<0.05	<0.05	<0.05
Ethylbenzene	1.1	0.05	µg/g	NA	NA	NA	<0.05	<0.05	<0.05	<0.05	<0.05
m/p-Xylene	NS	0.05	µg/g	NA	NA	NA	<0.05	<0.05	<0.05	<0.05	<0.05
Bromoform	0.27	0.05	µg/g	NA	NA	NA	NA	NA	<0.05	<0.05	<0.05
Styrene	0.7	0.05	µg/g	NA	NA	NA	NA	NA	<0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	0.05	0.05	µg/g	NA	NA	NA	NA	NA	<0.05	<0.05	<0.05
o-Xylene	NS	0.05	µg/g	NA	NA	NA	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichlorobenzene	4.8	0.05	µg/g	NA	NA	NA	NA	NA	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	0.083	0.05	µg/g	NA	NA	NA	NA	NA	<0.05	<0.05	<0.05
1,2-Dichlorobenzene	1.2	0.05	µg/g	NA	NA	NA	NA	NA	<0.05	<0.05	<0.05
Xylenes, total	3.1	0.05	µg/g	NA	NA	NA	<0.05	<0.05	<0.05	<0.05	<0.05
1,3-Dichloropropene, total	0.05	0.04	µg/g	NA	NA	NA	NA	NA	<0.04	<0.04	<0.04
Hexane	2.8	0.05	µg/g	NA	NA	NA	NA	NA	<0.05	<0.05	<0.05

Notes:
Agri - Agricultural
'mbgs' - Metres Below Ground Surface
'NS' - No Standard
'NA' - Not Analyzed
<' - Non-Detect Sample

MECP Table 2 SCS: Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act. Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition, Agriculture or Other Property Use with Coarse textured soils (MECP, 2011).

BOLD - Exceeds MECP Table 2 Agri SCS

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Table C.3: Summary of Soil Analytical Results
Toxicity Characteristic Leaching Procedure
Phase Two Environmental Site Assessment
6158 Rideau Valley Drive Ottawa Ontario

Contaminants of Concern	O.Reg. 347/558 Schedule 4	Reporting Detection Limit	Sample ID Lab ID Sampling Date Units	TCLP 6022156 07/18/2024
Physical Characteristics				
Flashpoint	NS	NA	Deg C	>100
EPA 1311 - TCLP Leachate Inorganics				
Fluoride	150	0.1	mg/L	0.18
Nitrate + Nitrite (as Nitrogen)	1000	0.7	mg/L	<0.70
Cyanide, free	20	0.05	mg/L	<0.05
EPA 1311 - TCLP Leachate Metals				
Arsenic	2.5	0.01	mg/L	<0.010
Barium	100	0.02	mg/L	0.537
Boron	500	0.05	mg/L	<0.050
Cadmium	0.5	0.01	mg/L	<0.010
Chromium	5	0.05	mg/L	<0.050
Lead	5	0.01	mg/L	<0.010
Mercury	0.1	0.01	mg/L	<0.01
Selenium	1	0.02	mg/L	<0.020
Silver	5	0.01	mg/L	<0.010
Uranium	10	0.05	mg/L	<0.050
EPA 1311 - TCLP Leachate Volatiles				
Benzene	0.5	0.02	mg/L	<0.020
Carbon Tetrachloride	0.5	0.02	mg/L	<0.020
Chlorobenzene	8	0.01	mg/L	<0.010
Chloroform	10	0.02	mg/L	<0.020
1,2-Dichlorobenzene	20	0.01	mg/L	<0.010
1,4-Dichlorobenzene	0.5	0.01	mg/L	<0.010
1,2-Dichloroethane	0.5	0.02	mg/L	<0.020
1,1-Dichloroethylene	1.4	0.02	mg/L	<0.020
Methyl Ethyl Ketone (2-Butanone)	200	0.09	mg/L	<0.090
Methylene Chloride	5	0.03	mg/L	<0.030
Tetrachloroethylene	3	0.05	mg/L	<0.050
Trichloroethylene	5	0.02	mg/L	<0.020
Vinyl Chloride	0.2	0.03	mg/L	<0.030
EPA 1311 - TCLP Leachate Organics				
Benzo[a]pyrene	0.001	0.001	mg/L	<0.001

Notes:
MDL': Method Detection Limit or Reporting Limit
NS ' : No Standard Established
ND ' : Non Detect
1. O.Reg. 347/558 Schedule 4: O.Reg 347 and O. Reg. 558/00: General – Waste Management. Schedule 4: Leachate Quality Criteria. (MECP, 2011)
Bold Exceeds O.Reg 347/558 Schedule 4

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Table C.4: Summary of Groundwater Analytical Results
Metals, Inorganics, and Polycyclic Aromatic Hydrocarbons
Phase Two Environmental Site Assessment
6158 Rideau Valley Drive Ottawa Ontario

Contaminants of Concern	MECP Table 2 Potable Groundwater - All Types of Property Uses and Coarse Soil	Reporting Detection Limit	Sample ID	MW-1	MW-3	MW-4	MW-104	MW-5
			Screen Interval (m bgs)	2.13 - 5.18	1.52 - 4.57	1.52 - 4.57	1.52 - 4.57	3.05 - 6.10
			Lab ID	6050321	6050322	6050323	6050324	6050325
			Sampling Date	08/02/2024	08/02/2024	08/02/2024	08/02/2024	08/02/2024
			Units					
Metals - Groundwater								
Sodium	490000	50	µg/L	22000	NA	NA	NA	NA
Chloride	790000	100	µg/L	31100	NA	NA	NA	NA
Polycyclic Aromatic Hydrocarbons - Groundwater								
Naphthalene	11	0.2	µg/L	NA	<0.20	<0.20	<0.20	<0.20
Acenaphthylene	1	0.2	µg/L	NA	<0.20	<0.20	<0.20	<0.20
Acenaphthene	4.1	0.2	µg/L	NA	<0.20	<0.20	<0.20	<0.20
Fluorene	120	0.2	µg/L	NA	<0.20	<0.20	<0.20	<0.20
Phenanthrene	1	0.1	µg/L	NA	<0.10	<0.10	<0.10	<0.10
Anthracene	2.4	0.1	µg/L	NA	<0.10	<0.10	<0.10	<0.10
Fluoranthene	0.41	0.2	µg/L	NA	<0.20	<0.20	<0.20	<0.20
Pyrene	4.1	0.2	µg/L	NA	<0.20	<0.20	<0.20	<0.20
Benzo[a]anthracene	1	0.2	µg/L	NA	<0.20	<0.20	<0.20	<0.20
Chrysene	0.1	0.1	µg/L	NA	<0.10	<0.10	<0.10	<0.10
Benzo[b]fluoranthene	0.1	0.1	µg/L	NA	<0.10	<0.10	<0.10	<0.10
Benzo[k]fluoranthene	0.1	0.1	µg/L	NA	<0.10	<0.10	<0.10	<0.10
Benzo[a]pyrene	0.01	0.01	µg/L	NA	<0.01	<0.01	<0.01	<0.01
Indeno[1 2 3-cd]pyrene	0.2	0.2	µg/L	NA	<0.20	<0.20	<0.20	<0.20
Dibenzo[a,h]anthracene	0.2	0.2	µg/L	NA	<0.20	<0.20	<0.20	<0.20
Benzo[ghi]perylene	0.2	0.2	µg/L	NA	<0.20	<0.20	<0.20	<0.20
Methylnaphthalene (1&2)	3.2	0.2	µg/L	NA	<0.20	<0.20	<0.20	<0.20

Notes:
m bgs' - Metres Below Ground Surface
'NA' - Not Analyzed
<' - Non-Detect Sample

MECP Table 2 SCS: Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act. Table 2: Full Depth Generic Site Condition Standards, Potable Ground Water for All Types of Property Use with Coarse textured soils (MECP, 2011).

BOLD - Exceeds MECP Table 2 All Property Uses

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Table C.5: Summary of Groundwater Analytical Results
Petroleum Hydrocarbon Four Fractions and Volatile Organic Compounds
Phase Two Environmental Site Assessment
6158 Rideau Valley Drive Ottawa Ontario

Contaminants of Concern	MECP Table 2 Potable Groundwater - All Types of Property Uses and Coarse Soil	Reporting Detection Limit	Sample ID	MW-1	MW-3	MW-4	MW-104	MW-5	Trip Blank	Field Blank
			Screen Interval (m bgs)	2.13 - 5.18	1.52 - 4.57	1.52 - 4.57	1.52 - 4.57	3.05 - 6.10	--	--
			Lab ID	6050321	6050322	6050323	6050324	6050325	6050326	6050327
			Sampling Date	08/02/2024	08/02/2024	08/02/2024	08/02/2024	08/02/2024	08/02/2024	08/02/2024
			Units							
Petroleum Hydrocarbons - Groundwater										
F1 PHCs (C6-C10)	750	25	µg/L	NA	<25	<25	<25	<25	<25	<25
F1 PHCs (C6-C10) minus BTEX	NS	25	µg/L	NA	<25	<25	<25	<25	<25	<25
F2 PHCs (C10-C16)	150	100	µg/L	NA	<100	<100	<100	<100	NA	NA
F3 PHCs (C16-C34)	500	100	µg/L	NA	<100	<100	<100	<100	NA	NA
F4 PHCs (C34-C50)	500	100	µg/L	NA	<100	<100	<100	<100	NA	NA
Volatile Organic Compounds - Groundwater										
Dichlorodifluoromethane	590	0.4	µg/L	NA	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Vinyl Chloride	0.5	0.17	µg/L	NA	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17
Bromomethane	0.89	0.2	µg/L	NA	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Trichlorofluoromethane	150	0.4	µg/L	NA	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Acetone	2700	1	µg/L	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethylene	1.6	0.3	µg/L	NA	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Methylene Chloride	50	0.3	µg/L	NA	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
trans-1,2-Dichloroethylene	1.6	0.2	µg/L	NA	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Methyl tert-Butyl Ether (MTBE)	15	0.2	µg/L	NA	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1-Dichloroethane	5	0.3	µg/L	NA	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Methyl Ethyl Ketone (2-Butanone)	1800	1	µg/L	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethylene	1.6	0.2	µg/L	NA	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chloroform	2.4	0.2	µg/L	NA	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichloroethane	1.6	0.2	µg/L	NA	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1,1-Trichloroethane	200	0.3	µg/L	NA	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Carbon Tetrachloride	0.79	0.2	µg/L	NA	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Benzene	5	0.2	µg/L	NA	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichloropropane	5	0.2	µg/L	NA	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Trichloroethylene	1.6	0.2	µg/L	NA	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Bromodichloromethane	16	0.2	µg/L	NA	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Methyl Isobutyl Ketone	640	1	µg/L	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	4.7	0.2	µg/L	NA	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	24	0.2	µg/L	NA	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dibromochloromethane	25	0.1	µg/L	NA	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Ethylene Dibromide	0.2	0.1	µg/L	NA	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Tetrachloroethylene	1.6	0.2	µg/L	NA	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1,1,2-Tetrachloroethane	1.1	0.1	µg/L	NA	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Chlorobenzene	30	0.1	µg/L	NA	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Ethylbenzene	2.4	0.1	µg/L	NA	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
m/p-Xylene	NS	0.2	µg/L	NA	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Bromoform	25	0.1	µg/L	NA	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Styrene	5.4	0.1	µg/L	NA	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,1,2,2-Tetrachloroethane	1	0.1	µg/L	NA	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
o-Xylene	NS	0.1	µg/L	NA	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,3-Dichlorobenzene	59	0.1	µg/L	NA	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	1	0.1	µg/L	NA	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,2-Dichlorobenzene	3	0.1	µg/L	NA	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,3-Dichloropropene, total	0.5	0.3	µg/L	NA	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Xylenes, total	300	0.2	µg/L	NA	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Hexane	51	0.2	µg/L	NA	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

Notes:
m bgs' - Metres Below Ground Surface
'NS' - No Standard
'NA' - Not Analyzed
<' - Non-Detect Sample
MECP Table 2 SCS: Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act. Table 2: Full Depth Generic Site Condition Standards, Potable Ground Water for All Types of Property Use with Coarse textured soils (MECP, 2011).

BOLD - Exceeds MECP Table 2 All Property Uses

Table C.6 Soil Analytical Results - Relative Percent Difference
Phase Two Environmental Site Assessment
6158 Rideau Valley Drive Ottawa Ontario

	Units	Reporting Limit	5*Reporting Limit	Sample ID: Laboratory ID: Date Sampled: Sample Depth (mbgs): MECP Alert Criteria	BH24-01 SA5 6022137 07/18/2024 3.04 - 3.81	BH24-01 SA105 6022154 07/18/2024 3.04 - 3.81	RPD	BH24-05 SA107 6022155 07/18/2024 4.57 - 5.48	BH24-06 SA7 6022151 07/18/2024 4.57 - 5.18	RPD
Inorganics (Soil)										
Conductivity (ms/cm)	mS/cm	0.005	0.025	10%	0.149	0.198	**28.24%**	NA	NA	-
Sodium Adsorption Ratio	N/A	N/A	-	-	5.03	0.479	-	NA	NA	-
Volatile Organic Compounds (Soil)										
Dichlorodifluoromethane	ug/g	0.05	0.25	50%	NA	NA	-	<0.05	<0.05	-
Vinyl Chloride	ug/g	0.02	0.1	50%	NA	NA	-	<0.02	<0.02	-
Bromomethane	ug/g	0.05	0.25	50%	NA	NA	-	<0.05	<0.05	-
Trichlorofluoromethane	ug/g	0.05	0.25	50%	NA	NA	-	<0.05	<0.05	-
Acetone	ug/g	0.5	2.5	50%	NA	NA	-	<0.50	<0.50	-
1,1-Dichloroethylene	ug/g	0.05	0.25	50%	NA	NA	-	<0.05	<0.05	-
Methylene Chloride	ug/g	0.05	0.25	50%	NA	NA	-	<0.05	<0.05	-
trans-1,2-Dichloroethylene	ug/g	0.05	0.25	50%	NA	NA	-	<0.05	<0.05	-
Methyl tert-butyl Ether	ug/g	0.05	0.25	50%	NA	NA	-	<0.05	<0.05	-
1,1-Dichloroethane	ug/g	0.02	0.1	50%	NA	NA	-	<0.02	<0.02	-
Methyl Ethyl Ketone	ug/g	0.5	2.5	50%	NA	NA	-	<0.50	<0.50	-
cis-1,2-Dichloroethylene	ug/g	0.02	0.1	50%	NA	NA	-	<0.02	<0.02	-
Chloroform	ug/g	0.04	0.2	50%	NA	NA	-	<0.04	<0.04	-
1,2-Dichloroethane	ug/g	0.03	0.15	50%	NA	NA	-	<0.03	<0.03	-
1,1,1-Trichloroethane	ug/g	0.05	0.25	50%	NA	NA	-	<0.05	<0.05	-
Carbon Tetrachloride	ug/g	0.05	0.25	50%	NA	NA	-	<0.05	<0.05	-
Benzene	ug/g	0.02	0.1	50%	NA	NA	-	<0.02	<0.02	-
1,2-Dichloropropane	ug/g	0.03	0.15	50%	NA	NA	-	<0.03	<0.03	-
Trichloroethylene	ug/g	0.03	0.15	50%	NA	NA	-	<0.03	<0.03	-
Bromodichloromethane	ug/g	0.05	0.25	50%	NA	NA	-	<0.05	<0.05	-
Methyl Isobutyl Ketone	ug/g	0.5	2.5	50%	NA	NA	-	<0.50	<0.50	-
1,1,2-Trichloroethane	ug/g	0.04	0.2	50%	NA	NA	-	<0.04	<0.04	-
Toluene	ug/g	0.05	0.25	50%	NA	NA	-	<0.05	<0.05	-
Dibromochloromethane	ug/g	0.05	0.25	50%	NA	NA	-	<0.05	<0.05	-
Ethylene Dibromide	ug/g	0.04	0.2	50%	NA	NA	-	<0.04	<0.04	-
Tetrachloroethylene	ug/g	0.05	0.25	50%	NA	NA	-	<0.05	<0.05	-
1,1,1,2-Tetrachloroethane	ug/g	0.04	0.2	50%	NA	NA	-	<0.04	<0.04	-
Chlorobenzene	ug/g	0.05	0.25	50%	NA	NA	-	<0.05	<0.05	-
Ethylbenzene	ug/g	0.05	0.25	50%	NA	NA	-	<0.05	<0.05	-
m/p-Xylene	ug/g	0.05	0.25	50%	NA	NA	-	<0.05	<0.05	-
Bromoform	ug/g	0.05	0.25	50%	NA	NA	-	<0.05	<0.05	-
Styrene	ug/g	0.05	0.25	50%	NA	NA	-	<0.05	<0.05	-
1,1,2,2-Tetrachloroethane	ug/g	0.05	0.25	50%	NA	NA	-	<0.05	<0.05	-
o-Xylene	ug/g	0.05	0.25	50%	NA	NA	-	<0.05	<0.05	-
1,3-Dichlorobenzene	ug/g	0.05	0.25	50%	NA	NA	-	<0.05	<0.05	-
1,4-Dichlorobenzene	ug/g	0.05	0.25	50%	NA	NA	-	<0.05	<0.05	-
1,2-Dichlorobenzene	ug/g	0.05	0.25	50%	NA	NA	-	<0.05	<0.05	-
Xylenes, total	ug/g	0.05	0.25	50%	NA	NA	-	<0.05	<0.05	-
1,3-Dichloropropene, total	ug/g	0.04	0.2	50%	NA	NA	-	<0.04	<0.04	-
Hexane	ug/g	0.05	0.25	50%	NA	NA	-	<0.05	<0.05	-

Notes:
'NA': Not Analyzed
'<' : Non Detect
'm bgs' : metres below ground surface
BOLD Exceeds MECP Alert Criteria

Table C.7 Groundwater Analytical Results - Relative Percent Difference
Phase Two Environmental Site Assessment
6158 Rideau Valley Drive Ottawa Ontario

	Units	Reporting Limit	5*Reporting Limit	Sample ID: / Laboratory ID: / Date Sampled: / Screen Interval (m bgs): / MECP Alert Criteria	MW-4 / 6050323 / 08/02/2024 / 1.52 - 4.57	MW-104 / 6050324 / 08/02/2024 / 1.52 - 4.57	RPD
Polycyclic Aromatic Hydrocarbons (Groundwater)							
Naphthalene	µg/L	0.2	1	30%	<0.20	<0.20	-
Acenaphthylene	µg/L	0.2	1	30%	<0.20	<0.20	-
Acenaphthene	µg/L	0.2	1	30%	<0.20	<0.20	-
Fluorene	µg/L	0.2	1	30%	<0.20	<0.20	-
Phenanthrene	µg/L	0.1	0.5	30%	<0.10	<0.10	-
Anthracene	µg/L	0.1	0.5	30%	<0.10	<0.10	-
Fluoranthene	µg/L	0.2	1	30%	<0.20	<0.20	-
Pyrene	µg/L	0.2	1	30%	<0.20	<0.20	-
Benzo[a]anthracene	µg/L	0.2	1	30%	<0.20	<0.20	-
Chrysene	µg/L	0.1	0.5	30%	<0.10	<0.10	-
Benzo[b]fluoranthene	µg/L	0.1	0.5	30%	<0.10	<0.10	-
Benzo[k]fluoranthene	µg/L	0.1	0.5	30%	<0.10	<0.10	-
Benzo[a]pyrene	µg/L	0.01	0.05	30%	<0.01	<0.01	-
Indeno[1 2 3-cd]pyrene	µg/L	0.2	1	30%	<0.20	<0.20	-
Dibenzo[a,h]anthracene	µg/L	0.2	1	30%	<0.20	<0.20	-
Benzo[ghi]perylene	µg/L	0.2	1	30%	<0.20	<0.20	-
Methylnaphthalene (1&2)	µg/L	0.2	1	30%	<0.20	<0.20	-
Volatile Organic Compounds (Groundwater)							
Dichlorodifluoromethane	µg/L	0.4	2	30%	<0.40	<0.40	-
Vinyl Chloride	µg/L	0.17	0.85	30%	<0.17	<0.17	-
Bromomethane	µg/L	0.2	1	30%	<0.20	<0.20	-
Trichlorofluoromethane	µg/L	0.4	2	30%	<0.40	<0.40	-
Acetone	µg/L	1	5	30%	<1.0	<1.0	-
1,1-Dichloroethylene	µg/L	0.3	1.5	30%	<0.30	<0.30	-
Methylene Chloride	µg/L	0.3	1.5	30%	<0.30	<0.30	-
trans-1,2-Dichloroethylene	µg/L	0.2	1	30%	<0.20	<0.20	-
Methyl tert-Butyl Ether (MTBE)	µg/L	0.2	1	30%	<0.20	<0.20	-
1,1-Dichloroethane	µg/L	0.3	1.5	30%	<0.30	<0.30	-
Methyl Ethyl Ketone (2-Butanone)	µg/L	1	5	30%	<1.0	<1.0	-
cis-1,2-Dichloroethylene	µg/L	0.2	1	30%	<0.20	<0.20	-
Chloroform	µg/L	0.2	1	30%	<0.20	<0.20	-
1,2-Dichloroethane	µg/L	0.2	1	30%	<0.20	<0.20	-
1,1,1-Trichloroethane	µg/L	0.3	1.5	30%	<0.30	<0.30	-
Carbon Tetrachloride	µg/L	0.2	1	30%	<0.20	<0.20	-
Benzene	µg/L	0.2	1	30%	<0.20	<0.20	-
1,2-Dichloropropane	µg/L	0.2	1	30%	<0.20	<0.20	-
Trichloroethylene	µg/L	0.2	1	30%	<0.20	<0.20	-
Bromodichloromethane	µg/L	0.2	1	30%	<0.20	<0.20	-
Methyl Isobutyl Ketone	µg/L	1	5	30%	<1.0	<1.0	-
1,1,2-Trichloroethane	µg/L	0.2	1	30%	<0.20	<0.20	-
Toluene	µg/L	0.2	1	30%	<0.20	<0.20	-
Dibromochloromethane	µg/L	0.1	0.5	30%	<0.10	<0.10	-
Ethylene Dibromide	µg/L	0.1	0.5	30%	<0.10	<0.10	-
Tetrachloroethylene	µg/L	0.2	1	30%	<0.20	<0.20	-
1,1,1,2-Tetrachloroethane	µg/L	0.1	0.5	30%	<0.10	<0.10	-
Chlorobenzene	µg/L	0.1	0.5	30%	<0.10	<0.10	-
Ethylbenzene	µg/L	0.1	0.5	30%	<0.10	<0.10	-
m/p-Xylene	µg/L	0.2	1	30%	<0.20	<0.20	-
Bromoform	µg/L	0.1	0.5	30%	<0.10	<0.10	-
Styrene	µg/L	0.1	0.5	30%	<0.10	<0.10	-
1,1,2,2-Tetrachloroethane	µg/L	0.1	0.5	30%	<0.10	<0.10	-
o-Xylene	µg/L	0.1	0.5	30%	<0.10	<0.10	-
1,3-Dichlorobenzene	µg/L	0.1	0.5	30%	<0.10	<0.10	-
1,4-Dichlorobenzene	µg/L	0.1	0.5	30%	<0.10	<0.10	-
1,2-Dichlorobenzene	µg/L	0.1	0.5	30%	<0.10	<0.10	-
1,3-Dichloropropene, total	µg/L	0.3	1.5	30%	<0.30	<0.30	-
Xylenes, total	µg/L	0.2	1	30%	<0.20	<0.20	-
Hexane	µg/L	0.2	1	30%	<0.20	<0.20	-
Petroleum Hydrocarbons (Groundwater)							
F1 PHCs (C6-C10)	µg/L	25	125	30%	<25	<25	-
F1 PHCs (C6-C10) minus BTEX	µg/L	25	125	30%	<25	<25	-
F2 PHCs (C10-C16)	µg/L	100	500	30%	<100	<100	-
F3 PHCs (C16-C34)	µg/L	100	500	30%	<100	<100	-
F4 PHCs (C34-C50)	µg/L	100	500	30%	<100	<100	-

Notes:
'<' : Non Detect
'm bgs' : metres below ground surface
BOLD Exceeds MECP Alert Criteria

APPENDIX D

Certificate of Analysis

AGAT Laboratories

5835 COOPERS AVENUE
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CANADA L4Z 1Y2
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CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS
32 STEACIE DRIVE
OTTAWA, ON K2K 2A9
(613) 836-1422
ATTENTION TO: Mohit Bhargav
PROJECT: 100011.082 - Bulk Soil Submission
AGAT WORK ORDER: 24Z176204
SOIL ANALYSIS REVIEWED BY: Sukhwinder Randhawa, Inorganic Team Lead
TRACE ORGANICS REVIEWED BY: Pinkal Patel, Report Reviewer
DATE REPORTED: Jul 31, 2024
PAGES (INCLUDING COVER): 23
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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- *This document is signed by an authorized signatory who meets the requirements of the MELCCFP, CALA, CCN and NELAP.*
- *For environmental samples in the Province of Quebec: The analysis is performed on and results apply to samples as received. A temperature above 6°C upon receipt, as indicated in the Sample Reception Notification (SRN), could indicate the integrity of the samples has been compromised if the delay between sampling and submission to the laboratory could not be minimized.*

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Certificate of Analysis

AGAT WORK ORDER: 24Z176204

PROJECT: 100011.082 - Bulk Soil Submission

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Mohit Bhargav

SAMPLING SITE:6158 Rideau Valley Dr Ottawa ON

SAMPLED BY:CD

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

DATE RECEIVED: 2024-07-22

DATE REPORTED: 2024-07-31

		SAMPLE DESCRIPTION:		BH24-01 SA5	BH24-02 SA3	BH24-01 SA105
		SAMPLE TYPE:		Soil	Soil	Soil
		DATE SAMPLED:		2024-07-18	2024-07-18	2024-07-18
Parameter	Unit	G / S	RDL	6022137	6022139	6022154
Electrical Conductivity (2:1)	mS/cm	0.47	0.005	0.149	0.406	0.198
Sodium Adsorption Ratio (2:1) (Calc.)	N/A	1	N/A	**5.03**	0.963	0.479

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Soil - Agricultural or Other 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.

6022137-6022154 EC was determined on the DI water extract obtained from the 2:1 leaching procedure (2 parts DI water:1 part soil). SAR is a calculated parameter.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

AGAT Laboratories

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AGAT WORK ORDER: 24Z176204

PROJECT: 100011.082 - Bulk Soil Submission

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Mohit Bhargav

SAMPLING SITE:6158 Rideau Valley Dr Ottawa ON

SAMPLED BY:CD

O. Reg. 558 - Metals & Inorganics

DATE RECEIVED: 2024-07-22

DATE REPORTED: 2024-07-31

		SAMPLE DESCRIPTION:		TCLP
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2024-07-18
Parameter	Unit	G / S	RDL	6022156
Arsenic Leachate	mg/L	2.5	0.010	<0.010
Barium Leachate	mg/L	100	0.020	0.537
Boron Leachate	mg/L	500	0.050	<0.050
Cadmium Leachate	mg/L	0.5	0.010	<0.010
Chromium Leachate	mg/L	5	0.050	<0.050
Lead Leachate	mg/L	5	0.010	<0.010
Mercury Leachate	mg/L	0.1	0.01	<0.01
Selenium Leachate	mg/L	1	0.020	<0.020
Silver Leachate	mg/L	5	0.010	<0.010
Uranium Leachate	mg/L	10	0.050	<0.050
Fluoride Leachate	mg/L	150	0.10	0.18
Cyanide Leachate	mg/L	20	0.05	<0.05
(Nitrate + Nitrite) as N Leachate	mg/L	1000	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:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 24Z176204

PROJECT: 100011.082 - Bulk Soil Submission

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Mohit Bhargav

SAMPLING SITE:6158 Rideau Valley Dr Ottawa ON

SAMPLED BY:CD

Flash Point Analysis

DATE RECEIVED: 2024-07-22 **DATE REPORTED: 2024-07-31**

		SAMPLE DESCRIPTION:		TCLP
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2024-07-18
Parameter	**Unit**	**G / S**	**RDL**	**6022156**
Flash point (Pensky Martin Closed Cup)	Deg C		NA	>100

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

Analysis performed at AGAT Calgary (unless marked by *)

Certified By: Jinkal Patel

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 24Z176204

PROJECT: 100011.082 - Bulk Soil Submission

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Mohit Bhargav

SAMPLING SITE:6158 Rideau Valley Dr Ottawa ON

SAMPLED BY:CD

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

DATE RECEIVED: 2024-07-22 **DATE REPORTED: 2024-07-31**

		SAMPLE DESCRIPTION:		BH24-03 SA5	BH24-04 SA5	BH24-05 SA7	BH24-06 SA7	BH24-05 SA107
		SAMPLE TYPE:		Soil	Soil	Soil	Soil	Soil
		DATE SAMPLED:		2024-07-18	2024-07-18	2024-07-18	2024-07-18	2024-07-18
Parameter	**Unit**	**G / S**	**RDL**	**6022148**	**6022149**	**6022150**	**6022151**	**6022155**
Naphthalene	µg/g	0.05	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	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluorene	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Phenanthrene	µg/g	0.19	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Anthracene	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluoranthene	µg/g	0.24	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Pyrene	µg/g	0.19	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)anthracene	µg/g	0.095	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	µg/g	0.18	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(b)fluoranthene	µg/g	0.3	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	µg/g	0.11	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	0.2	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
2-and 1-methyl Naphthalene	µg/g	0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Moisture Content	%		0.1	9.0	14.1	10.3	10.3	9.5
Surrogate	**Unit**	**Acceptable Limits**						
Naphthalene-d8	%	50-140		70	70	70	75	75
Acridine-d9	%	50-140		105	90	85	115	85
Terphenyl-d14	%	50-140		80	75	80	90	80

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Soil - Agricultural or Other 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.

6022148-6022155 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: Pinkal Patel

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Certificate of Analysis

AGAT WORK ORDER: 24Z176204

PROJECT: 100011.082 - Bulk Soil Submission

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Mohit Bhargav

SAMPLING SITE:6158 Rideau Valley Dr Ottawa ON

SAMPLED BY:CD

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

DATE RECEIVED: 2024-07-22

DATE REPORTED: 2024-07-31

		SAMPLE DESCRIPTION:		BH24-03 SA5	BH24-04 SA5
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2024-07-18	2024-07-18
Parameter	**Unit**	**G / S**	**RDL**	**6022148**	**6022149**
Benzene	µg/g	0.02	0.02	<0.02	<0.02
Toluene	µg/g	0.2	0.05	<0.05	<0.05
Ethylbenzene	µg/g	0.05	0.05	<0.05	<0.05
m & p-Xylene	µg/g		0.05	<0.05	<0.05
o-Xylene	µg/g		0.05	<0.05	<0.05
Xylenes (Total)	µg/g	0.05	0.05	<0.05	<0.05
F1 (C6 to C10)	µg/g	17	5	<5	<5
F1 (C6 to C10) minus BTEX	µg/g	17	5	<5	<5
F2 (C10 to C16)	µg/g	10	10	<10	<10
F2 (C10 to C16) minus Naphthalene	µg/g		10	<10	<10
F3 (C16 to C34)	µg/g	240	50	<50	<50
F3 (C16 to C34) minus PAHs	µg/g		50	<50	<50
F4 (C34 to C50)	µg/g	120	50	<50	<50
Gravimetric Heavy Hydrocarbons	µg/g	120	50	NA	NA
Moisture Content	%		0.1	9.0	14.1
Surrogate	**Unit**	**Acceptable Limits**			
Toluene-d8	% Recovery	60-140		73	71
Terphenyl	%	60-140		76	71

Certified By:

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AGAT WORK ORDER: 24Z176204

PROJECT: 100011.082 - Bulk Soil Submission

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Mohit Bhargav

SAMPLING SITE:6158 Rideau Valley Dr Ottawa ON

SAMPLED BY:CD

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

DATE RECEIVED: 2024-07-22 **DATE REPORTED: 2024-07-31**

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Soil - Agricultural or Other 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.

6022148-6022149 Results are based on sample dry weight.
The C6-C10 fraction is calculated using toluene response factor.
Xylenes total is a calculated parameter. The calculated value is the sum of m&p-Xylene and o-Xylene.
C6–C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX.
The calculated parameters are 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: Pinkal Patel

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AGAT WORK ORDER: 24Z176204

PROJECT: 100011.082 - Bulk Soil Submission

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Mohit Bhargav

SAMPLING SITE:6158 Rideau Valley Dr Ottawa ON

SAMPLED BY:CD

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

DATE RECEIVED: 2024-07-22

DATE REPORTED: 2024-07-31

		SAMPLE DESCRIPTION:		BH24-05 SA7	BH24-06 SA7	BH24-05 SA107
		SAMPLE TYPE:		Soil	Soil	Soil
		DATE SAMPLED:		2024-07-18	2024-07-18	2024-07-18
Parameter	Unit	G / S	RDL	6022150	6022151	6022155
Dichlorodifluoromethane	µg/g	0.05	0.05	<0.05	<0.05	<0.05
Vinyl Chloride	ug/g	0.02	0.02	<0.02	<0.02	<0.02
Bromomethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05
Acetone	ug/g	0.5	0.50	<0.50	<0.50	<0.50
1,1-Dichloroethylene	ug/g	0.05	0.05	<0.05	<0.05	<0.05
Methylene Chloride	ug/g	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
Methyl tert-butyl Ether	ug/g	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
Methyl Ethyl Ketone	ug/g	0.5	0.50	<0.50	<0.50	<0.50
Cis- 1,2-Dichloroethylene	ug/g	0.05	0.02	<0.02	<0.02	<0.02
Chloroform	ug/g	0.05	0.04	<0.04	<0.04	<0.04
1,2-Dichloroethane	ug/g	0.05	0.03	<0.03	<0.03	<0.03
1,1,1-Trichloroethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	ug/g	0.05	0.05	<0.05	<0.05	<0.05
Benzene	ug/g	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
Trichloroethylene	ug/g	0.05	0.03	<0.03	<0.03	<0.03
Bromodichloromethane	ug/g	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
1,1,2-Trichloroethane	ug/g	0.05	0.04	<0.04	<0.04	<0.04
Toluene	ug/g	0.2	0.05	<0.05	<0.05	<0.05
Dibromochloromethane	ug/g	0.05	0.05	<0.05	<0.05	<0.05
Ethylene Dibromide	ug/g	0.05	0.04	<0.04	<0.04	<0.04
Tetrachloroethylene	ug/g	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
Chlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05
Ethylbenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05
m & p-Xylene	ug/g		0.05	<0.05	<0.05	<0.05

Certified By: Pinkal Patel

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Certificate of Analysis

AGAT WORK ORDER: 24Z176204

PROJECT: 100011.082 - Bulk Soil Submission

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Mohit Bhargav

SAMPLING SITE:6158 Rideau Valley Dr Ottawa ON

SAMPLED BY:CD

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

DATE RECEIVED: 2024-07-22 **DATE REPORTED: 2024-07-31**

		SAMPLE DESCRIPTION:		BH24-05 SA7	BH24-06 SA7	BH24-05 SA107
		SAMPLE TYPE:		Soil	Soil	Soil
		DATE SAMPLED:		2024-07-18	2024-07-18	2024-07-18
Parameter	**Unit**	**G / S**	**RDL**	**6022150**	**6022151**	**6022155**
Bromoform	ug/g	0.05	0.05	<0.05	<0.05	<0.05
Styrene	ug/g	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
o-Xylene	ug/g		0.05	<0.05	<0.05	<0.05
1,3-Dichlorobenzene	ug/g	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
1,2-Dichlorobenzene	ug/g	0.05	0.05	<0.05	<0.05	<0.05
Xylenes (Total)	ug/g	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
n-Hexane	µg/g	0.05	0.05	<0.05	<0.05	<0.05
Moisture Content	%		0.1	10.3	10.3	9.5
Surrogate	**Unit**	**Acceptable Limits**				
Toluene-d8	% Recovery	50-140		83	81	83
4-Bromofluorobenzene	% Recovery	50-140		114	110	112

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to Table 1: Full Depth Background Site Condition Standards - Soil - Agricultural or Other 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.

6022150-6022155 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: Pinkal Patel

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Certificate of Analysis

AGAT WORK ORDER: 24Z176204

PROJECT: 100011.082 - Bulk Soil Submission

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Mohit Bhargav

SAMPLING SITE:6158 Rideau Valley Dr Ottawa ON

SAMPLED BY:CD

O. Reg. 558 - Benzo(a)pyrene

DATE RECEIVED: 2024-07-22 **DATE REPORTED: 2024-07-31**

		SAMPLE DESCRIPTION:		TCLP
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2024-07-18
Parameter	**Unit**	**G / S**	**RDL**	**6022156**
Benzo(a)pyrene Leachate	mg/L	0.001	0.001	<0.001
Surrogate	**Unit**	**Acceptable Limits**		
Acridine-d9	%	50-140		85
Naphthalene-d8	%	50-140		70
Terphenyl-d14	%	50-140		110

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.

6022156 The sample was leached according to Regulation 558 protocol. Analysis was performed on the leachate.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

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AGAT WORK ORDER: 24Z176204

PROJECT: 100011.082 - Bulk Soil Submission

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Mohit Bhargav

SAMPLING SITE:6158 Rideau Valley Dr Ottawa ON

SAMPLED BY:CD

O. Reg. 558 - VOCs

DATE RECEIVED: 2024-07-22

DATE REPORTED: 2024-07-31

		SAMPLE DESCRIPTION:		TCLP
		SAMPLE TYPE:		Soil
		DATE SAMPLED:		2024-07-18
Parameter	Unit	G / S	RDL	6022156
Vinyl Chloride Leachate	mg/L	0.2	0.030	<0.030
1,1 Dichloroethene Leachate	mg/L	1.4	0.020	<0.020
Dichloromethane Leachate	mg/L	5.0	0.030	<0.030
Methyl Ethyl Ketone Leachate	mg/L	200	0.090	<0.090
Chloroform Leachate	mg/L	10.0	0.020	<0.020
1,2-Dichloroethane Leachate	mg/L	0.5	0.020	<0.020
Carbon Tetrachloride Leachate	mg/L	0.5	0.020	<0.020
Benzene Leachate	mg/L	0.5	0.020	<0.020
Trichloroethene Leachate	mg/L	5.0	0.020	<0.020
Tetrachloroethene Leachate	mg/L	3.0	0.050	<0.050
Chlorobenzene Leachate	mg/L	8.0	0.010	<0.010
1,2-Dichlorobenzene Leachate	mg/L	20.0	0.010	<0.010
1,4-Dichlorobenzene Leachate	mg/L	0.5	0.010	<0.010
Surrogate	**Unit**	**Acceptable Limits**		
Toluene-d8	% Recovery	50-140		97
4-Bromofluorobenzene	% Recovery	50-140		74

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.

6022156 Sample was prepared using Regulation 558 protocol and a zero headspace extractor.

Analysis performed at AGAT Toronto (unless marked by *)

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Exceedance Summary

AGAT WORK ORDER: 24Z176204

PROJECT: 100011.082 - Bulk Soil Submission

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Mohit Bhargav

SAMPLEID	SAMPLE TITLE	GUIDELINE	ANALYSIS PACKAGE	PARAMETER	UNIT	GUIDEVALUE	RESULT
6022137	BH24-01 SA5	ON T1 S AG	O. Reg. 153(511) - ORPs (Soil)	Sodium Adsorption Ratio (2:1) (Calc.)	N/A	1	5.03

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Quality Assurance

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS
AGAT WORK ORDER: 24Z176204
PROJECT: 100011.082 - Bulk Soil Submission
ATTENTION TO: Mohit Bhargav
SAMPLING SITE:6158 Rideau Valley Dr Ottawa ON
SAMPLED BY:CD

Soil Analysis

RPT Date: Jul 31, 2024			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - ORPs (Soil)															
Electrical Conductivity (2:1)	6022139	6022139	0.406	0.378	7.1%	< 0.005	109%	80%	120%						
Sodium Adsorption Ratio (2:1) (Calc.)	6032971		0.323	0.348	7.5%	NA									
Comments: NA signifies Not Applicable.															
O. Reg. 153(511) - ORPs (Soil)															
Sodium Adsorption Ratio (2:1) (Calc.)	6022139	6022139	0.963	0.965	0.2%	NA									
Comments: NA signifies Not Applicable.															
O. Reg. 558 - Metals & Inorganics															
Arsenic Leachate	6022156	6022156	<0.010	<0.010	NA	< 0.010	93%	70%	130%	109%	80%	120%	114%	70%	130%
Barium Leachate	6022156	6022156	0.537	0.552	2.8%	< 0.020	98%	70%	130%	101%	80%	120%	103%	70%	130%
Boron Leachate	6022156	6022156	<0.050	<0.050	NA	< 0.050	92%	70%	130%	97%	80%	120%	105%	70%	130%
Cadmium Leachate	6022156	6022156	<0.010	<0.010	NA	< 0.010	99%	70%	130%	107%	80%	120%	121%	70%	130%
Chromium Leachate	6022156	6022156	<0.050	<0.050	NA	< 0.050	97%	70%	130%	100%	80%	120%	96%	70%	130%
Lead Leachate	6022156	6022156	<0.010	<0.010	NA	< 0.010	93%	70%	130%	95%	80%	120%	97%	70%	130%
Mercury Leachate	6022156	6022156	<0.01	<0.01	NA	< 0.01	108%	70%	130%	101%	80%	120%	112%	70%	130%
Selenium Leachate	6022156	6022156	<0.020	<0.020	NA	< 0.020	97%	70%	130%	118%	80%	120%	122%	70%	130%
Silver Leachate	6022156	6022156	<0.010	<0.010	NA	< 0.010	94%	70%	130%	102%	80%	120%	106%	70%	130%
Uranium Leachate	6022156	6022156	<0.050	<0.050	NA	< 0.050	95%	70%	130%	98%	80%	120%	97%	70%	130%
Fluoride Leachate	6023492		0.24	0.24	NA	< 0.10	107%	90%	110%	109%	90%	110%	109%	70%	130%
Cyanide Leachate	6022156	6022156	<0.05	<0.05	NA	< 0.05	105%	70%	130%	96%	80%	120%	93%	70%	130%
(Nitrate + Nitrite) as N Leachate	6015768		<0.70	<0.70	NA	< 0.70	102%	80%	120%	110%	80%	120%	102%	70%	130%

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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Quality Assurance

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

AGAT WORK ORDER: 24Z176204

PROJECT: 100011.082 - Bulk Soil Submission

ATTENTION TO: Mohit Bhargav

SAMPLING SITE:6158 Rideau Valley Dr Ottawa ON

SAMPLED BY:CD

Trace Organics Analysis

RPT Date: Jul 31, 2024			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PHCs F1 - F4 (with PAHs) (Soil)															
Benzene	6022731		<0.02	<0.02	NA	< 0.02	91%	60%	140%	80%	60%	140%	86%	60%	140%
Toluene	6022731		<0.05	<0.05	NA	< 0.05	114%	60%	140%	109%	60%	140%	126%	60%	140%
Ethylbenzene	6022731		<0.05	<0.05	NA	< 0.05	98%	60%	140%	104%	60%	140%	124%	60%	140%
m & p-Xylene	6022731		<0.05	<0.05	NA	< 0.05	110%	60%	140%	115%	60%	140%	107%	60%	140%
o-Xylene	6022731		<0.05	<0.05	NA	< 0.05	115%	60%	140%	118%	60%	140%	128%	60%	140%
F1 (C6 to C10)	6022731		<5	<5	NA	< 5	102%	60%	140%	87%	60%	140%	109%	60%	140%
F2 (C10 to C16)	6022149	6022149	< 10	< 10	NA	< 10	110%	60%	140%	107%	60%	140%	122%	60%	140%
F3 (C16 to C34)	6022149	6022149	< 50	< 50	NA	< 50	109%	60%	140%	122%	60%	140%	126%	60%	140%
F4 (C34 to C50)	6022149	6022149	< 50	< 50	NA	< 50	74%	60%	140%	109%	60%	140%	88%	60%	140%
O. Reg. 153(511) - PAHs (Soil)															
Naphthalene	6022149	6022149	<0.05	<0.05	NA	< 0.05	76%	50%	140%	85%	50%	140%	83%	50%	140%
Acenaphthylene	6022149	6022149	<0.05	<0.05	NA	< 0.05	80%	50%	140%	85%	50%	140%	93%	50%	140%
Acenaphthene	6022149	6022149	<0.05	<0.05	NA	< 0.05	81%	50%	140%	78%	50%	140%	83%	50%	140%
Fluorene	6022149	6022149	<0.05	<0.05	NA	< 0.05	85%	50%	140%	75%	50%	140%	75%	50%	140%
Phenanthrene	6022149	6022149	<0.05	<0.05	NA	< 0.05	85%	50%	140%	75%	50%	140%	75%	50%	140%
Anthracene	6022149	6022149	<0.05	<0.05	NA	< 0.05	69%	50%	140%	78%	50%	140%	83%	50%	140%
Fluoranthene	6022149	6022149	<0.05	<0.05	NA	< 0.05	90%	50%	140%	75%	50%	140%	78%	50%	140%
Pyrene	6022149	6022149	<0.05	<0.05	NA	< 0.05	90%	50%	140%	75%	50%	140%	75%	50%	140%
Benzo(a)anthracene	6022149	6022149	<0.05	<0.05	NA	< 0.05	78%	50%	140%	80%	50%	140%	78%	50%	140%
Chrysene	6022149	6022149	<0.05	<0.05	NA	< 0.05	106%	50%	140%	70%	50%	140%	73%	50%	140%
Benzo(b)fluoranthene	6022149	6022149	<0.05	<0.05	NA	< 0.05	70%	50%	140%	83%	50%	140%	73%	50%	140%
Benzo(k)fluoranthene	6022149	6022149	<0.05	<0.05	NA	< 0.05	76%	50%	140%	75%	50%	140%	70%	50%	140%
Benzo(a)pyrene	6022149	6022149	<0.05	<0.05	NA	< 0.05	66%	50%	140%	83%	50%	140%	103%	50%	140%
Indeno(1,2,3-cd)pyrene	6022149	6022149	<0.05	<0.05	NA	< 0.05	88%	50%	140%	85%	50%	140%	98%	50%	140%
Dibenz(a,h)anthracene	6022149	6022149	<0.05	<0.05	NA	< 0.05	84%	50%	140%	83%	50%	140%	93%	50%	140%
Benzo(g,h,i)perylene	6022149	6022149	<0.05	<0.05	NA	< 0.05	103%	50%	140%	80%	50%	140%	85%	50%	140%
O. Reg. 153(511) - VOCs (Soil)															
Dichlorodifluoromethane	6023749		<0.05	<0.05	NA	< 0.05	78%	50%	140%	109%	50%	140%	119%	50%	140%
Vinyl Chloride	6023749		<0.02	<0.02	NA	< 0.02	116%	50%	140%	121%	50%	140%	103%	50%	140%
Bromomethane	6023749		<0.05	<0.05	NA	< 0.05	122%	50%	140%	96%	50%	140%	120%	50%	140%
Trichlorofluoromethane	6023749		<0.05	<0.05	NA	< 0.05	88%	50%	140%	104%	50%	140%	117%	50%	140%
Acetone	6023749		<0.50	<0.50	NA	< 0.50	69%	50%	140%	107%	50%	140%	109%	50%	140%
1,1-Dichloroethylene	6023749		<0.05	<0.05	NA	< 0.05	100%	50%	140%	106%	60%	130%	91%	50%	140%
Methylene Chloride	6023749		<0.05	<0.05	NA	< 0.05	87%	50%	140%	99%	60%	130%	110%	50%	140%
Trans- 1,2-Dichloroethylene	6023749		<0.05	<0.05	NA	< 0.05	105%	50%	140%	85%	60%	130%	105%	50%	140%
Methyl tert-butyl Ether	6023749		<0.05	<0.05	NA	< 0.05	94%	50%	140%	98%	60%	130%	95%	50%	140%
1,1-Dichloroethane	6023749		<0.02	<0.02	NA	< 0.02	91%	50%	140%	100%	60%	130%	95%	50%	140%
Methyl Ethyl Ketone	6023749		<0.50	<0.50	NA	< 0.50	96%	50%	140%	106%	50%	140%	117%	50%	140%

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Quality Assurance

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS
AGAT WORK ORDER: 24Z176204
PROJECT: 100011.082 - Bulk Soil Submission
ATTENTION TO: Mohit Bhargav
SAMPLING SITE:6158 Rideau Valley Dr Ottawa ON
SAMPLED BY:CD

Trace Organics Analysis (Continued)

RPT Date: Jul 31, 2024			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
Cis- 1,2-Dichloroethylene	6023749		<0.02	<0.02	NA	< 0.02	87%	50%	140%	87%	60%	130%	92%	50%	140%
Chloroform	6023749		<0.04	<0.04	NA	< 0.04	107%	50%	140%	80%	60%	130%	105%	50%	140%
1,2-Dichloroethane	6023749		<0.03	<0.03	NA	< 0.03	105%	50%	140%	106%	60%	130%	107%	50%	140%
1,1,1-Trichloroethane	6023749		<0.05	<0.05	NA	< 0.05	83%	50%	140%	89%	60%	130%	74%	50%	140%
Carbon Tetrachloride	6023749		<0.05	<0.05	NA	< 0.05	78%	50%	140%	85%	60%	130%	70%	50%	140%
Benzene	6023749		<0.02	<0.02	NA	< 0.02	90%	50%	140%	88%	60%	130%	111%	50%	140%
1,2-Dichloropropane	6023749		<0.03	<0.03	NA	< 0.03	93%	50%	140%	93%	60%	130%	108%	50%	140%
Trichloroethylene	6023749		<0.03	<0.03	NA	< 0.03	96%	50%	140%	103%	60%	130%	105%	50%	140%
Bromodichloromethane	6023749		<0.05	<0.05	NA	< 0.05	83%	50%	140%	92%	60%	130%	79%	50%	140%
Methyl Isobutyl Ketone	6023749		<0.50	<0.50	NA	< 0.50	102%	50%	140%	107%	50%	140%	102%	50%	140%
1,1,2-Trichloroethane	6023749		<0.04	<0.04	NA	< 0.04	93%	50%	140%	108%	60%	130%	106%	50%	140%
Toluene	6023749		<0.05	<0.05	NA	< 0.05	94%	50%	140%	104%	60%	130%	96%	50%	140%
Dibromochloromethane	6023749		<0.05	<0.05	NA	< 0.05	67%	50%	140%	78%	60%	130%	74%	50%	140%
Ethylene Dibromide	6023749		<0.04	<0.04	NA	< 0.04	83%	50%	140%	91%	60%	130%	88%	50%	140%
Tetrachloroethylene	6023749		<0.05	<0.05	NA	< 0.05	88%	50%	140%	78%	60%	130%	90%	50%	140%
1,1,1,2-Tetrachloroethane	6023749		<0.04	<0.04	NA	< 0.04	68%	50%	140%	76%	60%	130%	74%	50%	140%
Chlorobenzene	6023749		<0.05	<0.05	NA	< 0.05	88%	50%	140%	96%	60%	130%	93%	50%	140%
Ethylbenzene	6023749		<0.05	<0.05	NA	< 0.05	84%	50%	140%	97%	60%	130%	89%	50%	140%
m & p-Xylene	6023749		<0.05	<0.05	NA	< 0.05	85%	50%	140%	99%	60%	130%	91%	50%	140%
Bromoform	6023749		<0.05	<0.05	NA	< 0.05	73%	50%	140%	73%	60%	130%	75%	50%	140%
Styrene	6023749		<0.05	<0.05	NA	< 0.05	76%	50%	140%	88%	60%	130%	81%	50%	140%
1,1,2,2-Tetrachloroethane	6023749		<0.05	<0.05	NA	< 0.05	96%	50%	140%	103%	60%	130%	83%	50%	140%
o-Xylene	6023749		<0.05	<0.05	NA	< 0.05	87%	50%	140%	98%	60%	130%	93%	50%	140%
1,3-Dichlorobenzene	6023749		<0.05	<0.05	NA	< 0.05	75%	50%	140%	89%	60%	130%	86%	50%	140%
1,4-Dichlorobenzene	6023749		<0.05	<0.05	NA	< 0.05	75%	50%	140%	86%	60%	130%	85%	50%	140%
1,2-Dichlorobenzene	6023749		<0.05	<0.05	NA	< 0.05	76%	50%	140%	85%	60%	130%	81%	50%	140%
n-Hexane	6023749		<0.05	<0.05	NA	< 0.05	90%	50%	140%	76%	60%	130%	98%	50%	140%
O. Reg. 558 - VOCs															
Vinyl Chloride Leachate	6024642		<0.030	<0.030	NA	< 0.030	108%	50%	140%	79%	50%	140%	95%	50%	140%
1,1 Dichloroethene Leachate	6024642		<0.020	<0.020	NA	< 0.020	115%	50%	140%	112%	60%	130%	106%	50%	140%
Dichloromethane Leachate	6024642		<0.030	<0.030	NA	< 0.030	114%	50%	140%	116%	60%	130%	105%	50%	140%
Methyl Ethyl Ketone Leachate	6024642		<0.090	<0.090	NA	< 0.090	102%	50%	140%	110%	50%	140%	91%	50%	140%
Chloroform Leachate	6024642		<0.020	<0.020	NA	< 0.020	110%	50%	140%	96%	60%	130%	108%	50%	140%
1,2-Dichloroethane Leachate	6024642		<0.020	<0.020	NA	< 0.020	111%	50%	140%	98%	60%	130%	107%	50%	140%
Carbon Tetrachloride Leachate	6024642		<0.020	<0.020	NA	< 0.020	110%	50%	140%	88%	60%	130%	112%	50%	140%
Benzene Leachate	6024642		<0.020	<0.020	NA	< 0.020	108%	50%	140%	115%	60%	130%	96%	50%	140%
Trichloroethene Leachate	6024642		<0.020	<0.020	NA	< 0.020	114%	50%	140%	92%	60%	130%	104%	50%	140%
Tetrachloroethene Leachate	6024642		<0.050	<0.050	NA	< 0.050	111%	50%	140%	111%	60%	130%	113%	50%	140%
Chlorobenzene Leachate	6024642		<0.010	<0.010	NA	< 0.010	113%	50%	140%	111%	60%	130%	108%	50%	140%

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Quality Assurance

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

AGAT WORK ORDER: 24Z176204

PROJECT: 100011.082 - Bulk Soil Submission

ATTENTION TO: Mohit Bhargav

SAMPLING SITE:6158 Rideau Valley Dr Ottawa ON

SAMPLED BY:CD

Trace Organics Analysis (Continued)

RPT Date: Jul 31, 2024			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
1,2-Dichlorobenzene Leachate	6024642		<0.010	<0.010	NA	< 0.010	105%	50%	140%	102%	60%	130%	99%	50%	140%
1,4-Dichlorobenzene Leachate	6024642		<0.010	<0.010	NA	< 0.010	111%	50%	140%	106%	60%	130%	105%	50%	140%
O. Reg. 558 - Benzo(a)pyrene															
Benzo(a)pyrene Leachate	6022156	6022156	<0.001	<0.001	NA	< 0.001	85%	50%	140%	95%	50%	140%	98%	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).

Flash Point Analysis

Flash Point (Deg C) (Cgy)	4111	butanol	35	35	0.0%		100%	80%	120%

Comments: Duplicate NA: results are less than 5X the RDL and RDP will not be calculated.
The sample spikes and dups are not from the same sample ID.

Certified By:

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Method Summary

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS | **AGAT WORK ORDER: 24Z176204**

PROJECT: 100011.082 - Bulk Soil Submission | **ATTENTION TO: Mohit Bhargav**

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Electrical Conductivity (2:1)	INOR-93-6075	modified from MSA PART 3, CH 14 and SM 2510 B	PC TITRATE
Sodium Adsorption Ratio (2:1) (Calc.)	INOR-93-6007	modified from EPA 6010D & Analytical Protocol	ICP/OES
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
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-93-6000	EPA SW 846-1311; SM 4500F-C	ION SELECTIVE ELECTRODE
Cyanide Leachate	INOR-93-6052	EPA 1311 modified from MOE 3015 SM 4500 CN-I,G387	SEGMENTED FLOW ANALYSIS
(Nitrate + Nitrite) as N Leachate	INOR-93-6053	EPA SW 846-1311 & modified from SM 4500 - NO3- I	LACHAT FIA

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Method Summary

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Trace Organics Analysis			
Flash point (Pensky Martin Closed Cup)	TO 2210	ASTM D93	Pensky Martin Closed Cup
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
Benzo(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
2-and 1-methyl Naphthalene	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	modified from CCME Tier 1 Method	BALANCE
Benzene	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/MS
Toluene	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/MS
Ethylbenzene	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/MS
m & p-Xylene	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/MS
o-Xylene	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/MS
Xylenes (Total)	VOL-91-5009	modified from CCME Tier 1 Method	(P&T)GC/MS
F1 (C6 to 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

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
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 SW-846 5035 & 8260D	(P&T)GC/MS
Vinyl Chloride	VOL-91-5002	modified from EPA SW-846 5035 & 8260D	(P&T)GC/MS
Bromomethane	VOL-91-5002	modified from EPA SW-846 5035 & 8260D	(P&T)GC/MS
Trichlorofluoromethane	VOL-91-5002	modified from EPA SW-846 5035 & 8260D	(P&T)GC/MS
Acetone	VOL-91-5002	modified from EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,1-Dichloroethylene	VOL-91-5002	modified from EPA SW-846 5035 & 8260D	(P&T)GC/MS
Methylene Chloride	VOL-91-5002	modified from EPA SW-846 5035 & 8260D	(P&T)GC/MS
Trans- 1,2-Dichloroethylene	VOL-91-5002	modified from EPA SW-846 5035 & 8260D	(P&T)GC/MS
Methyl tert-butyl Ether	VOL-91-5002	modified from EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,1-Dichloroethane	VOL-91-5002	modified from EPA SW-846 5035 & 8260D	(P&T)GC/MS
Methyl Ethyl Ketone	VOL-91-5002	modified from EPA SW-846 5035 & 8260D	(P&T)GC/MS
Cis- 1,2-Dichloroethylene	VOL-91-5002	modified from EPA SW-846 5035 & 8260D	(P&T)GC/MS
Chloroform	VOL-91-5002	modified from EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,2-Dichloroethane	VOL-91-5002	modified from EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,1,1-Trichloroethane	VOL-91-5002	modified from EPA SW-846 5035 & 8260D	(P&T)GC/MS
Carbon Tetrachloride	VOL-91-5002	modified from EPA SW-846 5035 & 8260D	(P&T)GC/MS
Benzene	VOL-91-5002	modified from EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,2-Dichloropropane	VOL-91-5002	modified from EPA SW-846 5035 & 8260D	(P&T)GC/MS
Trichloroethylene	VOL-91-5002	modified from EPA SW-846 5035 & 8260D	(P&T)GC/MS
Bromodichloromethane	VOL-91-5002	modified from EPA SW-846 5035 & 8260D	(P&T)GC/MS
Methyl Isobutyl Ketone	VOL-91-5002	modified from EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,1,2-Trichloroethane	VOL-91-5002	modified from EPA SW-846 5035 & 8260D	(P&T)GC/MS
Toluene	VOL-91-5002	modified from EPA SW-846 5035 & 8260D	(P&T)GC/MS
Dibromochloromethane	VOL-91-5002	modified from EPA SW-846 5035 & 8260D	(P&T)GC/MS
Ethylene Dibromide	VOL-91-5002	modified from EPA SW-846 5035 & 8260D	(P&T)GC/MS

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Tetrachloroethylene	VOL-91-5002	modified from EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,1,1,2-Tetrachloroethane	VOL-91-5002	modified from EPA SW-846 5035 & 8260D	(P&T)GC/MS
Chlorobenzene	VOL-91-5002	modified from EPA SW-846 5035 & 8260D	(P&T)GC/MS
Ethylbenzene	VOL-91-5002	modified from EPA SW-846 5035 & 8260D	(P&T)GC/MS
m & p-Xylene	VOL-91-5002	modified from EPA SW-846 5035 & 8260D	(P&T)GC/MS
Bromoform	VOL-91-5002	modified from EPA SW-846 5035 & 8260D	(P&T)GC/MS
Styrene	VOL-91-5002	modified from EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,1,2,2-Tetrachloroethane	VOL-91-5002	modified from EPA SW-846 5035 & 8260D	(P&T)GC/MS
o-Xylene	VOL-91-5002	modified from EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,3-Dichlorobenzene	VOL-91-5002	modified from EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,4-Dichlorobenzene	VOL-91-5002	modified from EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,2-Dichlorobenzene	VOL-91-5002	modified from EPA SW-846 5035 & 8260D	(P&T)GC/MS
Xylenes (Total)	VOL-91-5002	modified from EPA SW-846 5035 & 8260D	(P&T)GC/MS
1,3-Dichloropropene (Cis + Trans)	VOL-91-5002	modified from EPA SW-846 5035 & 8260D	(P&T)GC/MS
n-Hexane	VOL-91-5002	modified from EPA SW-846 5035 & 8260D	(P&T)GC/MS
Toluene-d8	VOL-91-5002	modified from EPA SW-846 5035 & 8260D	(P&T)GC/MS
4-Bromofluorobenzene	VOL-91-5002	modified from EPA SW-846 5035 & 8260D	(P&T)GC/MS
Benzo(a)pyrene Leachate	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
Naphthalene-d8	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
Vinyl Chloride Leachate	VOL-91-5001	EPA 1311, modified from EPA 5030C & EPA 8260D	(P&T)GC/MS
1,1 Dichloroethene Leachate	VOL-91-5001	EPA 1311, modified from EPA 5030C & EPA 8260D	(P&T)GC/MS
Dichloromethane Leachate	VOL-91-5001	EPA 1311, modified from EPA 5030C & EPA 8260D	(P&T)GC/MS
Methyl Ethyl Ketone Leachate	VOL-91-5001	EPA 1311, modified from EPA 5030C & EPA 8260D	(P&T)GC/MS
Chloroform Leachate	VOL-91-5001	EPA 1311, modified from EPA 5030C & EPA 8260D	(P&T)GC/MS
1,2-Dichloroethane Leachate	VOL-91-5001	EPA 1311, modified from EPA 5030C & EPA 8260D	(P&T)GC/MS
Carbon Tetrachloride Leachate	VOL-91-5001	EPA 1311, modified from EPA 5030C & EPA 8260D	(P&T)GC/MS

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Method Summary

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

AGAT WORK ORDER: 24Z176204

PROJECT: 100011.082 - Bulk Soil Submission

ATTENTION TO: Mohit Bhargav

SAMPLING SITE:6158 Rideau Valley Dr Ottawa ON

SAMPLED BY:CD

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Benzene Leachate	VOL-91-5001	EPA 1311, modified from EPA 5030C & EPA 8260D	(P&T)GC/MS
Trichloroethene Leachate	VOL-91-5001	EPA 1311, modified from EPA 5030C & EPA 8260D	(P&T)GC/MS
Tetrachloroethene Leachate	VOL-91-5001	EPA 1311, modified from EPA 5030C & EPA 8260D	(P&T)GC/MS
Chlorobenzene Leachate	VOL-91-5001	EPA 1311, modified from EPA 5030C & EPA 8260D	(P&T)GC/MS
1,2-Dichlorobenzene Leachate	VOL-91-5001	EPA 1311, modified from EPA 5030C & EPA 8260D	(P&T)GC/MS
1,4-Dichlorobenzene Leachate	VOL-91-5001	EPA 1311, modified from EPA 5030C & 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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webearth.agatlabs.com

Laboratory Use Only

Work Order #: 24T176204

Cooler Quantity: One - ice packs

Arrival Temperatures: 22.9 | 22.7 | 22.8 ; 7.3 | 7.6 | 7.9

Custody Seal Intact: ☐ Yes ☐ No ☒ N/A

Notes: B, I

Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans)

Report Information:

Company: GEMTEC Consulting Engineers and Scientists Limited
Contact: Mohit Bhargav
Address: 32 Steacie Drive
Kanata, ON
K2K 2A9
Phone: Fax:
Reports to be sent to:
1. Email: mohit.bhargav@gemtec.ca
2. Email: Chris.dionne@gemtec.ca

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

☐ Regulation 406
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

Project Information:

Project: 100011.082 - Bulk Soil Submission
Site Location: 6158 Rideau Valley Dr Ottawa, ON
Sampled By: CD
AGAT Quote #: PO:
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

Bill To Same: Yes ☑ No ☐

Company:
Contact:
Address:
Email:

Sample Matrix Legend

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	VOC	PAHs	PCBs	PCBs: Aroclors ☐	O. Reg 558: Landfill Disposal Characterization TCLP: TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	O. Reg 406: Regulation 406 SPLP Rainwater Leach SPLP: ☐ Metals ☐ VOCs ☐ SVOCs	O. Reg 406: Regulation 406 Characterization Package pH, ICPMS Metals, BTEX, F1-F4	Corrosivity: ☐ Moisture ☐ Sulphide	EC/SAR						Potentially Hazardous or High Concentration (Y/N)
1. BH24-01 SA5	July 18/24	AM PM	3	S														☑						
2. BH24-02 SA3	July 18/24	AM PM	3	S														☑						
3. BH24-03 SA5	July 18/24	AM PM	3	S					☑		☑													
4. BH24-04 SA5	July 18/24	AM PM	3	S					☑		☑													
5. BH24-05 SA7	July 18/24	AM PM	3	S						☑	☑													
6. BH24-06 SA7	July 18/24	AM PM	3	S						☑	☑													
7. BH24-01 SA105	July 18/24	AM PM	3	S														☑						
8. BH24-05 SA107	July 18/24	AM PM	3	S						☑	☑													
9.		AM PM																						
10.		AM PM																						
11.		AM PM																						

Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time	
Mohit Bhargav	19 June 24	5pm	C. Griffith	07/22/24	08h05	
CJ to Dune [illegible]	07/22/24	15h00	[illegible]	July 23	8:45 AM	Page 1 of 2
						Nº:

Pink Copy - Client | Yellow Copy - AGAT | White Copy - AGAT

Document ID: DIV-78-1511.022

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Date Issued: Mar 30, 2023

AGAT Laboratories

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Laboratory Use Only

Work Order #: 24Z176204

Cooler Quantity: One - ice packs

Arrival Temperatures: 22.9 | 22.7 | 22.8 / 7.3 | 7.6 | 7.9

Custody Seal Intact: ☐ Yes ☐ No ☑ N/A

Notes: B / I

Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans)

Report Information:

Company: GEMTEC Consulting Engineers and Scientists Limited
Contact: Mohit Bhargav
Address: 32 Staecie Drive
Kanata, ON
K2K 2A9
Phone: Fax:
Reports to be sent to:
1. Email: mohit.bhargav@gemtec.ca
2. Email: Chris.dionne@gemtec.ca

Regulatory Requirements:

(Please check all applicable boxes)

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

☐ Regulation 406
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

Project Information:

Project: 100011.082 - TCLP Submission
Site Location: 6158 Rideau Valley Dr Ottawa, ON
Sampled By: CD
AGAT Quote #: PO:
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

Bill To Same: Yes ☑ No ☐

Company:
Contact:
Address:
Email:

Sample Matrix Legend

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	VOC	PAHs	PCBs	PCBs: Aroclors ☐	O. Reg 558: Landfill Disposal Characterization TCLP: TCLP: ☑ M&I ☑ VOCs ☐ ABNs ☑ B(a)P ☐ PCBs	O. Reg 406: Regulation 406 SPLP Rainwater Leach SPLP: ☐ Metals ☐ VOCs ☐ SVOCs	O. Reg 406: Regulation 406 Characterization Package pH, ICPMS Metals, BTEX, F1-F4	Corrosivity: ☐ Moisture ☐ Sulphide	Flashpoint						Potentially Hazardous or High Concentration (Y/N)
1. [illegible] TCLP	July 18/24	AM PM	3	S										X				X						
2.		AM PM																						
3.		AM PM																						
4.		AM PM																						
5.		AM PM																						
6.		AM PM																						
7.		AM PM																						
8.		AM PM																						
9.		AM PM																						
10.		AM PM																						
11.		AM PM																						

Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time	
Mohit Bhargav	July 19, 24	PM	C. Griffith	07/22/24	08h05	
C. to Dicco	07/22/24	15h00	T. Ffan	July 23	8:45 Am	Page 2 of 2
						Nº:

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CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS
32 STEACIE DRIVE
OTTAWA, ON K2K 2A9
(613) 836-1422
ATTENTION TO: Mohit Bhargav
PROJECT: 100011.082
AGAT WORK ORDER: 24Z181357
TRACE ORGANICS REVIEWED BY: Neli Popnikolova, Senior Chemist
WATER ANALYSIS REVIEWED BY: Amanjot Bhela, Lab Operation Manager
DATE REPORTED: Aug 12, 2024
PAGES (INCLUDING COVER): 14
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.*
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- *All reportable information is available on request from AGAT Laboratories, in accordance with ISO/IEC 17025:2017, ISO/IEC 17025:2005 (Quebec), DR-12-PALA and/or NELAP Standards.*
- *This document is signed by an authorized signatory who meets the requirements of the MELCCFP, CALA, CCN and NELAP.*
- *For environmental samples in the Province of Quebec: The analysis is performed on and results apply to samples as received. A temperature above 6°C upon receipt, as indicated in the Sample Reception Notification (SRN), could indicate the integrity of the samples has been compromised if the delay between sampling and submission to the laboratory could not be minimized.*

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Certificate of Analysis

AGAT WORK ORDER: 24Z181357

PROJECT: 100011.082

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Mohit Bhargav

SAMPLING SITE:RVD

SAMPLED BY:Chris Dionne

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

DATE RECEIVED: 2024-08-02 **DATE REPORTED: 2024-08-10**

		SAMPLE DESCRIPTION:		MW-3	MW-4	MW-104	MW-5
		SAMPLE TYPE:		Water	Water	Water	Water
		DATE SAMPLED:		2024-08-02	2024-08-02	2024-08-02	2024-08-02
Parameter	Unit	G / S	RDL	6050322	6050323	6050324	6050325
Naphthalene	µg/L	7	0.20	<0.20	<0.20	<0.20	<0.20
Acenaphthylene	µg/L	1	0.20	<0.20	<0.20	<0.20	<0.20
Acenaphthene	µg/L	4.1	0.20	<0.20	<0.20	<0.20	<0.20
Fluorene	µg/L	120	0.20	<0.20	<0.20	<0.20	<0.20
Phenanthrene	µg/L	0.1	0.10	<0.10	<0.10	<0.10	<0.10
Anthracene	µg/L	0.1	0.10	<0.10	<0.10	<0.10	<0.10
Fluoranthene	µg/L	0.4	0.20	<0.20	<0.20	<0.20	<0.20
Pyrene	µg/L	0.2	0.20	<0.20	<0.20	<0.20	<0.20
Benzo(a)anthracene	µg/L	0.2	0.20	<0.20	<0.20	<0.20	<0.20
Chrysene	µg/L	0.1	0.10	<0.10	<0.10	<0.10	<0.10
Benzo(b)fluoranthene	µg/L	0.1	0.10	<0.10	<0.10	<0.10	<0.10
Benzo(k)fluoranthene	µg/L	0.1	0.10	<0.10	<0.10	<0.10	<0.10
Benzo(a)pyrene	µg/L	0.01	0.01	<0.01	<0.01	<0.01	<0.01
Indeno(1,2,3-cd)pyrene	µg/L	0.2	0.20	<0.20	<0.20	<0.20	<0.20
Dibenz(a,h)anthracene	µg/L	0.2	0.20	<0.20	<0.20	<0.20	<0.20
Benzo(g,h,i)perylene	µg/L	0.2	0.20	<0.20	<0.20	<0.20	<0.20
2-and 1-methyl Napthalene	µg/L	2	0.20	<0.20	<0.20	<0.20	<0.20
Sediment				1	1	3	3
Surrogate	**Unit**	**Acceptable Limits**					
Naphthalene-d8	%	50-140		82	78	81	87
Acridine-d9	%	50-140		85	68	74	55
Terphenyl-d14	%	50-140		73	73	73	72

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.

6050322-6050325 Sediment parameter is comment only based on visual inspection of the sample prior to extraction and is not an accredited test.
Legend: 1 = no sediment present; 2 = sediment present; 3 = sediment present in trace amount
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.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: N Popnikolof

AGAT Laboratories

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FAX (905)712-5122
http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 24Z181357

PROJECT: 100011.082

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Mohit Bhargav

SAMPLING SITE:RVD

SAMPLED BY:Chris Dionne

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

DATE RECEIVED: 2024-08-02 **DATE REPORTED: 2024-08-10**

		SAMPLE DESCRIPTION:		MW-3	MW-4	MW-104	MW-5
		SAMPLE TYPE:		Water	Water	Water	Water
		DATE SAMPLED:		2024-08-02	2024-08-02	2024-08-02	2024-08-02
Parameter	Unit	G / S	RDL	6050322	6050323	6050324	6050325
F1 (C6 to C10)	µg/L	420	25	<25	<25	<25	<25
F1 (C6 to C10) minus BTEX	µg/L	420	25	<25	<25	<25	<25
F2 (C10 to C16)	µg/L	150	100	<100	<100	<100	<100
F2 (C10 to C16) minus Naphthalene	µg/L		100	<100	<100	<100	<100
F3 (C16 to C34)	µg/L	500	100	<100	<100	<100	<100
F3 (C16 to C34) minus PAHs	µg/L		100	<100	<100	<100	<100
F4 (C34 to C50)	µg/L	500	100	<100	<100	<100	<100
Gravimetric Heavy Hydrocarbons	µg/L		500	NA	NA	NA	NA
Sediment				1	1	1	1
Surrogate	**Unit**	**Acceptable Limits**					
Toluene-d8	%	50-140		103	102	105	101
Terphenyl	% Recovery	60-140		72	75	68	81

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

6050322-6050325 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.
Legend: 1 = no sediment present; 2 = sediment present; 3 = sediment present in trace amounts

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: NPopowich

AGAT Laboratories

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CANADA L4Z 1Y2
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FAX (905)712-5122
http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 24Z181357

PROJECT: 100011.082

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Mohit Bhargav

SAMPLING SITE:RVD

SAMPLED BY:Chris Dionne

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

DATE RECEIVED: 2024-08-02 **DATE REPORTED: 2024-08-08**

		SAMPLE DESCRIPTION:		Trip Blank	Field Blank
		SAMPLE TYPE:		Water	Water
		DATE SAMPLED:		2024-08-02	2024-08-02
Parameter	Unit	G / S	RDL	6050326	6050327
Benzene	µg/L	0.5	0.20	<0.20	<0.20
Toluene	µg/L	0.8	0.20	<0.20	<0.20
Ethylbenzene	µg/L	0.5	0.10	<0.10	<0.10
m & p-Xylene	µg/L		0.20	<0.20	<0.20
o-Xylene	µg/L		0.10	<0.10	<0.10
Xylenes (Total)	µg/L	72	0.20	<0.20	<0.20
F1 (C6 to C10)	µg/L	420	25	<25	<25
F1 (C6 to C10) minus BTEX	µg/L	420	25	<25	<25
Surrogate	**Unit**	**Acceptable Limits**			
Toluene-d8	% Recovery	60-140		102	104

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.

6050326-6050327 The C6-C10 fraction is calculated using Toluene response factor.
Total C6-C10 results are corrected for BTEX contributions.
Xylenes total is a calculated parameter. The calculated value is the sum of m&p-Xylene and o-Xylene.
C6–C10 (F1 minus BTEX) is a calculated parameter. The calculated value is F1 minus BTEX.
The calculated parameters are non-accredited. The parameters that are components of the calculation are accredited.
This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.
nC6 and nC10 response factors are within 30% of Toluene response factor.
Extraction and holding times were met for this sample.
NA = Not Applicable

Analysis performed at AGAT Toronto (unless marked by *)

Certified By: N Popnikolof

AGAT Laboratories

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MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 24Z181357

PROJECT: 100011.082

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Mohit Bhargav

SAMPLING SITE:RVD

SAMPLED BY:Chris Dionne

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

DATE RECEIVED: 2024-08-02

DATE REPORTED: 2024-08-08

SAMPLE DESCRIPTION:				MW-3	MW-4	MW-104	MW-5	Trip Blank	Field Blank
SAMPLE TYPE:				Water	Water	Water	Water	Water	Water
DATE SAMPLED:				2024-08-02	2024-08-02	2024-08-02	2024-08-02	2024-08-02	2024-08-02
Parameter	Unit	G / S	RDL	6050322	6050323	6050324	6050325	6050326	6050327
Dichlorodifluoromethane	µg/L	590	0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Vinyl Chloride	µg/L	0.5	0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17
Bromomethane	µg/L	0.89	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Trichlorofluoromethane	µg/L	150	0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Acetone	µg/L	2700	1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethylene	µg/L	0.5	0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Methylene Chloride	µg/L	5	0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
trans- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Methyl tert-butyl ether	µg/L	15	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1-Dichloroethane	µg/L	0.5	0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Methyl Ethyl Ketone	µg/L	400	1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis- 1,2-Dichloroethylene	µg/L	1.6	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chloroform	µg/L	2	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichloroethane	µg/L	0.5	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1,1-Trichloroethane	µg/L	0.5	0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Carbon Tetrachloride	µg/L	0.2	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Benzene	µg/L	0.5	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichloropropane	µg/L	0.5	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Trichloroethylene	µg/L	0.5	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Bromodichloromethane	µg/L	2	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Methyl Isobutyl Ketone	µg/L	640	1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	µg/L	0.5	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L	0.8	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dibromochloromethane	µg/L	2	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Ethylene Dibromide	µg/L	0.2	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Tetrachloroethylene	µg/L	0.5	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1,1,2-Tetrachloroethane	µg/L	1.1	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Chlorobenzene	µg/L	0.5	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Ethylbenzene	µg/L	0.5	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
m & p-Xylene	µg/L		0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

Certified By: N Popnikolof

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Certificate of Analysis

AGAT WORK ORDER: 24Z181357

PROJECT: 100011.082

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Mohit Bhargav

SAMPLING SITE:RVD

SAMPLED BY:Chris Dionne

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

DATE RECEIVED: 2024-08-02 **DATE REPORTED: 2024-08-08**

		SAMPLE DESCRIPTION:		MW-3	MW-4	MW-104	MW-5	Trip Blank	Field Blank
		SAMPLE TYPE:		Water	Water	Water	Water	Water	Water
		DATE SAMPLED:		2024-08-02	2024-08-02	2024-08-02	2024-08-02	2024-08-02	2024-08-02
Parameter	**Unit**	**G / S**	**RDL**	**6050322**	**6050323**	**6050324**	**6050325**	**6050326**	**6050327**
Bromoform	µg/L	5	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Styrene	µg/L	0.5	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,1,2,2-Tetrachloroethane	µg/L	0.5	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
o-Xylene	µg/L		0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,3-Dichlorobenzene	µg/L	0.5	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	0.5	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,2-Dichlorobenzene	µg/L	0.5	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,3-Dichloropropene	µg/L	0.5	0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Xylenes (Total)	µg/L	72	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
n-Hexane	µg/L	5	0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Surrogate	**Unit**	**Acceptable Limits**							
Toluene-d8	% Recovery	50-140		103	102	105	101	102	104
4-Bromofluorobenzene	% Recovery	50-140		98	97	101	99	101	100

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.

6050322-6050327 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 *)

Certified By: N Popnikolof

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Certificate of Analysis

AGAT WORK ORDER: 24Z181357

PROJECT: 100011.082

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Mohit Bhargav

SAMPLING SITE:RVD

SAMPLED BY:Chris Dionne

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

DATE RECEIVED: 2024-08-02

DATE REPORTED: 2024-08-07

		SAMPLE DESCRIPTION:		MW-1
		SAMPLE TYPE:		Water
		DATE SAMPLED:		2024-08-02
Parameter	Unit	G / S	RDL	6050321
Dissolved Sodium	µg/L	490000	50	22000
Chloride	µg/L	790000	100	31100

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.

Analysis performed at AGAT Toronto (unless marked by *)

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Quality Assurance

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

AGAT WORK ORDER: 24Z181357

PROJECT: 100011.082

ATTENTION TO: Mohit Bhargav

SAMPLING SITE:RVD

SAMPLED BY:Chris Dionne

Trace Organics Analysis

RPT Date:			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - PHCs F1 - F4 (with PAHs and VOC) (Water)															
F1 (C6 to C10)	6050327	6050327	<25	<25	NA	< 25	93%	60%	140%	80%	60%	140%	84%	60%	140%
F2 (C10 to C16)	6050277		< 100	< 100	NA	< 100	118%	60%	140%	77%	60%	140%	90%	60%	140%
F3 (C16 to C34)	6050277		< 100	< 100	NA	< 100	95%	60%	140%	74%	60%	140%	85%	60%	140%
F4 (C34 to C50)	6050277		< 100	< 100	NA	< 100	67%	60%	140%	65%	60%	140%	88%	60%	140%
O. Reg. 153(511) - VOCs (with PHC) (Water)															
Dichlorodifluoromethane	6050327	6050327	<0.40	<0.40	NA	< 0.40	62%	50%	140%	66%	50%	140%	107%	50%	140%
Vinyl Chloride	6050327	6050327	<0.17	<0.17	NA	< 0.17	113%	50%	140%	109%	50%	140%	112%	50%	140%
Bromomethane	6050327	6050327	<0.20	<0.20	NA	< 0.20	74%	50%	140%	74%	50%	140%	80%	50%	140%
Trichlorofluoromethane	6050327	6050327	<0.40	<0.40	NA	< 0.40	81%	50%	140%	93%	50%	140%	80%	50%	140%
Acetone	6050327	6050327	<1.0	<1.0	NA	< 1.0	94%	50%	140%	97%	50%	140%	86%	50%	140%
1,1-Dichloroethylene	6050327	6050327	<0.30	<0.30	NA	< 0.30	106%	50%	140%	86%	60%	130%	97%	50%	140%
Methylene Chloride	6050327	6050327	<0.30	<0.30	NA	< 0.30	93%	50%	140%	92%	60%	130%	92%	50%	140%
trans- 1,2-Dichloroethylene	6050327	6050327	<0.20	<0.20	NA	< 0.20	103%	50%	140%	89%	60%	130%	96%	50%	140%
Methyl tert-butyl ether	6050327	6050327	<0.20	<0.20	NA	< 0.20	87%	50%	140%	79%	60%	130%	70%	50%	140%
1,1-Dichloroethane	6050327	6050327	<0.30	<0.30	NA	< 0.30	102%	50%	140%	80%	60%	130%	85%	50%	140%
Methyl Ethyl Ketone	6050327	6050327	<1.0	<1.0	NA	< 1.0	98%	50%	140%	86%	50%	140%	84%	50%	140%
cis- 1,2-Dichloroethylene	6050327	6050327	<0.20	<0.20	NA	< 0.20	96%	50%	140%	77%	60%	130%	86%	50%	140%
Chloroform	6050327	6050327	<0.20	<0.20	NA	< 0.20	102%	50%	140%	82%	60%	130%	55%	50%	140%
1,2-Dichloroethane	6050327	6050327	<0.20	<0.20	NA	< 0.20	85%	50%	140%	74%	60%	130%	105%	50%	140%
1,1,1-Trichloroethane	6050327	6050327	<0.30	<0.30	NA	< 0.30	99%	50%	140%	81%	60%	130%	72%	50%	140%
Carbon Tetrachloride	6050327	6050327	<0.20	<0.20	NA	< 0.20	77%	50%	140%	62%	60%	130%	56%	50%	140%
Benzene	6050327	6050327	<0.20	<0.20	NA	< 0.20	102%	50%	140%	81%	60%	130%	77%	50%	140%
1,2-Dichloropropane	6050327	6050327	<0.20	<0.20	NA	< 0.20	96%	50%	140%	77%	60%	130%	79%	50%	140%
Trichloroethylene	6050327	6050327	<0.20	<0.20	NA	< 0.20	106%	50%	140%	84%	60%	130%	87%	50%	140%
Bromodichloromethane	6050327	6050327	<0.20	<0.20	NA	< 0.20	93%	50%	140%	75%	60%	130%	69%	50%	140%
Methyl Isobutyl Ketone	6050327	6050327	<1.0	<1.0	NA	< 1.0	109%	50%	140%	108%	50%	140%	104%	50%	140%
1,1,2-Trichloroethane	6050327	6050327	<0.20	<0.20	NA	< 0.20	98%	50%	140%	83%	60%	130%	86%	50%	140%
Toluene	6050327	6050327	<0.20	<0.20	NA	< 0.20	104%	50%	140%	87%	60%	130%	63%	50%	140%
Dibromochloromethane	6050327	6050327	<0.10	<0.10	NA	< 0.10	75%	50%	140%	63%	60%	130%	63%	50%	140%
Ethylene Dibromide	6050327	6050327	<0.10	<0.10	NA	< 0.10	95%	50%	140%	83%	60%	130%	79%	50%	140%
Tetrachloroethylene	6050327	6050327	<0.20	<0.20	NA	< 0.20	103%	50%	140%	86%	60%	130%	88%	50%	140%
1,1,1,2-Tetrachloroethane	6050327	6050327	<0.10	<0.10	NA	< 0.10	75%	50%	140%	77%	60%	130%	99%	50%	140%
Chlorobenzene	6050327	6050327	<0.10	<0.10	NA	< 0.10	102%	50%	140%	85%	60%	130%	87%	50%	140%
Ethylbenzene	6050327	6050327	<0.10	<0.10	NA	< 0.10	102%	50%	140%	84%	60%	130%	72%	50%	140%
m & p-Xylene	6050327	6050327	<0.20	<0.20	NA	< 0.20	106%	50%	140%	87%	60%	130%	59%	50%	140%
Bromoform	6050327	6050327	<0.10	<0.10	NA	< 0.10	67%	50%	140%	74%	60%	130%	78%	50%	140%
Styrene	6050327	6050327	<0.10	<0.10	NA	< 0.10	98%	50%	140%	79%	60%	130%	81%	50%	140%
1,1,2,2-Tetrachloroethane	6050327	6050327	<0.10	<0.10	NA	< 0.10	93%	50%	140%	83%	60%	130%	72%	50%	140%
o-Xylene	6050327	6050327	<0.10	<0.10	NA	< 0.10	104%	50%	140%	85%	60%	130%	59%	50%	140%

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Quality Assurance

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

AGAT WORK ORDER: 24Z181357

PROJECT: 100011.082

ATTENTION TO: Mohit Bhargav

SAMPLING SITE:RVD

SAMPLED BY:Chris Dionne

Trace Organics Analysis (Continued)

RPT Date:			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
1,3-Dichlorobenzene	6050327	6050327	<0.10	<0.10	NA	< 0.10	104%	50%	140%	84%	60%	130%	92%	50%	140%
1,4-Dichlorobenzene	6050327	6050327	<0.10	<0.10	NA	< 0.10	104%	50%	140%	85%	60%	130%	94%	50%	140%
1,2-Dichlorobenzene	6050327	6050327	<0.10	<0.10	NA	< 0.10	100%	50%	140%	84%	60%	130%	90%	50%	140%
n-Hexane	6050327	6050327	<0.20	<0.20	NA	< 0.20	80%	50%	140%	75%	60%	130%	75%	50%	140%
O. Reg. 153(511) - PAHs (Water)															
Naphthalene	6050324	6050324	<0.20	<0.20	NA	< 0.20	105%	50%	140%	97%	50%	140%	106%	50%	140%
Acenaphthylene	6050324	6050324	<0.20	<0.20	NA	< 0.20	96%	50%	140%	88%	50%	140%	94%	50%	140%
Acenaphthene	6050324	6050324	<0.20	<0.20	NA	< 0.20	89%	50%	140%	113%	50%	140%	94%	50%	140%
Fluorene	6050324	6050324	<0.20	<0.20	NA	< 0.20	90%	50%	140%	112%	50%	140%	92%	50%	140%
Phenanthrene	6050324	6050324	<0.10	<0.10	NA	< 0.10	88%	50%	140%	111%	50%	140%	86%	50%	140%
Anthracene	6050324	6050324	<0.10	<0.10	NA	< 0.10	77%	50%	140%	118%	50%	140%	96%	50%	140%
Fluoranthene	6050324	6050324	<0.20	<0.20	NA	< 0.20	91%	50%	140%	115%	50%	140%	86%	50%	140%
Pyrene	6050324	6050324	<0.20	<0.20	NA	< 0.20	88%	50%	140%	112%	50%	140%	86%	50%	140%
Benzo(a)anthracene	6050324	6050324	<0.20	<0.20	NA	< 0.20	113%	50%	140%	98%	50%	140%	103%	50%	140%
Chrysene	6050324	6050324	<0.10	<0.10	NA	< 0.10	120%	50%	140%	95%	50%	140%	85%	50%	140%
Benzo(b)fluoranthene	6050324	6050324	<0.10	<0.10	NA	< 0.10	102%	50%	140%	76%	50%	140%	94%	50%	140%
Benzo(k)fluoranthene	6050324	6050324	<0.10	<0.10	NA	< 0.10	133%	50%	140%	109%	50%	140%	111%	50%	140%
Benzo(a)pyrene	6050324	6050324	<0.01	<0.01	NA	< 0.01	94%	50%	140%	81%	50%	140%	72%	50%	140%
Indeno(1,2,3-cd)pyrene	6050324	6050324	<0.20	<0.20	NA	< 0.20	70%	50%	140%	94%	50%	140%	91%	50%	140%
Dibenz(a,h)anthracene	6050324	6050324	<0.20	<0.20	NA	< 0.20	81%	50%	140%	70%	50%	140%	75%	50%	140%
Benzo(g,h,i)perylene	6050324	6050324	<0.20	<0.20	NA	< 0.20	86%	50%	140%	79%	50%	140%	87%	50%	140%

Comments: When the average of the sample and duplicate results is less than 5x the RDL, the Relative Percent Difference (RPD) will be indicated as Not Applicable (NA).

Certified By: N Popnikolof

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Quality Assurance

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

AGAT WORK ORDER: 24Z181357

PROJECT: 100011.082

ATTENTION TO: Mohit Bhargav

SAMPLING SITE:RVD

SAMPLED BY:Chris Dionne

Water Analysis

RPT Date:			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - ORPs (Water)															
Dissolved Sodium	6055636		12200	12000	1.7%	< 50	101%	70%	130%	106%	80%	120%	104%	70%	130%
Chloride	6048432		102000	103000	1.0%	< 100	95%	70%	130%	100%	80%	120%	103%	70%	130%

Certified By:

Amanjot Bhela

CHARTERED CHEMIST AMANJOT BHELA — ASSOCIATION OF THE CHEMICAL PROFESSION OF ONTARIO

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Method Summary

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

AGAT WORK ORDER: 24Z181357

PROJECT: 100011.082

ATTENTION TO: Mohit Bhargav

SAMPLING SITE:RVD

SAMPLED BY:Chris Dionne

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 Napthalene	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			N/A
F1 (C6 to 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- 5001	modified from EPA 5030B & EPA 8260D	(P&T)GC/MS
F2 (C10 to C16)	VOL-91-5010	modified from MOE PHC-E3421	GC/FID
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
Benzene	VOL-91-5010	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS

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TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Method Summary

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

AGAT WORK ORDER: 24Z181357

PROJECT: 100011.082

ATTENTION TO: Mohit Bhargav

SAMPLING SITE:RVD

SAMPLED BY:Chris Dionne

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Toluene	VOL-91-5010	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
Ethylbenzene	VOL-91-5010	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
m & p-Xylene	VOL-91-5010	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
o-Xylene	VOL-91-5010	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
Xylenes (Total)	VOL-91-5010	modified from EPA SW-846 5030C & 8260D	(P&T)GC/MS
F1 (C6 to C10)	VOL-91-5010	modified from MOE E3421	(P&T)GC/FID
F1 (C6 to C10) minus BTEX	VOL-91-5010	modified from MOE E3421	(P&T)GC/FID
Toluene-d8	VOL-91-5010	modified from MOE PHC-E3421	(P&T)GC/MS
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

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Method Summary

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

AGAT WORK ORDER: 24Z181357

PROJECT: 100011.082

ATTENTION TO: Mohit Bhargav

SAMPLING SITE:RVD

SAMPLED BY:Chris Dionne

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
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
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
Water Analysis			
Dissolved Sodium	MET-93-6103	modified from EPA 200.8 and EPA 3005A	ICP/MS
Chloride	INOR-93-6004	modified from SM 4110 B	ION CHROMATOGRAPH

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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 #: 24781357

Cooler Quantity: One-ice packs
Arrival Temperatures: 13.6 | 13.0 | 13.8 | 11.3 | 12.0 | 14.5
Custody Seal Intact: ☐ Yes ☐ No ☐ N/A
Notes: bagged ice

Report Information:
Company: GEMTEC Consulting Engineers and Scientists Limited
Contact: Mohit Bhargav
Address: 32 Staecie Drive, Ottawa, ON
Phone: ~~613-857-4936~~ 506-897-0427 Fax:
Reports to be sent to:
1. Email: mohit.bhargav@gemtec.ca
2. Email: chris.dionne@gemtec.ca; nicole.sarty@gemtec.ca

Regulatory Requirements:
(Please check all applicable boxes)
☑ Regulation 153/04 — Table (Indicate One): ☐ Ind/Com ☐ Res/Park ☐ Agriculture; Soil Texture (Check One): ☐ Coarse ☐ Fine
☐ Regulation 406 — Table (Indicate One)
☐ Regulation 558
☐ CCME
☐ Sewer Use ☐ Sanitary ☐ Storm — Region
☐ Prov. Water Quality Objectives (PWQO)
☐ Other — Indicate One

Turnaround Time (TAT) Required:
Regular TAT ☒ 5 to 7 Business Days
Rush TAT (Rush Surcharges Apply)
☐ 3 Business Days ☐ 2 Business Days ☐ Next Business Day
OR Date Required (Rush Surcharges May Apply):
Please provide prior notification for rush TAT
*TAT is exclusive of weekends and statutory holidays
For 'Same Day' analysis, please contact your AGAT CPM

Project Information:
Project: 100011.082
Site Location: RVD
Sampled By: Chris Dionne
AGAT Quote #: PO:
Please note: If quotation number is not provided, client will be billed full price for analysis.

Is this submission for a **Record of Site Condition?** ☐ Yes ☑ No

Report Guideline on Certificate of Analysis ☑ Yes ☐ No

Invoice Information:
Bill To Same: Yes ☑ No ☐
Company:
Contact:
Address:
Email:

Sample Matrix Legend
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	VOC	PAHs	PCBs	PCBs: Arochlors ☐	O. Reg 558: Landfill Disposal Characterization TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	O. Reg 406: Regulation 406 SPLP Rainwater Leach SPLP: ☐ Metals ☐ VOCs ☐ SVOCs	O. Reg 406: Regulation 406 Characterization Package pH, ICPMS Metals, BTEX, F1-F4	Corrosivity: ☐ Moisture ☐ Sulphide	Sodium	Chloride	PHCs F1/VOCs				Potentially Hazardous or High Concentration (Y/N)
1. MW-1	Aug 2/24	AM	1	GW														X	X					
2. MW-3	↓	↓	7	GW					X		X									X				
3. MW-4			7	GW					X	X	X													
4. MW-104			7	GW					X	X	X													
5. MW-5			7	GW					X	X	X													
6. Trip Blank			3	—																X				
7. Field Blank	↓	↓	3	—																X				
8.																								
9.																								
10.																								
11.																								

Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time
Chris Dionne	Aug 2/24	1345		08/02/24	13h50
C. to Driver	08/02/24	15h00		08/06/24	8:30 AM

Page 1 of 1
N°:

Pink Copy - Client | Yellow Copy - AGAT | White Copy - AGAT

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MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS
32 STEACIE DRIVE
OTTAWA, ON K2K 2A9
(613) 836-1422
ATTENTION TO: Mohit Bhargav
PROJECT: 100011.082
AGAT WORK ORDER: 24Z186946
SOIL ANALYSIS REVIEWED BY: Nivine Basily, Inorganic Team Lead
DATE REPORTED: Aug 20, 2024
PAGES (INCLUDING COVER): 5
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 is available on request from AGAT Laboratories, in accordance with ISO/IEC 17025:2017, ISO/IEC 17025:2005 (Quebec), DR-12-PALA and/or NELAP Standards.*
- *This document is signed by an authorized signatory who meets the requirements of the MELCCFP, CALA, CCN and NELAP.*
- *For environmental samples in the Province of Quebec: The analysis is performed on and results apply to samples as received. A temperature above 6°C upon receipt, as indicated in the Sample Reception Notification (SRN), could indicate the integrity of the samples has been compromised if the delay between sampling and submission to the laboratory could not be minimized.*

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http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 24Z186946

PROJECT: 100011.082

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Mohit Bhargav

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2024-08-19

DATE REPORTED: 2024-08-20

		SAMPLE DESCRIPTION:		BH24-01 SA2	BH24-04 SA4
		SAMPLE TYPE:		Soil	Soil
		DATE SAMPLED:		2024-07-18	2024-07-18
Parameter	Unit	G / S	RDL	6086910	6086911
pH, 2:1 CaCl2 Extraction	pH Units		NA	6.63	6.05

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

6086910-6086911 pH was determined on the 0.01M CaCl2 extract obtained from 2:1 leaching procedure (2 parts extraction fluid:1 part wet soil). pH analysis performed outside recommended holding time.

Analysis performed at AGAT Toronto (unless marked by *)

Certified By:

AGAT Laboratories

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CANADA L4Z 1Y2
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Quality Assurance

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

AGAT WORK ORDER: 24Z186946

PROJECT: 100011.082

ATTENTION TO: Mohit Bhargav

SAMPLING SITE:

SAMPLED BY:

Soil Analysis

RPT Date: Aug 20, 2024			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
O. Reg. 153(511) - ORPs (Soil)															
pH, 2:1 CaCl2 Extraction	6086910	6086910	6.63	6.88	3.7%	NA	118%	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.

Certified By:

AGAT Laboratories

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MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Method Summary

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

AGAT WORK ORDER: 24Z186946

PROJECT: 100011.082

ATTENTION TO: Mohit Bhargav

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
pH, 2:1 CaCl2 Extraction	INOR-93-6075	modified from EPA 9045D, MCKEAGUE 3.11 E3137	PC TITRATE

AGAT Laboratories

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RUSH!

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

Laboratory Use Only

Work Order #: 24Z186946

Cooler Quantity: n/a - no ice packs
Arrival Temperatures: 22.0 | 21.9 | 21.9
Depot Temperatures: 3.7 | 3.8 | 3.9
Custody Seal Intact: ☐Yes ☐No ☐N/A
Notes: BI

Chain of Custody Record

If this is a Drinking Water sample, please use Drinking Water Chain of Custody Form (potable water consumed by humans)

Report Information:

Company: GEMTEC
Contact: Mohit Bhargav
Address: 32 Steacie Drive, Ottawa, Ontario K2K 2A9
Phone: 5068970427 Fax:
Reports to be sent to:
1. Email: mohit.bhargav@gemtec.ca
2. Email:

Regulatory Requirements:

(Please check all applicable boxes)

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

☐ Regulation 406 — Table (Indicate One): ☐Ind/Com ☐Res/Park ☐Agriculture
☐ 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 (RSC)**? ☐ 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): ASAP

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

For 'Same Day' analysis, please contact your AGAT CSR

Project Information:

Project: 100011.082
Site Location: MF
Sampled By: CD
AGAT Quote #: PO:
Please note: If quotation number is not provided, client will be billed full price for analysis.

Legal Sample ☐

Invoice Information:

Bill To Same: Yes ☐ No ☐
Company:
Contact:
Address:
Email:

Sample Matrix Legend

GW	Ground Water	SD	Sediment
O	Oil	SW	Surface Water
P	Paint	R	Rock/Shale
S	Soil		

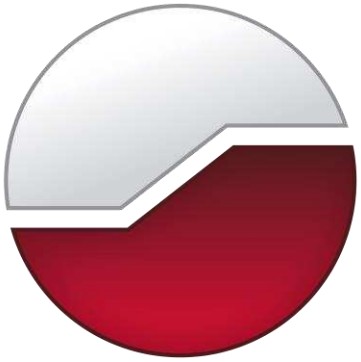
Sample Identification	Date Sampled	Time Sampled	# of Containers	Sample Matrix	Comments/ Special Instructions	Field Filtered - Metals, Hg, CrVI, DOC (Y/N)	O. Reg 153: Metals & Inorganics	O. Reg 153: Metals - ☐CrVI, ☐Hg, ☐HWSB	O. Reg 153: BTEX, F1-F4 PHCs	VOC	PAHs	PCBs: Aroclors ☐	O. Reg 406: Regulation 406 Characterization Package pH, Metals, BTEX, F1-F4	O. Reg 406: EC, SAR	O. Reg 406: Regulation 406 SPLP Rainwater Leach mSPLP: ☐Metals ☐VOCs ☐SVOCs ☐DOC	O. Reg 558: Landfill Disposal Characterization TCLP: TCLP: ☐M&I ☐VOCs ☐ABNs ☐B(a)P ☐PCBs	Corrosivity: ☐ Moisture ☐ Sulphide	pH						Potentially Hazardous or High Concentration (Y/N)
1. BH24-01 SA2	July 18, 24	AM	1	Soil	1x250 ml													☑						
2. BH24-04 SA4	↓	↓	↓	↓	↓													☑						
3.		AM/PM																						
4.		AM/PM																						
5.		AM/PM																						
6.		AM/PM																						
7.		AM/PM																						
8.		AM/PM																						
9.		AM/PM																						
10.		AM/PM																						
11.		AM/PM																						

Samples Relinquished By (Print Name and Sign)	Date	Time	Samples Received By (Print Name and Sign)	Date	Time
Mohit Bhargav	19 Aug 2024		C. Guthrie	08/19/24	12h40
C. Guthrie to Depot	08/19/24	15h00	[illegible]	Aug 20	8:45am

Page 1 of 1

N°:

experience • knowledge • integrity



civil	civil
geotechnical	géotechnique
environmental	environnement
structural	structures
field services	surveillance de chantier
materials testing	service de laboratoire des matériaux

expérience • connaissance • intégrité