GEMTEC
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Phase Two Environmental Site Assessment
3955 Kelly Farm Drive
Ottawa, Ontario

GEMTEC Project: 100441.001

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Submitted to:

CEPEO
2445 St. Laurent Boulevard
Ottawa, Ontario
K1G 6C3

Phase Two Environmental Site Assessment
3955 Kelly Farm Drive
Ottawa, Ontario

November 27, 2024
GEMTEC Project: 100441.001

experience • knowledge • integrity

GEMTEC Consulting Engineers and Scientists Limited
32 Steacie Drive
Ottawa, ON, Canada
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November 27, 2024 File: 100441.001

CEPEO
2445 St. Laurent Boulevard
Ottawa, Ontario
K1G 6C3

Attention: Mr. Omar Ben Hadda – Gestionnaire de projects de construction

Re: Phase Two Environmental Site Assessment
3955 Kelly Farm 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 September 23, 2024. This report was prepared by Melissa Tai, B.Sc., with senior review by Daniel Elliot, P.Geo, 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.

Melissa Tai, B.Sc.
Environmental Specialist

Daniel Elliot, P.Geo., QP_{ESA}
Senior Environmental Geoscientist

MT/DE/MK

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EXECUTIVE SUMMARY

GEMTEC Consulting Engineers and Scientists Limited (GEMTEC) was retained by Conseil des Écoles Publiques de l'Est de l'Ontario (CEPEP) to carry out a Phase Two Environmental Site Assessment (ESA) for the property located at 3955 Kelly Farm Drive in Ottawa, Ontario (herein referred to as "Site" or "Phase Two Property"). It is understood that this Phase Two ESA is required to support a site plan application with the City of Ottawa (The City).

The Phase Two Property consists of an undeveloped parcel of land with an approximate area of 2.07 hectares (5.12 acres). The Site is bounded to the northwest by Barrett Farm Drive, to the northeast by Aconitum Way, to the southeast by Lavatera Street, and to the southwest by Kelly Farm Drive. The proposed future use is institutional development with a school.

GEMTEC previously completed the following reports:

- "Phase I Environmental Site Assessment, 3955 Kelly Farm Drive, Ottawa, Ontario" Project No. 100441.001 – V02 dated March 10, 2021 (2021 Phase I ESA).
- "Phase II Environmental Site Assessment, 3955 Kelly Farm Drive, Ottawa, Ontario" Project No. 100441.001 dated March 31, 2021 (2021 Phase II ESA).
- "Phase One Environmental Site Assessment Update, 3955 Kelly Farm Drive, Ottawa, Ontario" Project No. 100441.001 dated October 9, 2024 (2024 Phase One ESA Update).

Based on the findings of the 2021 Phase I ESA, six potentially contaminating activities (PCAs) were identified resulting in four areas of potential environmental concern (APECs) at the Site, as summarized in the table below:

APEC #	Type of PCA	Description	Material of Concern	Contaminants of Potential Concern (COPC)
1	PCA #30: Importation of Fill Material of Unknown Quality	Fill material of unknown origin was identified on the Site during the aerial photograph review and the Site interview	Soil	PAHs Metals & ORPs PHCs F1-F4 BTEX
2	PCA # 40: Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Applications.	Through a review of aerial photographs and during the Site interview, there is potential for pesticides having been historically used on the Site	Soil Groundwater	OCPs

APEC #	Type of PCA	Description	Material of Concern	Contaminants of Potential Concern (COPC)
3	PCA # 48. Salt Manufacturing, Processing and Bulk Storage	Through a search with the Historical Land Use Inventory (HLUI), Leitrim works site & garage was identified within the study area and accepted 2,000 tonnes of salt delivery	Soil Groundwater	ORPs (including EC, SAR Chlorine Sodium)
4	PCA # 28. Gasoline and Associated Products Storage in Fixed Tanks	Through a search with the HLUI, Leitrim works site & garage was identified within the study area with 3 pumps including gas and diesel	Soil Groundwater	Metals & ORPs PHCs F1-F4 VOCs

Notes:

PAHs – polyaromatic hydrocarbons
Metals – metal parameters as per O.Reg. 153/04 including hydride-forming metals
ORPs – other regulated parameters including electrical conductivity (EC), sodium adsorption ratio (SAR), pH, hot water-soluble boron (HWS-B), cyanide (CN-), hexavalent chromium (Cr IV), and mercury (Hg)
PHCs F1-F4 – petroleum hydrocarbon fractions
BTEX – benzene, toluene, ethylbenzene, xylene
OCPs – organochloride pesticides
VOCs – volatile organic compounds

As a result of the identified APECs in association with the Site, a Phase II ESA was recommended and carried out in March 2021. The shallow soil at one sample location (BH21-8) was characterized by elevated electrical conductivity (EC). It was concluded that delineation of impacted fill material be completed in the vicinity of BH21-8 prior to property development. The investigation methodology and results of the 2021 Phase II ESA are included throughout this report and formed the basis of the scope of work (i.e., delineation test holes in the vicinity of BH21-8) for this Phase Two ESA.

The 2024 Phase One ESA Update did not identify any new PCAs or APECs associated with the Site, with no additional intrusive investigations were recommended beyond the completion of this Phase Two ESA delineation program.

Between March 5, 2021 and March 15, 2021, eight boreholes (BH21-1 through BH21-8) were advanced using a Geoprobe drill rig to depths ranging between 1.06 to 4.57 m below ground surface (bgs). Monitoring wells were installed in three of the boreholes (BH/MW21-1, BH/MW21-4, and BH/MW21-6). On October 11, 2024, 11 additional test locations were advanced via hand augering to depths ranging between 0.5 to 1.5 mbgs in the vicinity of BH21-8 to assist with assessing the extent of fill material with elevated EC.

The subsurface soil conditions encountered in the boreholes was generally fill material consisting of brown silty sand or sandy silt with some gravel, clay and silt which was underlain by native deposits of brown to grey silty clay.

Collectively, a total of 27 soil samples (23 bulk samples plus four duplicates) were analyzed for one or more of the following contaminants of potential concern (COPCs): metals, hydride-forming metals, other regulated parameters (ORPs), petroleum hydrocarbon (PHC) fractions F1-F4, benzene, toluene, ethylbenzene, and xylene (BTEX), volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), organochlorine pesticides (OCPs), EC, and/or sodium adsorption ratio (SAR).

A total of four groundwater samples (three bulk samples plus one duplicate) were analyzed for the following COPCs: metals, VOCs, PHCs, and OCPs. One trip blank was submitted 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. Based on the results of this comparison, elevated EC was detected in the original borehole sample BH21-8 SA-3 and in some of the additional auger test locations in the vicinity of BH21-8. The EC results of the original and additional samples were averaged. The result of the averaging indicates that EC continues to be moderately elevated with respect to the Table 2 RPI SCS of 700 µS/cm in the vicinity of BH21-8.

The EC in the soil samples collected from the Site are considered to be related to the application of de-icing salt on the adjacent roadways within the study area in the winter. Considering the other soil and groundwater analytical results across the Site did not have impacts of EC, it is not anticipated that the EC in the vicinity of BH21-8 would create impacts to the overall condition of the Site, and it is reasonable to assume salt application will continue with the anticipated future use of the property as a school. Further, the areas of impacted EC in the soil are limited to depths of fill material, which is likely to be removed or covered by asphalt during the proposed Site development. Accordingly, the singular area of EC impact that was identified is not anticipated to pose any risk to human health, nor a significant environmental risk to the property. Based on this and Section 49.1 of Ontario Regulation (O.Reg.) 153/04, it is the Qualified Person’s opinion that the average value of EC within the area of BH21-8 should be deemed to not exceed.

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

Based on the results of the soil samples and groundwater samples submitted as part of this Phase Two ESA, no further work is recommended at this time.

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1.0 INTRODUCTION

GEMTEC Consulting Engineers and Scientists Limited (GEMTEC) was retained by Conseil des Écoles Publiques de l'Est de l'Ontario (CEPEP) to carry out a Phase Two Environmental Site Assessment (ESA) for the property located at 3955 Kelly Farm Drive in Ottawa, Ontario (herein referred to as "Site" or "Phase Two Property"). It is understood that this Phase Two ESA is required to support a site plan application with the City of Ottawa (The City).

GEMTEC previously completed the following reports:

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- "Phase One Environmental Site Assessment Update, 3955 Kelly Farm Drive, Ottawa, Ontario" Project No. 100441.001 dated October 9, 2024 (2024 Phase One ESA Update).

The findings of the 2021 Phase I ESA and the 2024 Phase One ESA Update are provided under a separate cover. The investigation methodology and results of the 2021 Phase II ESA are included throughout this report and formed the basis of the scope of work for this Phase Two ESA. This Phase Two ESA was completed in accordance with the requirements for Phase Two ESAs as defined in Part VII and Schedule E of Ontario Regulation (O.Reg.) 153/04.

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

1.1 Site Description

The Phase Two Property consists of an undeveloped parcel of land with an approximate area of 2.07 hectares (5.12 acres) located at 3955 Kelly Farm Drive, Ottawa, Ontario. The site is bounded to the northwest by Barrett Farm Drive, to the northeast by Aconitum Way, to the southeast by Lavatera Street, and to the southwest by Kelly Farm Drive. The location of the Site is shown on Figure A.1, Appendix A.

1.2 Property Ownership and Legal Description

The property is currently owned by Conseil des Écoles Publiques de l'Est de l'Ontario. The contact person for the Site is Mr. Omar Ben Hadda (CEPEO).

The Parcel Register Abstract PIN is 04328-4888 (LT) and legal the description for the Site is as follows: BLOCK 196, PLAN 4M1640; SUBJECT TO AN EASEMENT IN GROSS AS IN OC2168913; SUBJECT TO AN EASEMENT IN GROSS OVER PART 40 4R32389 AS IN OC2168915; CITY OF OTTAWA.

1.3 Current and Proposed Future Uses

The Site is currently undeveloped and appears to be used partially as a laydown area for residential construction currently being completed in the area. The proposed future use is institutional development with a school.

1.4 Applicable Site Condition 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 selection of applicable SCS for comparison to analytical data was based on a review of various Site characteristics which will need to be considered for the current property use and also to provide a preliminary indication of on-Site soil and groundwater quality to inform the future planned development.

The relevant Site characteristics were considered in the selection of the applicable regulatory criteria are as follows:

- Land Use: The Site is currently undeveloped and was historically used for agricultural purposes. The proposed future land use is institutional.
- Soil Texture: Based on visual observations during the field program and in the absence of a grain size analysis completed on samples – as a conservative approach, coarse textured soils have been considered for this 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 results obtained from the intrusive investigation, the Site is not considered a shallow soil property. Furthermore, the property is not within 30 metres of a water body.
- Groundwater Use: Potable water in the area of the Site is supplied by the City of Ottawa, however through review of the Ontario Well Records, domestic and commercial water wells were identified within the study area – accordingly as a conservative approach, groundwater use for the Site and vicinity is considered potable.
- Environmentally Sensitive Site: Environmental sensitivity is considered in the selection of appropriate provincial standards for comparison. Section 41 of O.Reg.153/04 states that a property is to be considered environmentally sensitive if any of the following are applicable:

- (1) the property is,
  - (i) within an area of natural significance;
  - (ii) includes or is adjacent to an area of natural significance or part of such an area; or
  - (iii) includes land that is within 30 metres of an area of natural significance or part of such an area;
- (2) the soil at the property has a pH value as follows:
  - (i) for surface soil, less than 5 or greater than 9;
  - (ii) for sub surface soil, less than 5 or greater than 11; or
- (3) a qualified person is of the opinion that, given the characteristics of the property and the certifications the qualified person would be required to make in a record of site condition in relation to the property as specified in Schedule A, it is appropriate to apply this section to the property.

The Site is not considered to be environmentally sensitive. pH values for soil samples submitted were within the acceptable range and the Site is not within, adjacent or include, in part, an Area of Natural of Scientific Interest (ANSI).

Based on the review of Site characteristics and intended future development of the property to institutional use, the following provincial standards were considered to be applicable to the analytical results obtained during the environmental 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 Residential / Parkland / Institutional (RPI) 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.

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 2021 Phase I ESA and confirmed in the 2024 Phase One ESA Update.

2.1 Physical Setting

Topographic mapping available through the Ontario Basic Mapping (OBM, 2012) and the Ministry of Natural Resources and Forestry (MNR, 2014), were reviewed to determine topographic features in the vicinity of the Phase Two Property and study area. The elevation of the Site is approximately 95 metres above sea level (masl) and surrounding topography generally slopes gradually downwards towards the south.

Groundwater flow often reflects topographic features and typically flows toward nearby lakes, rivers and wetland areas. Based on the topography of the area, it is expected that the local shallow groundwater flow will trend north or southwesterly, towards one of two large provincially significant wetlands located approximately 1 km north and south of the Site. Regional groundwater flow is expected to be towards the Rideau River located approximately 6.5 km west of the Site.

Surficial soil and bedrock geology maps of the Ottawa area indicate that the overburden in the vicinity of the Site generally consists of coarse-textured glaciomarine deposits; sand, gravel, minor silt and clay foreshore and basinal deposits with approximate thicknesses ranging between 0 and 5 m. The bedrock is mapped as dolostone and sandstone of the Beekmantown Group.

2.2 Past Investigations

As previously mentioned, GEMTEC conducted a 2021 Phase I ESA to assess the likelihood of soil and/or groundwater contamination resulting from historical or present activities at the Site and surrounding area. GEMTEC undertook a Phase One ESA update in 2024 to determine if any material changes in the Site condition had occurred since the 2021 investigation. The Phase One ESA 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, six potentially contaminating activities (PCAs) were identified resulting in four APECs at the Site.

Figures A.1 and A.2, Appendix A illustrate the locations of the PCAs and APECs, respectively. The APECs identified in the 2021 Phase I ESA are summarized in Table 2.1 below.

Table 2.1: APECs as per 2021 Phase I ESA

APEC #	Type of PCA	Description	Material of Concern	Contaminants of Potential Concern (COPC)
1	PCA #30: Importation of Fill Material of Unknown Quality	Fill material of unknown origin was identified on the Site during the aerial photograph review and the Site interview	Soil	Metals & ORPs PHCs F1-F4 BTEX PAHs
2	PCA # 40: Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Applications.	Through a review of aerial photographs and during the Site interview, there is potential for pesticides having been historically used on the Site	Soil Groundwater	OCPs
3	PCA # 48. Salt Manufacturing, Processing and Bulk Storage	Through a search with the Historical Land Use Inventory (HLUI), Leitrim works site & garage was identified within the study area and accepted 2,000 tonnes of salt delivery	Soil Groundwater	ORPs (including EC, SAR Chlorine Sodium)
4	PCA # 28. Gasoline and Associated Products Storage in Fixed Tanks	Through a search with the HLUI, Leitrim works site & garage was identified within the study area with 3 pumps including gas and diesel	Soil Groundwater	Metals & ORPs PHCs F1-F4 VOCs

Notes:

PAHs – polyaromatic hydrocarbons
Metals – metal parameters as per O.Reg. 153/04 including hydride-forming metals
ORPs – other regulated parameters including electrical conductivity (EC), sodium adsorption ratio (SAR), pH, hot water-soluble boron (HWS-B), cyanide (CN-), hexavalent chromium (Cr IV), and mercury (Hg)
PHCs F1-F4 – petroleum hydrocarbon fractions
BTEX – benzene, toluene, ethylbenzene, xylene
OCPs – organochloride pesticides
VOCs – volatile organic compounds

As a result of the identified APECs in association with the Site, a Phase II ESA was recommended and carried out in March 2021. The shallow soil at one sample location (BH21-8) was found to have elevated electrical conductivity (EC). It was concluded that delineation of impacted fill material should be completed in the vicinity of BH21-8 prior to property development. The investigation methodology and results of the 2021 Phase II ESA are included throughout this report and formed the basis of the scope of work (i.e., delineation boreholes in the vicinity of BH21-8) for this Phase Two ESA.

The 2024 Phase One ESA Update did not identify any new PCAs or APECs associated with the Site, and no additional intrusive investigations were recommended beyond the completion of this Phase Two ESA delineation program.

3.0 SCOPE OF THE INVESTIGATION

3.1 Overview of the Phase Two ESA Investigation

The Phase Two ESA investigation activities were completed between March 5, 2021, and March 17, 2021, with additional delineation field work on October 11, 2024. The Phase Two ESA included the following tasks:

- **Health and Safety Plan:** Preparation of a Health and Safety Plan 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 4.0;
- **Borehole Advancement and Monitoring Well Installation:** The Phase Two ESA investigation activities carried out on March 5, 2021, and March 17, 2021, included the drilling of eight boreholes and completion of three of the boreholes as monitoring wells; the locations of which are provided in Figure A.3, Appendix A;
- **Auger Advancement:** To assist with assessing the extent of fill material with elevated EC, 11 shallow test holes were advanced via augering on October 11, 2024. The test locations are indicated on Figure A.3, Appendix A;
- **Soil Sampling:** Soil samples were collected on March 5, 2021, and March 15, 2021, from the boreholes and October 11, 2024, from the auger test holes. A total of 27 soil samples (23 bulk samples and four duplicates) were submitted for chemical analysis of one or more of the following COPCs:
    - Metals, hydride-forming metals, and other regulated parameters (ORPs);
    - Petroleum hydrocarbon (PHC) fractions (F1-F4);
    - Benzene, toluene, ethylbenzene, and xylene (BTEX);
    - Volatile organic compounds (VOCs);
    - Polycyclic aromatic hydrocarbons (PAHs);
    - Organochlorine pesticides (OCPs); and
    - EC and sodium adsorption ratio (SAR).
    - Details of COPCs with respect to the sampling locations is available in Section 5.6.
- **Groundwater Monitoring and Sampling:** A total of four groundwater samples (three samples and one duplicate) were collected on March 17, 2021, from the monitoring wells.

The groundwater samples were submitted for chemical analysis of one or more of the following COPCs:
    - Metals, hydride-forming metals, ORPs;
    - PHCs F1-F4;
    - VOCs;
    - PAHs; and
    - OCPs
    - Trip Blank for PHC F1 and VOCs.
    - Details of COPCs with respect to the sampling locations is available in Section 5.7.
- **Surveying:** An elevation survey for boreholes and monitoring wells was completed using a high precision Trimble R10 global positioning system (GPS).
- **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. The data from the 2021 Phase II ESA and this Phase Two ESA investigation, both completed by GEMTEC at the Site, were incorporated into a single Phase Two ESA report following the Phase Two ESA report format required by O. Reg. 153/04.

There were no impediments or access limitations that, in the opinion of the QP, would affect the conclusions of this Phase Two ESA report.

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 2021 Phase I ESA and confirmed in the 2024 Phase One ESA Update.

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 2021 Phase I ESA and the 2024 Phase One ESA Update.

- The Site is bounded to the northwest by Barrett Farm drive, to the northeast by Aconitum Way, to the southeast by Lavatera Street and to the southwest by Kelly Farm Drive;
- The Site is currently undeveloped with some fill of unknown origin and construction materials on-Site, and has previously been used for agricultural purposes;

- The surrounding properties are primarily agricultural with some residential development beginning between 2017 and 2019;
- The surrounding properties to the south are fully serviced by the municipality and utility providers – although some wells were identified within the study area;
- The MECP Well Records search identified 11 wells within the study area. The average depth to the water table based on the static water levels available from the MECP Well Records was 2.74 metres below ground surface;
- No provincially significant wetlands (PSWs) or ANSIs were identified on the Site, or within the study area;
- The Site has a relatively flat topography and is at an elevation of approximately 95 masl. Surrounding topography generally slopes gradually downwards towards a wetland approximately 700 m south of the Site;
- Surficial soil and bedrock geology maps of the Ottawa area indicate that the overburden in the vicinity of the Site generally consists of coarse-textured glaciomarine deposits; sand, gravel, minor silt and clay foreshore and basinal deposits with thicknesses ranging between 0 and 5 m. The bedrock is mapped as dolostone and sandstone of the Beekmantown Group; and
- Based on the records review, the interview and the Site reconnaissance completed as part of the 2021 Phase I ESA and 2024 Phase One ESA Update, GEMTEC identified six PCAs for the study area. Four of the PCAs were determined to create APECs on the Site. These APECs include:
    - **APEC 1 – Fill material of unknown origin was identified during the aerial photograph review and Site interview.** COPCs in the soil include metals, ORPs, PHCs F1-F4, BTEX, PAHs.
    - **APEC 2 – Potential for pesticides to have been used historically.** COPCs in the soil and groundwater include OCPs.
    - **APEC 3 – Leitrim works site & garage in the study area that accepted 2,000 tonnes of salt delivery.** COPCs in the soil and groundwater include ORPs such as EC, SAR, chlorine (Cl), and sodium (Na).
    - **APEC 4 – Leitrim works site & garage in the study area having three pumps including gas and diesel.** The COPCs in the soil and groundwater include metals, ORPs, PHCS F1-F4, and VOCs.

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 March 5, 2021, and March 17, 2021, and additional field work took place on October 11, 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

Between March 5, 2021, and March 15, 2021, 8 boreholes (BH21-1 through BH21-8) were advanced to depths ranging between 1.06 to 4.57 m below ground surface (bgs). Borehole locations are provided in Figure A.3, Appendix A. A description of quality assurance/quality control measures taken to minimize the potential for cross-contamination between sampling locations is provided in Section 4.12.

The boreholes were advanced using a Geoprobe drill rig 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 (Y/N)	APEC Investigated	COPCs - Soil	COPCs – GW
BH/MW21-1	Y	APEC 1,2,3,4	Metals, PHCs, VOCs, OCPs	Metals, PHCs, VOCs, PAHs, OCPs
BH21-2	N	APEC 1	Metals, PHCs, BTEX, PAHs	--
BH21-3	N	APEC 1	Metals, PHCs, BTEX, PAHs	--

Borehole ID	MW Installation Required (Y/N)	APEC Investigated	COPCs - Soil	COPCs – GW
BH/MW21-4	Y	APEC 1,2,3,4	Metals, PHCs, VOCs, PAHs, OCPs	Metals, PHCs, VOCs, PAHs; OCPs
BH21-5	N	APEC 1	Metals, PHCs, BTEX, PAHs	--
BH/MW21-6	Y	APEC 1,2,3,4	Metals, PHCs, VOCs, PAHs, OCPs	Metals, PHCs, VOCs, PAHs, OCPs
BH21-7	N	APEC 1	Metals, PHCs, BTEX, PAHs	--
BH21-8	N	APEC 1	Metals, PHCs, BTEX, VOCs, PAHs, OCPs	--

Notes:

APEC 1 – Presence of fill material based on aerial photographs and Site interview
APEC 2 – Potential for historical pesticide use
APEC 3 – Works site & garage in study area with bulk storage of salt
APEC 4 – Works site & garage in study area with gasoline and diesel pumps
PHCs F1-F4 – Petroleum hydrocarbons F1 to F4
PAHs – Polycyclic aromatic hydrocarbons
VOCs – Volatile organic compounds
OCPs – Organochlorine pesticides
Metals – Metals and hydride-forming metals, and ORPs including EC and SAR

4.3 Auger Sampling

On October 11, 2024, 11 test locations were advanced using a 2-inch Dutch hand auger to depths ranging between 1.0 to 1.5 mbgs for the collection of soil samples for EC and SAR analysis. The samples were collected to assist with the vertical and lateral delineation of elevated EC in shallow fill material found at BH21-8. The test locations are shown on Figure A.3, Appendix A.

4.4 Soil: Sampling

Soil samples were collected from the boreholes via dual tubes and from the auger locations via auger flights; 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. An RKI Eagle 2 gas detector 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. A summary of the soil samples submitted for analysis is provided in Tables C1 and C2, Appendix A.

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

4.5 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	Accuracy	Calibration Standard
RKI Eagle 2	Combustible gas	0-50,000 ppm	±5%	Hexane (HEX) (1650 ppm)
	Total organic vapour	0-2,000 ppm	±5%	Isobutylene (IBL) (100 ppm)

HEX readings varied between 0 ppm and 10 ppm; whereas IBL readings varied between 0 ppm and 4 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.

4.6 Groundwater: Monitoring Well Installation

Three groundwater monitoring wells (BH/MW21-1, BH/MW21-24, and BH/MW21-6) were installed by Strata using threaded 38-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 the riser pipes were sealed with a J-plug. All three monitoring wells were completed with a monument/stick-up protective casing.

4.7 Groundwater: Field Measurements for Water Quality Parameters

The field measurements for the groundwater monitoring wells were taken on March 17, 2021. The measurements included the water level and the depth to the bottom of the monitoring well, both of which were from the top of the riser pipe using an electronic water level tape.

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

4.8 Groundwater: Sampling

Monitoring well development and sampling was conducted on March 17, 2021, and 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 sampling was conducted 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.

4.9 Sediment: Sampling

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

4.10 Analytical Testing

All samples were stored and transported in laboratory supplied coolers with ice. Soil and groundwater samples were submitted to Paracel Laboratories Ltd. (Paracel) for analysis of the samples taken in 2021 and to AGAT Laboratories Ltd. (AGAT) for analysis of the samples taken in 2024. Paracel and AGAT are 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 laboratories meet 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 Sections 5.6 and 5.7.

4.11 Residue Management Procedures

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 of 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.

4.12 Elevation 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 GPS. 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.3, Appendix A.

4.13 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 trip blank was 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, augering, 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.

Fill material was encountered from ground surface at all boreholes. Fill material is variable in nature and can be described at this Site as brown silty sand/sandy silt with some gravel, clay and silt. Organic material in fill was noted at BH21-6. Red brick debris was observed within the fill material at BH21-8. The fill material has a thickness ranging between 0.1 and 0.9 mbgs. BH21-8 was terminated within the fill material due to refusal.

Native deposits of brown to grey silty clay were encountered below the fill materials in all boreholes at depths ranging from about 0.1 and 0.9 mbgs, with the exception of BH21-8. Native brown to grey silty clay was observed from ground surface to 0.9 mbgs at BH21-1. Boreholes BH21-1 to BH21-7 were terminated within the grey/brown silty clay deposits at depths ranging between 1.2 and 4.6 mbgs.

5.2 Groundwater: Elevations and Flow Direction

Groundwater depths were measured directly from the top of pipe in each monitoring well location on March 17, 2021, using an electronic oil-water interface probe. Depth measurements were converted to groundwater elevations by subtracting the measured depth from the elevation of the ground surface of each monitoring well riser. The data is summarized in Table 5.1 below.

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.3, Appendix A. The details of these monitoring wells are provided in Table 5.1 below.

Table 5.1: Monitoring Well Details

Monitoring Well ID	Soil Stratigraphy at Screen	Depth to Groundwater (mbgs)	Ground Elevation (masl)	Groundwater Elevation (masl)
BH/MW21-1	Brown to grey silty clay with sand	3.80	96.179	92.38
BH/MW21-4	Brown to grey silty sand with clay and gravel	3.51	96.079	92.56
BH/MW21-6	Brown to grey silty clay/clayey silt with sand	3.56	93.338	92.78

The inferred direction of shallow groundwater flow is generally to the northwest based on the interpreted groundwater elevation contours presented in Figure A.4, 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 below. The horizontal hydraulic gradient was estimated for shallow groundwater conditions based on water levels measured on March 17, 2021, and the inferred groundwater contours are presented in Figure A.4, Appendix A.

Table 5.2: Hydraulic Gradients Between Monitoring Wells

Monitoring Well ID	Monitoring Well ID	Distance between Monitoring Wells (m)	Difference in Groundwater Elevation (m)	Horizontal Hydraulic Gradient (m/m)
BH/MW21-1	BH/MW21-4	80.28	0.19	0.002367

Monitoring Well ID	Monitoring Well ID	Distance between Monitoring Wells (m)	Difference in Groundwater Elevation (m)	Horizontal Hydraulic Gradient (m/m)
BH/MW21-1	BH/MW21-6	87.89	0.40	0.004551
BH/MW21-4	BH/MW21-6	60	0.21	0.0035

The average horizontal hydraulic gradient for shallow groundwater conditions was 0.003473 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 and surficial soil maps of the Ottawa area.

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 March 5, 2021, and March 15, 2021, and augering on October 11, 2024. The analytical results of soil samples are presented in Tables C.1 and Table C.2, Appendix C. The soil samples were submitted to Paracel (in 2021) and AGAT (in 2024) for analysis of one or more of the following parameters: metals, hydride-forming metals, ORPs, PHCs F1-F4, BTEX, VOCs, PAHS, and/or OCPs.

For the 2021 investigation, a total of 14 soil samples (11 bulk samples plus three duplicates) were collected and stored in laboratory provided coolers with ice and shipped to the laboratory for analysis. Samples were submitted to Paracel, a CALA-certified analytical laboratory, under standard chain-of-custody protocols and in accordance with GEMTEC QA/QC procedures. The soil samples submitted for analyses are summarized in Table 5.3.

Table 5.3: Summary of Soil Sampling Program and COPC Analyses

Location ID	Sample ID	Depth Interval (mbgs)	Soil Description	Analytical Analyses
BH21-1	SA-2	0.76 – 1.52	Brown silty clay with sand	Metals, PHCs, VOCs, OCPs
BH21-2	SA-1	0.00 – 0.91	Brown sandy silt with gravel (fill Material)	Metals, PHCs, BTEX, PAHs
BH21-3	SA-1	0.00 – 0.69	Brown sandy silt with gravel (fill Material)	Metals, PHCs, BTEX, PAHs
BH21-4	SA-1	0.00 – 0.91	Brown silty sand with gravel (fill Material)	Metals, PHCs, VOCs, PAHs, OCPs
	SA-101*	0.00 – 0.91	Brown silty sand with gravel (fill Material)	Metals, PHCs, VOCs, PAHs
	SA-6	3.81 – 4.57	Grey silty clay	Metals, PHCs, VOCs, OCPs
	SA-106*	3.81 – 4.57	Grey silty clay	Metals, PHCs, VOCs, OCPs
BH21-5	SA-1	0.00 – 0.77	Brown sandy silt with gravel (fill Material)	Metals, PHCs, BTEX, PAHs
	SA-101*	0.00 – 0.77	Brown sandy silt with gravel (fill Material)	Metals, PHCs, BTEX, PAHs
BH21-6	SA-1	0.00 – 0.76	Brown sandy silt with gravel (fill Material)	Metals, PHCs, VOCs, PAHs, OCPs
	SA-4	2.43 – 2.73	Grey silty clay	Metals, PHCs, VOCs, OCPs
BH21-7	SA-1	0.00 – 0.91	Brown silty sand with gravel (fill Material)	Metals, PHCs, BTEX, PAHs
BH21-8	SA-2	0.45 – 0.85	Grey clay and silt (fill Material)	Metals, PHCs, BTEX, PAHs, OCPs
	SA-3	0.85 – 1.06	Brown sand and gavel with red brick (fill Material)	Metals, PHCs, VOCs, PAHs

Notes:

PHCs F1-F4 – Petroleum hydrocarbons F1 to F4
PAHs – Polycyclic aromatic hydrocarbons
VOCs – Volatile organic compounds
OCPs – Organochlorine pesticides
Metals – Metals and hydride-forming metals, and ORPs including EC and SAR

No exceedances were reported for soil samples except for EC in one sample collected from BH21-8 (see discussion below). Laboratory Certificates of Analysis for the soil samples are included in Appendix D.

5.6.1 Electrical Conductivity

The 2021 analytical results indicated the value of EC for soil sample BH21-8 SA-3 was 2560 µS/cm, which exceeded the Table 2 RPI SCS of 700 µS/cm. This sample taken between 0.85 to 1.06 mbgs within sand and gravel fill material.

To better assess the lateral extent of elevated EC, 11 additional shallow test holes were advanced via hand augering on October 11, 2024. A total of 13 samples (12 bulk samples plus one duplicate) were collected within a 2 m radius of the exceeding sampling location (BH21-8) and from the same depths as the initial exceeding sample for lateral delineation. The vertical extent of elevated EC was assessed by collecting one sample in the interval below the known exceedance.

The 13 additional samples were analyzed for EC and SAR. A summary of analytical results is presented in Table 5.4 below and in Table C.2 in Appendix A. The sample locations are shown on Figure A.3 and the results by location are shown on Figure A.5.

No SAR exceedances were noted. To further assess the presence of elevated EC, the EC results of the original and additional samples were averaged. The result of the averaging is presented in the table below and indicates that EC continues to be moderately elevated with respect to the Table 2 RPI SCS of 700 µS/cm.

Table 5.4: Additional Sample Information and Electrical Conductivity

Additional Sample ID	Additional Sample Depth (mbgs)	EC of Additional Sample (µS/cm)	Average EC of Original and Additional Samples (µS/cm)
BH21-8 SA3 A	0.8 – 1.0	631	**797**
BH21-8 SA4 A	1.0 – 1.5	642	
BH21-8 SA3 B	0.8 – 1.0	401	
BH21-8 SA3 C	0.8 – 1.0	**937**	
BH21-8 SA3 D	0.8 – 1.0	356	
BH21-8 SA3 E	0.8 – 1.0	526	
BH21-8 SA3 F	0.8 – 1.0	**917**	
BH21-8 SA3 G	0.8 – 1.0	526	
BH21-8 North	0.8 – 1.0	**873**	
BH21-8 10 North*	0.8 – 1.0	**762**	
BH21-8 South	0.8 – 1.0	**834**	
BH21-8 East	0.8 – 1.0	298	
BH21-8 West	0.8 – 1.0	**892**	

Notes:
*Duplicate sample for QA/QC purposes.

5.7 Groundwater Quality

Groundwater sampling at the Site was completed on March 17, 2021. The analytical results of groundwater samples are presented in Table C.3, Appendix C. The groundwater samples were submitted for analysis of one or more of the following parameters: metals, hydride-forming metals, PHCs F1-F4, VOCs, and OCPs.

A total of four groundwater samples (three samples plus one duplicate) were collected and stored in laboratory provided coolers with ice and shipped to the laboratory for analysis. One trip blank sample was also transported to the property during the field program and submitted with the collected groundwater samples for analysis. Samples were submitted to Paracel under standard chain-of-custody protocols and in accordance with GEMTEC QA/QC procedures. The groundwater samples submitted are summarized in Table 5.5.

Table 5.5: Summary of Groundwater Sampling Program and COPC Analyses

Monitoring Well ID	Screened Interval (mbgs)	Stratigraphic Unit	Analytical Analyses
MW21-1	0.76 – 3.81	Overburden	Metals, PHCs, VOCs, OCPs
MW21-4	1.52 – 4.57	Overburden	Metals, PHCs, VOCs, OCPs
MW21-104*	1.52 – 4.57	Overburden	Metals, PHCs, VOCs, OCPs
MW21-6	0.61 – 3.65	Overburden	Metals, PHCs, VOCs, OCPs
Trip Blank	-	-	PHC F1 & VOCs

Notes:

PHCs F1-F4 – Petroleum hydrocarbons F1 to F4
PAHs – Polycyclic aromatic hydrocarbons
VOCs – Volatile organic compounds
OCPs – Organochlorine pesticides
Metals – Metals and hydride-forming metals, and ORPs including EC and SAR
*Duplicate sample for QA/QC purposes

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 groundwater 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

5.9.1 Field Program QA/QC

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

The RDA was calculated as follows:

$$RPD = \frac{|x_1 - x_2|}{x_m}$$

Where
x_1 initial sample results
x_2 duplicate sample results
x_m mean of x_1, x_2

Two parent-duplicate soil/groundwater sample sets were collected and submitted for laboratory analysis as part of the QA/QC program, as per Table 5.6.

Table 5.6: Parent and Duplicate Samples

Date	Media	Sample ID	Duplicate ID
March 15, 2021	Soil	BH21-4 SA-1	BH21-4 SA-101
March 15, 2021	Soil	BH21-4 SA-6	BH21-4 SA-106
March 3, 2021	Soil	BH21-5 SA-1	BH21-5 SA-101
March 17, 2021	Groundwater	BH/MW21-4	BH/MW21-104

The analytical results of the parent and duplicate samples indicated a satisfactory correlation between the parent and duplicate samples as per the Analytical Protocol except chromium (34%) and lead (36%) in the soil duplicate pair BH21-4 SA1 and BH21-4 SA-101. The marginal exceedances 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. This is not considered to affect the overall interpretation of the data for this sample as the results are still below the applicable standard.

5.9.2 Analytical Laboratory QA/QC

The analytical laboratory completed all analyses in accordance with internal laboratory QA/QC which includes standardized analytical methods and procedures, in accordance with O. Reg. 153/04, as amended. The certificates of analysis (CoA) did not summarize any qualifiers to the datasets. All CoAs are provided in Appendix D.

5.9.3 QA/QC Summary

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

5.10 Phase Two Conceptual Site Model

The Phase Two ESA CSM is presented in the following sections.

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

- **Figure A.1** Study Area Plan and Potentially Contaminating Activities
- **Figure A.2** Areas of Potential Environmental Concern
- **Figure A.3** Test Location Plan
- **Figure A.4** Groundwater Elevation and Inferred Groundwater Flow Plan
- **Figure A.5** Elevated EC in Shallow Soil

5.10.1 Property Description and History

The Phase Two Property consists of an undeveloped parcel of land with an approximate area of 2.07 hectares (5.12 acres) located at 3955 Kelly Farm Drive, Ottawa, Ontario. The Site is bounded to the northwest by Barrett Farm Drive, to the northeast by Aconitum Way, to the southeast by Lavatera Street, and to the southwest by Kelly Farm Drive.

Historically, the Site was used for agricultural purposes based on aerial photographs. The Site is currently undeveloped and appears to be used partially as a laydown area for residential construction currently being completed in the area. The proposed future use is institutional development with a school.

Table 5.7: Legal Description and Site Information

Site Information	
Legal Description	BLOCK 196, PLAN 4M1640; SUBJECT TO AN EASEMENT IN GROSS AS IN OC2168913; SUBJECT TO AN EASEMENT IN GROSS OVER PART 40 4R32389 AS IN OC2168915; CITY OF OTTAWA.
PIN	04328-4888 (LT)
Site Owners	Findlay Creek Properties (North) Ltd. Tartan Homes (North Leitrim) Inc. Tartan Land (North Leitrim) Inc.
Site Contact	Mr. Brian Carré of CEPEO

5.10.2 Previous Investigations

The following lists the previous reports for the Site completed by GEMTEC.

- "Phase I Environmental Site Assessment, 3955 Kelly Farm Drive, Ottawa, Ontario" Project No. 100441.001 – V02 dated March 10, 2021 (2021 Phase I ESA).
- "Phase II Environmental Site Assessment, 3955 Kelly Farm Drive, Ottawa, Ontario" Project No. 100441.001 dated March 31, 2021 (2021 Phase II ESA).
- "Phase One Environmental Site Assessment Update, 3955 Kelly Farm Drive, Ottawa, Ontario" Project No. 100441.001 dated October 9, 2024 (2024 Phase One ESA Update).

The 2021 Phase I ESA identified six PCAs (shown in Table 5.8 below) resulting in four APECS (shown in Table 5.9 below); as such a Phase II ESA was recommended and carried out in March 2021. The shallow soil at one sample location (BH21-8) was characterized by elevated EC. It was concluded that delineation of impacted fill material be completed in the vicinity of BH21-8 prior to property development. The investigation methodology and results of the 2021 Phase II ESA are included throughout this report and formed the basis of the scope of work (i.e., delineation boreholes in the vicinity of BH21-8) for this Phase Two ESA.

5.10.3 Potentially Contaminating Activities

The PCAs identified in the 2021 Phase I ESA are summarized in Table 5.8. No new PCAs were identified in the 2024 Phase One ESA Update.

Table 5.8: Summary of Potentially Contaminating Activities

Type of PCA	Address / Location	Description	PCA Resulted in APEC / No APEC Rationale
PCA #30: Importation of Fill Material of Unknown Quality	On Site, entire property	Fill material of unknown origin was identified on the Site during the aerial photograph review and the Site interview	Yes Based on fill of unknown origin being located on the Site
PCA # 40: Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Applications.	On Site, entire property	Through a review of aerial photographs and during the site interview, there is potential for pesticides having been historically used on the subject property	Yes Based on potential pesticide use on the Site
Ot. Spill	163 Nepeta Crescent	A pipeline incident was identified as pipeline damage at 163 Nepeta Crescent in 2020	No Based on type of release and distance from Site

Type of PCA	Address / Location	Description	PCA Resulted in APEC / No APEC Rationale
Ot. Spill	Leitrim Road between Bank Street and Kelly Farm Drive	Two spills were identified on Leitrim Road: (i) Flooding in 2018 resulted in an overflow of storm water with suspended solids; and (ii) A 170 lb leak of freon occurred in 2011	No Based on distance from Site and type of release
48. Salt Manufacturing, Processing and Bulk Storage	On Site and adjacent properties	The HLUI identified City of Gloucester – Leitrim works site & garage within the study area accepted 2,000 tonnes of salt delivery	Yes Based on PCA being in study area of the Site
28. Gasoline and Associated Products Storage in Fixed Tanks	On Site, and adjacent properties	The HLUI identified City of Gloucester – Leitrim works site & garage within the study area with 3 pumps including gas and diesel	Yes Based on PCA being in the study area of the Site

5.10.4 Areas of Potential Environmental Concern

The APECs identified based on the PCAs are summarized in Table 5.9. Figure A.3, Appendix A indicates the location of the APECs.

Table 5.9: Areas of Potential Environmental Concern

APEC #	Type of PCA	Description	Material of Concern	Contaminants of Potential Concern (COPC)
1	PCA #30: Importation of Fill Material of Unknown Quality	Fill material of unknown origin was identified on the Site during the aerial photograph review and the Site interview	Soil	Metals & ORPs PHCs F1-F4 BTEX PAHs
2	PCA # 40: Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Applications.	Through a review of aerial photographs and during the Site interview, there is potential for pesticides having been historically used on the Site	Soil Groundwater	OCPs
3	PCA # 48. Salt Manufacturing, Processing and Bulk Storage	Through a search with the HLUI, Leitrim works site & garage was identified within the study area and accepted 2,000 tonnes of salt delivery	Soil Groundwater	ORPs (including EC, SAR Chlorine Sodium)

APEC #	Type of PCA	Description	Material of Concern	Contaminants of Potential Concern (COPC)
4	PCA # 28. Gasoline and Associated Products Storage in Fixed Tanks	Through a search with the HLUI, Leitrim works site & garage was identified within the study area with 3 pumps including gas and diesel	Soil Groundwater	Metals & ORPs PHCs F1-F4 VOCs

Notes:

PAHs – polyaromatic hydrocarbons
Metals – metal parameters as per O.Reg. 153/04 including hydride-forming metals
ORPs – other regulated parameters including electrical conductivity (EC), sodium adsorption ratio (SAR), pH, hot water-soluble boron (HWS-B), cyanide (CN-), hexavalent chromium (Cr IV) and mercury (Hg)
PHCs F1-F4 – petroleum hydrocarbon fractions
BTEX – benzene, toluene, ethylbenzene, xylene
OCPs – organochloride pesticides
VOCs – volatile organic compounds

5.10.5 Field Investigation

Between March 5, 2021, and March 15, 2021, 8 boreholes (BH21-1 through BH21-8) were advanced using a Geoprobe drill rig to depths ranging between 1.06 to 4.57 mbgs. Monitoring wells were installed in three of the boreholes (BH/MW21-1, BH/MW21-4, and BH/MW21-6). On October 11, 2024, 11 additional test locations were advanced via hand augering to depths ranging between 1.0 to 1.5 mbgs in the vicinity of BH21-8 to assist with assessing the extent of fill material with elevated EC.

The subsurface soil conditions encountered in the boreholes was generally fill material consisting of brown silty sand or sandy silt with some gravel, clay and silt which was underlain by native deposits of brown to grey silty clay.

Collectively, a total of 27 soil samples (23 bulk samples plus four duplicates) were analyzed for one or more of the following COPCs: metals, hydride-forming metals, ORPs, PHCs F1 to F4, BTEX, VOCs, PAHs, OCPs, EC, and/or SAR.

A total of 4 groundwater samples (3 bulk samples plus one duplicate) were analyzed for the following COPCs: metals, VOCs, PHCs, and OCPs. One trip blank was submitted for PHC F1 and VOCs.

5.10.6 Subsurface Structures and Utilities

Buried utility service locates completed prior to the drilling program indicated public buried utility services are present within the Study Area. No supplemental underground utility drawings for the Site were provided for review.

5.10.7 Physical Setting

5.10.7.1 Topography

The Site has a relatively flat topography and is at an elevation of approximately 95 masl. Surrounding local topography generally slopes gradually downwards towards a wetland approximately 700 m south of the Site.

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

5.10.7.2 Stratigraphy – Boreholes

The subsurface soil conditions encountered in the boreholes throughout the two field programs included in this Phase Two ESA was generally fill material consisting of brown silty sand or sandy silt with some gravel, clay and silt which was underlain by native deposits of brown to grey silty clay. The Record of Borehole Logs are provided in Appendix B.

5.10.7.3 Depth to Bedrock

The presence of bedrock was not confirmed. However, the overburden mapping indicates that the depth to bedrock is approximately 3 to 5 m. Geologic mapping of the area shows the bedrock is anticipated to be dolostone and sandstone of the Beekmantown Group.

5.10.7.4 Hydrogeological Characteristics

The inferred direction of shallow groundwater flow is generally to the northwest based on the interpreted groundwater elevation contours presented in Figure A.4, Appendix A.

The average horizontal hydraulic gradient for shallow groundwater conditions was 0.003473 m/m. Vertical hydraulic gradient for shallow groundwater conditions were not calculated as nested monitoring wells were not installed at the Site.

5.10.7.5 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.3, Appendix A. Groundwater elevations ranged from 92.38 to 92.78 masl on October 11, 2024. The inferred direction of shallow groundwater flow is generally to the northwest based on the interpreted groundwater elevation contours presented in Figure A.4, Appendix A.

5.10.7.6 Environmentally Sensitive Areas

No ANSIs were identified on-Site or within the study area.

5.10.7.7 Shallow Soil Property or Water Body

Surficial soil maps of the Ottawa area indicate that the overburden in the vicinity of the Site generally consists of coarse-textured glaciomarine deposits; sand, gravel, minor silt and clay foreshore and basinal deposits with thicknesses ranging between 0 and 5 m. The closest water body is the Rideau River located over 6.5 km west of the Site. Therefore, Section 43.1(a) and 43.1(b) of O. Reg. 153/04 do not apply to the Site.

5.10.8 Applicable Site Condition Standards

The analytical results were compared to the Table 2 Full Depth Generic SCS RPI in a Potable Ground Water Condition with coarse textured soil as presented in the 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:

- Land Use: The Site is currently undeveloped and was historically used for agricultural purposes. The proposed future land use is institutional.
- Soil Texture: Based on visual observations during the field program and in the absence of a grain size analysis completed on samples – as a conservative approach, coarse textured soils have been considered for this 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 results obtained from the intrusive investigation, the Site is not considered a shallow soil property. Furthermore, the property is not within 30 metres of a water body.
- Groundwater Use: Potable water in the area of the Site is supplied by the City of Ottawa, however through review of the Ontario Well Records, domestic and commercial water wells were identified within the study area – accordingly as a conservative approach, groundwater use for the Site and vicinity is considered potable.
- Environmentally Sensitive Site: Environmental sensitivity is considered in the selection of appropriate provincial standards for comparison. Section 41 of O.Reg.153/04 states that a property is to be considered environmentally sensitive if any of the following are applicable:
    - (1) the property is,
        - (i) within an area of natural significance;

        - (ii) includes or is adjacent to an area of natural significance or part of such an area; or
        - (iii) includes land that is within 30 metres of an area of natural significance or part of such an area;
    - (2) the soil at the property has a pH value as follows:
        - (i) for surface soil, less than 5 or greater than 9;
        - (ii) for sub surface soil, less than 5 or greater than 11; or
    - (3) a qualified person is of the opinion that, given the characteristics of the property and the certifications the qualified person would be required to make in a record of site condition in relation to the property as specified in Schedule A, it is appropriate to apply this section to the property.

The Site is not considered to be environmentally sensitive. pH values for soil samples submitted were within the acceptable range and the Site is not within, adjacent or include, in part, an ANSI or water body within 30 m of the Site.

5.10.9 Discussion of APEC 1 – Potential for Fill Material

Based on the 2021 Phase I ESA and confirmation in the 2024 Phase One ESA Update, there is potential for fill of unknown quality to have been used on the Site. The COPCs include metals, hydride-forming metals, ORPs, PHCs, BTEX, and/or PAHs.

Between March 5, 2021 and March 15, 2021, 8 boreholes were advanced to assess this APEC. Fill material was encountered from the ground surface at all boreholes except BH21-1. The fill material consisted of brown silty sand/sandy silt with some gravel, clay, and silt. The analytical results indicated the value of EC for soil sample BH21-8 SA-3 was 2560 µS/cm, which exceeded the Table 2 RPI SCS of 700 µS/cm. This sample taken between 0.85 to 1.06 mbgs within sand and gravel fill material.

To better assess the lateral extent of elevated EC, 11 additional shallow test holes were advanced via hand augering on October 11, 2024. A total of 13 samples (12 bulk samples plus one duplicate) were collected within a 2 m radius of the exceeding sampling location (BH21-8) and from the same depths as the initial exceeding sample for lateral delineation. The vertical extent of elevated EC was assessed by collecting one sample in the interval below the known exceedance.

The 13 additional samples were analyzed for EC and SAR. A summary of the analytical results is presented in Table 5.10 below and in Table C.2 in Appendix A. The sample locations are shown on Figure A.3 and the results by location are shown on Figure A.5.

No SAR exceedances were noted. To further assess the presence of elevated EC, the EC results of the original and additional samples were averaged. The result of the averaging is presented in the table below and indicates that EC continues to be moderately elevated with respect to the Table 2 RPI SCS of 700 µS/cm in the vicinity of BH21-8.

Table 5.10: Additional Sample Information and Electrical Conductivity

Additional Sample ID	Additional Sample Depth (mbgs)	EC of Additional Sample (µS/cm)	Average EC of Original and Additional Samples (µS/cm)
BH21-8 SA3 A	0.8 – 1.0	631	**797**
BH21-8 SA4 A	1.0 – 1.5	642	
BH21-8 SA3 B	0.8 – 1.0	401	
BH21-8 SA3 C	0.8 – 1.0	**937**	
BH21-8 SA3 D	0.8 – 1.0	356	
BH21-8 SA3 E	0.8 – 1.0	526	
BH21-8 SA3 F	0.8 – 1.0	**917**	
BH21-8 SA3 G	0.8 – 1.0	526	
BH21-8 North	0.8 – 1.0	**873**	
BH21-8 10 North*	0.8 – 1.0	**762**	
BH21-8 South	0.8 – 1.0	**834**	
BH21-8 East	0.8 – 1.0	298	
BH21-8 West	0.8 – 1.0	**892**	

Notes:
*Duplicate sample for QA/QC purposes.

5.10.10 Contaminated Media

Based on the findings of two field investigations undertaken as part of this Phase Two ESA, EC exceedances in the vicinity of one borehole (BH21-8) were confirmed.

5.10.11 Contaminant Exceeding Applicable Standards at the Site

The EC in the soil samples collected from the Site are considered to be related to application of de-icing salt on the adjacent roadways within the study area in the winter.

Considering the other soil and groundwater analytical results across the Site did not have impacts of EC, it is not anticipated that the EC in the vicinity of BH21-8 would create impacts to the overall condition of the Site, and it is reasonable to assume salt application will continue with the anticipated future use of the property as a school. Further, the areas of impacted EC in the soil

are limited to depths of fill material, which is likely to be removed or covered by asphalt during the proposed Site development. Accordingly, the singular area of EC impact that was identified is not anticipated to pose any risk to human health, nor a significant environmental risk to the property. Based on this and Section 49.1 of O.Reg. 153/04, it is the Qualified Person's opinion that the average value of EC within the area of BH21-8 should be deemed to not exceed.

5.10.12 Potential Influence of Utilities on Contaminant Migration

The area of identified EC impacts in the shallow fill material area and not in the deeper samples. As such, the potential influence of underground utilities is not anticipated to be an issue at the Site.

5.10.13 Contaminant Migration

Soil impacted with EC was identified in the vicinity of BH21-8, which is anticipated to be due to salt application on adjacent roadways. Due to the nature of this contaminant and that salt application will continue in the future, contaminant migration is not anticipated to be an issue.

5.10.14 Meteorological and Climatic Considerations

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.

5.10.15 Cross Sections – Lateral and Vertical Distribution of Contaminants

No cross sections were completed considering the singular identification of the salt-related contaminant at the tested locations on the Site.

6.0 CONCLUSIONS

The Phase Two ESA investigated the APECs identified in the 2021 Phase I ESA and confirmed in the 2024 Phase One ESA Update. Based on the results of the soil samples and groundwater samples submitted as part of this Phase Two ESA, no further work is recommended at this time.

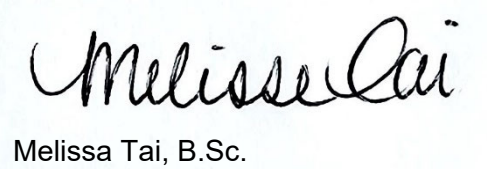
7.0 CLOSURE

The undersigned Qualified Person confirms that he/she was responsible for conducting and/or supervising this Phase Two ESA and the associated findings and conclusions.

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,

GEMTEC Consulting Engineers and Scientists Limited



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Environmental Specialist

Daniel Elliot, P.Geo., QP_{ESA}
Senior Environmental Geoscientist

November 27,2024

MT/DE/mk

8.0 REFERENCES

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9.0 LIMITATION OF LIABILITY

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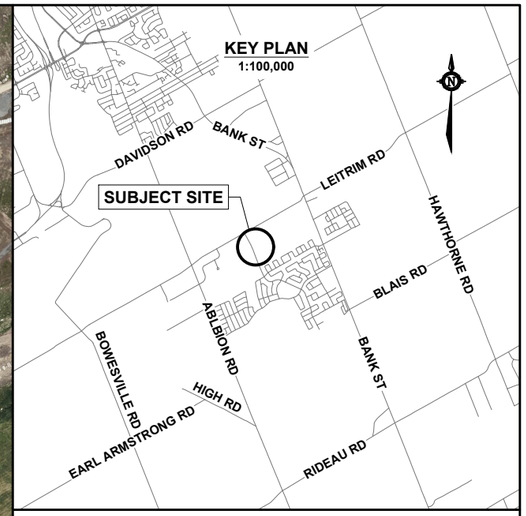
The investigation undertaken by GEMTEC with respect to this report and any conclusions or recommendations made in this report reflect the best judgements of GEMTEC based on the Site conditions observed during the investigations undertaken at the date(s) identified in the report and on the information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

- SUBJECT SITE
- STUDY AREA
  250m AROUND SUBJECT SITE

POTENTIALLY CONTAMINATING ACTIVITIES

28	Gasoline and Associated Products Storage in Fixed Tanks
30	Importation of Fill Material of Unknown Quality
40	Pesticides (including Herbicides, Fungicides and Anti-Fouling Agents) Manufacturing, Processing, Bulk Storage and Large-Scale Applications
48	Salt Manufacturing, Processing and Bulk Storage

OTHER

A	Spill

DATA SOURCES AND REFERENCES

1. Coordinate system:
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. Image @2024 Google Maps, CNES / Airbus, First Base Solutions, Maxar Technologies
5. Contains information licensed under the Open Government Licence – Ontario
6. Geographic dataset source: Ontario GeoHub

SCALE
1:4000
0 80 160 240m

DRAWING
STUDY AREA PLAN AND
POTENTIALLY CONTAMINATING ACTIVITIES

CLIENT
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L'EST DE L'ONTARIO (CEPEO)

PROJECT
PHASE TWO ESA
3955 KELLY FARM DRIVE
OTTAWA, ONTARIO

DRAWN BY	CHECKED BY
S.L.	D.E.
PROJECT NO.	REVISION NO.
100441.001	1
DATE	FIGURE NO.
NOVEMBER 2024	**FIGURE A.1**

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LEGEND

SUBJECT SITE

STUDY AREA
250m AROUND SUBJECT SITE

AREA OF POTENTIALLY CONTAMINATING ACTIVITIES

APEC 1 – Importation of Fill Material of Unknown Quality

APEC 2 – Pesticides Manufacturing, Processing, Bulk Storage and Large-Scale Applications

APEC 3 – Salt Manufacturing, Processing and Bulk Storage

APEC 4 – Gasoline and Associated Products Storage in Fixed Tanks

DATA SOURCES AND REFERENCES

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SCALE 1:3000

0 100 200m

DRAWING
AREAS OF POTENTIAL ENVIRONMENTAL CONCERN

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NOVEMBER 2024	**FIGURE A.2**

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LEGEND

BH/ MW # — BOREHOLE/ MONITORING WELL ID

XX.XX — GROUND SURFACE ELEVATION, IN METRES GEODETIC DATUM

BOREHOLE
(MARCH 2021)

BOREHOLE / MONITORING WELL
(MARCH 2021)

AUGER SAMPLE
(OCTOBER 2024)

APPROXIMATE PROPERTY BOUNDARY

DATA SOURCES AND REFERENCES

1. Coordinate system:
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SCALE

1:1000

0 20 40 60m

DRAWING

TEST LOCATION PLAN

CLIENT

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NOVEMBER 2024	**FIGURE A.3**

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LEGEND

- BH/ MW # — BOREHOLE/ MONITORING WELL ID
- XX.XX — GROUND SURFACE ELEVATION, IN METRES GEODETIC DATUM
- BOREHOLE (MARCH 2021)
- BOREHOLE / MONITORING WELL (MARCH 2021)
- APPROXIMATE PROPERTY BOUNDARY
- GROUNDWATER CONTOUR
- 80.0 — GROUNDWATER ELEVATION (mASL)
- INFERRED GROUNDWATER FLOW DIRECTION

DATA SOURCES AND REFERENCES

1. Coordinate system:
2. Distances, elevations, and coordinates are shown in metres unless denoted otherwise
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SCALE 1:1000

0 20 40 60m

DRAWING
GROUNDWATER ELEVATION AND INFERRED GROUNDWATER FLOW PLAN

CLIENT
CONSEIL DES ÉCOLES PUBLIQUES DE L'EST DE L'ONTARIO (CEPEO)

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PHASE TWO ESA
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NOVEMBER 2024	**FIGURE A.4**

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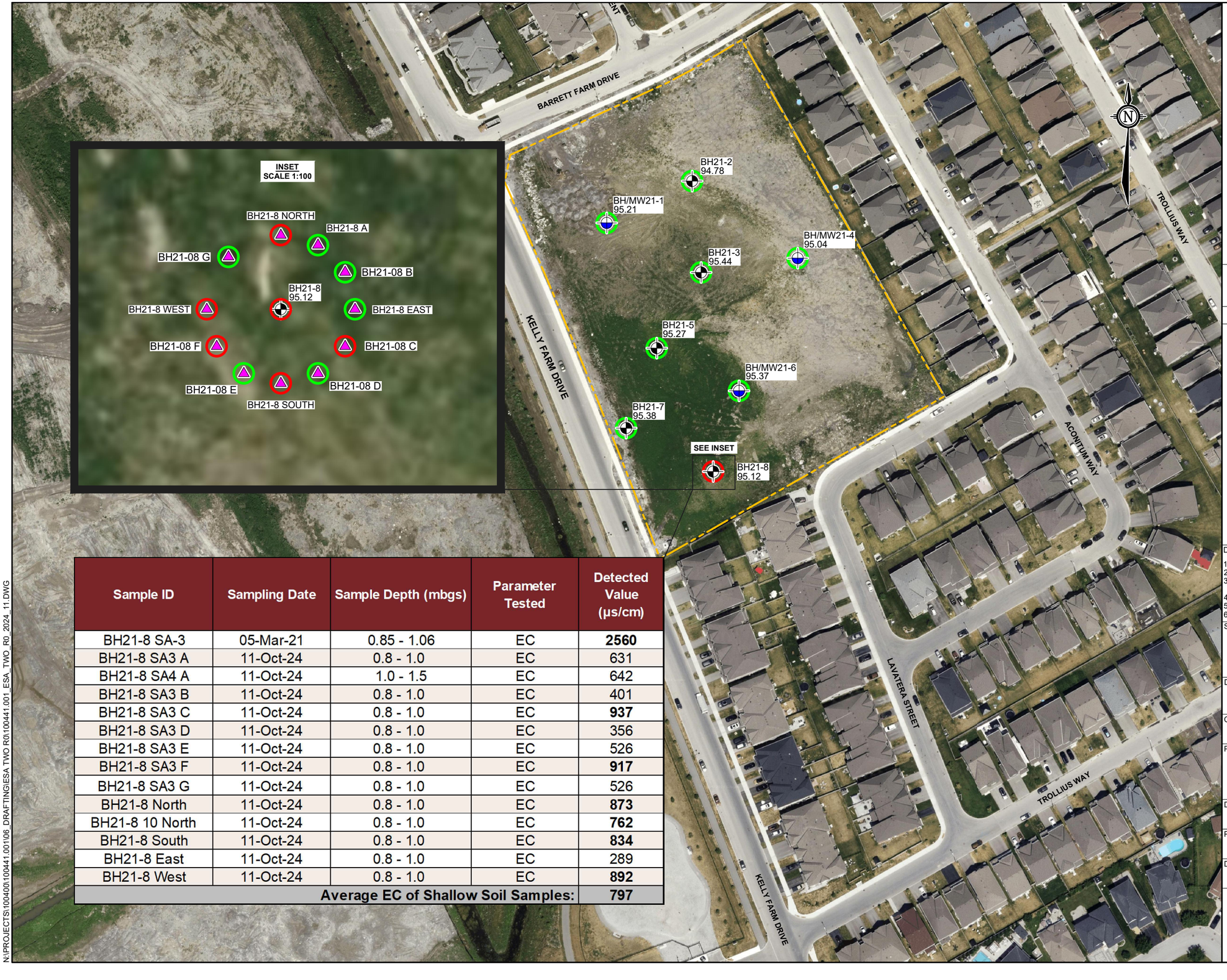

Sample ID	Sampling Date	Sample Depth (mbgs)	Parameter Tested	Detected Value (µs/cm)
BH21-8 SA-3	05-Mar-21	0.85 - 1.06	EC	**2560**
BH21-8 SA3 A	11-Oct-24	0.8 - 1.0	EC	631
BH21-8 SA4 A	11-Oct-24	1.0 - 1.5	EC	642
BH21-8 SA3 B	11-Oct-24	0.8 - 1.0	EC	401
BH21-8 SA3 C	11-Oct-24	0.8 - 1.0	EC	**937**
BH21-8 SA3 D	11-Oct-24	0.8 - 1.0	EC	356
BH21-8 SA3 E	11-Oct-24	0.8 - 1.0	EC	526
BH21-8 SA3 F	11-Oct-24	0.8 - 1.0	EC	**917**
BH21-8 SA3 G	11-Oct-24	0.8 - 1.0	EC	526
BH21-8 North	11-Oct-24	0.8 - 1.0	EC	**873**
BH21-8 10 North	11-Oct-24	0.8 - 1.0	EC	**762**
BH21-8 South	11-Oct-24	0.8 - 1.0	EC	**834**
BH21-8 East	11-Oct-24	0.8 - 1.0	EC	289
BH21-8 West	11-Oct-24	0.8 - 1.0	EC	**892**
Average EC of Shallow Soil Samples:				**797**

LEGEND

BH/ MW # — BOREHOLE/ MONITORING WELL ID
XX.XX — GROUND SURFACE ELEVATION, IN METRES GEODETIC DATUM

- **BOREHOLE** (MARCH 2021)
- **BOREHOLE / MONITORING WELL** (MARCH 2021)
- **AUGER SAMPLE** (OCTOBER 2024)
- **MEETS TABLE 2 RPI SCS - COARSE**
- **EXCEEDS TABLE 2 RPI SCS - COARSE**
- **APPROXIMATE PROPERTY BOUNDARY**

Notes:

1 - MECP Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for Residential / Parkland / Institutional (RPI) land use with coarse textured soil.

Bolded	Exceeds MECP Table 2 SCS

REFER TO REPORT DISCUSSION REGARDING EC VALUES WITH RESPECT TO THE STANDARD

DATA SOURCES AND REFERENCES

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SCALE 1:1500

0 30 60 90m

DRAWING
ELEVATED EC IN SHALLOW SOIL

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PROJECT NO.	**REVISION NO.**
100441.001	1
DATE	**FIGURE NO.**
NOVEMBER 2024	**FIGURE A.5**

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APPENDIX B

Borehole Logs

RECORD OF BOREHOLE 21-1

CLIENT: CEPEO Créateur Dèopportunités
PROJECT: 3955 Kelly Farm Drive, Ottawa, Ontario
JOB#: 100441.001
LOCATION: Refer to Borehole and Monitoring Well Location Plan, Figure A1

SHEET: 1 OF 1
DATUM: CGVD28
BORING DATE: Mar 5 2021

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLE DATA: NUMBER	TYPE	RECOVERY (mm)	BLOWS/0.3m	LABORATORY ANALYSES	COMBUSTIBLE VAPOUR CONCENTRATION (ppm)	ODOUR	TPH (mg/kg)	MONITORING WELL INSTALLATION AND NOTES
		Ground Surface		95.21									
0		Grey GRAVEL and SAND		95.06									
		Brown SILTY CLAY with sand		0.15	1	SS	457			Hex: 0 IBL: 1	None		Stick-up casing (0.97 m) Bentonite
													Filter Pack
1					2	SS	533		PHC F1-F4/VOC, PAHs, M&I, OCP	Hex: 0 IBL: 0	None		TOP OF SCREEN ELEV.: 94.45 m
					3	SS	533			Hex: 0 IBL: 1	None		
2				92.93									38 millimetre diameter slotted PVC pipe
		Grey SILTY CLAY		2.28									
3					4	SS	635			Hex: 10 IBL: 1	None		
				91.40									BOTTOM OF SCREEN ELEV.: 91.40 m
		End of Borehole		3.81									

GROUNDWATER OBSERVATIONS

DATE	DEPTH (m)	ELEVATION (m)
Mar. 17/21	3.80 ▽	92.38

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

ENV - BOREHOLE LOG BOREHOLE LOG- KELLY FARM DRIVE- 100441.001- MARCH 2021.GPJ GEMTEC 2018.GDT 31/3/21

RECORD OF BOREHOLE 21-2

CLIENT: CEPEO Créateur Dèopportunités
PROJECT: 3955 Kelly Farm Drive, Ottawa, Ontario
JOB#: 100441.001
LOCATION: Refer to Borehole and Monitoring Well Location Plan, Figure A1

SHEET: 1 OF 1
DATUM: CGVD28
BORING DATE: Mar 15 2021

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	SOIL PROFILE: STRATA PLOT	SOIL PROFILE: ELEV. / DEPTH (m)	SAMPLE DATA: NUMBER	SAMPLE DATA: TYPE	SAMPLE DATA: RECOVERY (mm)	SAMPLE DATA: BLOWS/0.3m	SAMPLE DATA: LABORATORY ANALYSES	COMBUSTIBLE VAPOUR CONCENTRATION (ppm)	ODOUR	TPH (mg/kg)	MONITORING WELL INSTALLATION AND NOTES
		Ground Surface		94.79									
0		Brown SANDY SILT with gravel (fill material)		93.88	1	SL	254		PHC F1-F4/BTEX, PAHs, M&I	Hex: 0 IBL: 3	None		Backfilled with bentonite
1		Brown SILTY SAND		0.91 93.27	2	SL	737			Hex: 0 IBL: 3	None		
		End of Borehole		1.52									

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

RECORD OF BOREHOLE 21-3

CLIENT: CEPEO Créateur Dèopportunités
PROJECT: 3955 Kelly Farm Drive, Ottawa, Ontario
JOB#: 100441.001
LOCATION: Refer to Borehole and Monitoring Well Location Plan, Figure A1

SHEET: 1 OF 1
DATUM: CGVD28
BORING DATE: Mar 5 2021

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	SOIL PROFILE: STRATA PLOT	SOIL PROFILE: ELEV. / DEPTH (m)	SAMPLE DATA: NUMBER	SAMPLE DATA: TYPE	SAMPLE DATA: RECOVERY (mm)	SAMPLE DATA: BLOWS/0.3m	SAMPLE DATA: LABORATORY ANALYSES	COMBUSTIBLE VAPOUR CONCENTRATION (ppm)	ODOUR	TPH (mg/kg)	MONITORING WELL INSTALLATION AND NOTES
		Ground Surface		95.45									
0		Brown SANDY SILT with gravel (fill material)		94.76	1	SL	650		PHC F1-F4/BTEX, PAHs, M&I	Hex: 10 IBL: 1	None		Backfilled with bentonite
1		Brown SILTY CLAY with sand and gravel		0.69 94.15	2	SL	650				None		
		End of Borhole		1.30									

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Consulting Engineers and Scientists

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

ENV - BOREHOLE LOG BOREHOLE LOG- KELLY FARM DRIVE- 100441.001- MARCH 2021.GPJ GEMTEC 2018.GDT 31/3/21

RECORD OF BOREHOLE 21-4

CLIENT: CEPEO Créateur Dèopportunités
PROJECT: 3955 Kelly Farm Drive, Ottawa, Ontario
JOB#: 100441.001
LOCATION: Refer to Borehole and Monitoring Well Location Plan, Figure A1

SHEET: 1 OF 1
DATUM: CGVD28
BORING DATE: Mar 15 2021

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLE DATA: NUMBER	TYPE	RECOVERY (mm)	BLOWS/0.3m	LABORATORY ANALYSES	COMBUSTIBLE VAPOUR CONCENTRATION (ppm)	ODOUR	TPH (mg/kg)	MONITORING WELL INSTALLATION AND NOTES
		Ground Surface		95.04									
0	Power Auger Hollow Stem Auger (210mm OD)	Brown SILTY SAND with gravel (fill material)		94.13	1	SL	457		PHC F1-F4/VOCs, PAHs, M&I, OCP + DUP	Hex: 0 IBL: 1	None		Stick-up casing (1.03 m) Bentonite
1		Grey SILTY SAND with clay and gravel		0.91	2	SL	610			Hex: 0 IBL: 1	None		Filter Pack
2					3	SL	483			Hex: 0 IBL: 3	None		TOP OF SCREEN ELEV.: 93.52 m
				92.76									
		Grey SILTY CLAY with sand seam		2.28	4	SL	483			Hex: 0 IBL: 3	None		
3					5	SL	762			Hex: 0 IBL: 1	None		38 millimetre diameter slotted PVC pipe
4					6	SL	762		PHC F1-F4/VOC, M&I, OCP + DUP	Hex: 0 IBL: 4	None		
				90.47									BOTTOM OF SCREEN ELEV.: 90.47 m
		End of Borehole		4.57									

GROUNDWATER OBSERVATIONS

DATE	DEPTH (m)	ELEVATION (m)
Mar. 17/21	3.51 ▽	92.56

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

ENV - BOREHOLE LOG BOREHOLE LOG- KELLY FARM DRIVE- 100441.001- MARCH 2021.GPJ GEMTEC 2018.GDT 31/3/21

RECORD OF BOREHOLE 21-5

CLIENT: CEPEO Créateur Dèopportunités
PROJECT: 3955 Kelly Farm Drive, Ottawa, Ontario
JOB#: 100441.001
LOCATION: Refer to Borehole and Monitoring Well Location Plan, Figure A1

SHEET: 1 OF 1
DATUM: CGVD28
BORING DATE: Mar 5 2021

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLE DATA: NUMBER	TYPE	RECOVERY (mm)	BLOWS/0.3m	LABORATORY ANALYSES	COMBUSTIBLE VAPOUR CONCENTRATION (ppm)	ODOUR	TPH (mg/kg)	MONITORING WELL INSTALLATION AND NOTES
		Ground Surface		95.27									
0		Brown SANDY SILT with gravel (fill material)		94.50	1	SL	431		PHC F1-F4/VOC, M&I, OCP + DUP	Hex: 0 IBL: 1	None		Backfilled with bentonite
1		Brown SILTY CLAY with sand and gravel		0.77 / 94.05	2	SL	431			Hex: 0 IBL: 1	None		
		End of Borehole		1.22									

GEMTEC
Consulting Engineers and Scientists

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

ENV - BOREHOLE LOG BOREHOLE LOG- KELLY FARM DRIVE- 100441.001- MARCH 2021.GPJ GEMTEC 2018.GDT 31/3/21

RECORD OF BOREHOLE 21-6

CLIENT: CEPEO Créateur Dèopportunités
PROJECT: 3955 Kelly Farm Drive, Ottawa, Ontario
JOB#: 100441.001
LOCATION: Refer to Borehole and Monitoring Well Location Plan, Figure A1

SHEET: 1 OF 1
DATUM: CGVD28
BORING DATE: Mar 5 2021

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLE DATA: NUMBER	TYPE	RECOVERY (mm)	BLOWS/0.3m	LABORATORY ANALYSES	COMBUSTIBLE VAPOUR CONCENTRATION (ppm)	ODOUR	TPH (mg/kg)	MONITORING WELL INSTALLATION AND NOTES
		Ground Surface		95.37									
0		Brown SANDY SILT with gravel (fill material)		94.61	1	SL	635		PHC F1-F4/VOC, PAHs, M&I, OCP	Hex: 0 IBL: 0	None		Stick-up casing (0.97 m) Bentonite Filter Pack
1		Brown SILTY CLAY with sand and vegetation		0.76	2	SL	635			Hex: 0 IBL: 0	None		TOP OF SCREEN ELEV.: 94.76 m
2					3	SL	304				None		38 millimetre diameter slotted PVC pipe
		Grey SILTY CLAY/ CLAYEY SILT		92.93 2.44	4	SL	304		PHC F1-F4/VOC, M&I, OCP	Hex: 0 IBL: 0	None		
3					5	SI	914			Hex: 0 IBL: 0	None		
					6	SL	914			Hex: 10 IBL: 1	None		
		End of Borehole (Inferred Boulder)		91.72 3.65									BOTTOM OF SCREEN ELEV.: 91.72 m

GROUNDWATER OBSERVATIONS

DATE	DEPTH (m)	ELEVATION (m)
Mar. 17/21	3.56 ▽	92.78

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Consulting Engineers and Scientists

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

ENV - BOREHOLE LOG BOREHOLE LOG- KELLY FARM DRIVE- 100441.001- MARCH 2021.GPJ GEMTEC 2018.GDT 31/3/21

RECORD OF BOREHOLE 21-7

CLIENT: CEPEO Créateur Dèopportunités
PROJECT: 3955 Kelly Farm Drive, Ottawa, Ontario
JOB#: 100441.001
LOCATION: Refer to Borehole and Monitoring Well Location Plan, Figure A1

SHEET: 1 OF 1
DATUM: CGVD28
BORING DATE: Mar 15 2021

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	SOIL PROFILE: STRATA PLOT	SOIL PROFILE: ELEV. / DEPTH (m)	SAMPLE DATA: NUMBER	SAMPLE DATA: TYPE	SAMPLE DATA: RECOVERY (mm)	SAMPLE DATA: BLOWS/0.3m	SAMPLE DATA: LABORATORY ANALYSES	COMBUSTIBLE VAPOUR CONCENTRATION (ppm)	ODOUR	TPH (mg/kg)	MONITORING WELL INSTALLATION AND NOTES
		Ground Surface		95.38									
0		Brown SANDY SILT/SANDY SILT with gravel (fill material)			1	SL	381		PHC F1-F4/BTEX, PAHs, M&I	Hex: 0 IBL: 2	None		Backfilled with bentonite
1					2	SL	584			Hex: 0 IBL: 2	None		
				93.86									
		End of Borehole		1.52									

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

ENV - BOREHOLE LOG BOREHOLE LOG- KELLY FARM DRIVE- 100441.001- MARCH 2021.GPJ GEMTEC 2018.GDT 31/3/21

RECORD OF BOREHOLE 21-8

CLIENT: CEPEO Créateur Dèopportunités
PROJECT: 3955 Kelly Farm Drive, Ottawa, Ontario
JOB#: 100441.001
LOCATION: Refer to Borehole and Monitoring Well Location Plan, Figure A1

SHEET: 1 OF 1
DATUM: CGVD28
BORING DATE: Mar 5 2021

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	SOIL PROFILE: STRATA PLOT	SOIL PROFILE: ELEV. / DEPTH (m)	SAMPLE DATA: NUMBER	SAMPLE DATA: TYPE	SAMPLE DATA: RECOVERY (mm)	SAMPLE DATA: BLOWS/0.3m	SAMPLE DATA: LABORATORY ANALYSES	COMBUSTIBLE VAPOUR CONCENTRATION (ppm)	ODOUR	TPH (mg/kg)	MONITORING WELL INSTALLATION AND NOTES
		Ground Surface		95.12									
0		Brown SANDY SILT (fill material)			1	SL	457			Hex: 0 IBL: 1	None		Backfilled with bentonite
		Grey CLAY AND SILT (fill material)		0.45	2	SL	396		PHC F1-F4/BTEX, PAHs, M&I, OCP	Hex: 5 IBL: 1	None		
1		Brown SAND AND GRAVEL with red brick (fill material)		0.85 94.06	3	SL	178		PHC F1-F4/VOCs, PAHs, M&I		None		
		End of Borehole		1.06									

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

ENV - BOREHOLE LOG BOREHOLE LOG- KELLY FARM DRIVE- 100441.001- MARCH 2021.GPJ GEMTEC 2018.GDT 31/3/21

APPENDIX C

Soil and Groundwater Analytical Data Tables

TABLE C.1
SOIL ANALYTICAL RESULTS
Phase Two Environmental Site Assessment
3955 Kelly Farm Drive
Ottawa, Ontario

Parameter	Units	MDL	MECP Table 2 RPI SCS[1]	Sample ID: BH-21-1 SA-2	BH21-2 SA-1	BH21-3 SA-1	BH21-4 SA-1	BH21-4 SA-101[2]	BH21-4 SA-6	BH21-4 SA-106[2]	BH21-5 SA-1	BH21-5 SA-101[2]	BH21-6 SA-1	BH21-6 SA-4	BH21-7 SA-1	BH21-8 SA-2	BH21-8 SA-3
				Laboratory ID: 2111041-01	2112125-01	2111041-02	2112125-03	2112125-05	2112125-04	2112125-04	2111041-03	2111041-04	2111041-05	2111041-06	2112125-02	2111041-07	2111041-08
				Depth (mbgs): 0.76 – 1.52	0.00 – 0.91	0.00 – 0.69	0.00 – 0.91	0.00 – 0.91	3.81 – 4.57	3.81 – 4.57	0.00 – 0.77	0.00 – 0.77	0.00 – 0.76	2.43 – 2.73	0.00 – 0.91	0.45 – 0.85	0.85 – 1.06
				Date Sampled (dd/mm/yyyy): 5/3/2021	03/15/2021	5/3/2021	03/15/2021	03/15/2021	03/15/2021	03/15/2021	5/3/2021	5/3/2021	5/3/2021	5/3/2021	03/15/2021	5/3/2021	5/3/2021
Physical Characteristics																	
% Solids	% by Wt.	0.1	NS	74.9	91	88.4	82.5	83.7	76	N/A	78.6	71.9	66.3	78.7	74.6	80.7	92.5
General Inorganics																	
SAR	N/A	0.01	5	0.81	1.09	1.05	1.39	1.15	0.36	N/A	0.54	0.55	0.61	0.46	0.61	1.04	1.88
Conductivity	uS/cm	5	700	275	576	561	563	564	162	N/A	359	455	302	188	306	548	**2560**
Cyanide, free	ug/g dry	0.03	0.051	ND (0.03)	ND (0.03)	ND (0.03)	ND (0.03)	ND (0.03)	ND (0.03)	N/A	ND (0.03)	ND (0.03)	ND (0.03)	ND (0.03)	ND (0.03)	ND (0.03)	ND (0.03)
pH	pH Units	0.05	5 to 9	7.18	7.62	7.3	7.53	7.59	7.86	N/A	7.27	7.28	7.25	7.26	7.42	7.32	7.55
Metals																	
Boron, available	ug/g dry	0.5	1.5	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	N/A	0.6	ND (0.5)	0.6	ND (0.5)	ND (0.5)	ND (0.5)	0.6
Chromium (VI)	ug/g dry	0.2	8	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	N/A	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	0.2	ND (0.2)
Mercury	ug/g dry	0.1	0.27	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	N/A	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Antimony	ug/g dry	1	7.5	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	N/A	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	1.1
Arsenic	ug/g dry	1	18	2.4	4.3	3.9	2.6	3	3.2	N/A	3	3.1	2.8	3.9	2.9	2.6	5.3
Barium	ug/g dry	1	390	247	144	168	127	113	110	N/A	173	171	190	199	162	229	180
Beryllium	ug/g dry	0.5	4	0.7	ND (0.5)	0.6	ND (0.5)	ND (0.5)	ND (0.5)	N/A	0.7	0.6	0.7	0.7	0.6	0.5	ND (0.5)
Boron	ug/g dry	5	120	5.5	7.7	7.7	ND (5.0)	5.4	5.5	N/A	7.4	7	7.5	6.5	6.9	ND (5.0)	10.6
Cadmium	ug/g dry	0.5	1.2	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	N/A	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Chromium	ug/g dry	5	160	86.4	30.9	39.1	41.8	29.7	21.8	N/A	46.6	42.6	50.7	71.4	41.9	47.4	19.9
Cobalt	ug/g dry	1	22	16.3	8.6	9.4	9.5	7.9	7.8	N/A	9.8	9.2	10.3	14.6	9.4	9.3	7.6
Copper	ug/g dry	5	140	42.4	18.7	19.8	20.8	16.8	21.5	N/A	22.7	20.6	21.2	33.4	21.6	22.7	16.8
Lead	ug/g dry	1	120	6.3	8.7	10.1	15.4	10.7	5.4	N/A	8.1	7.1	8.3	6.5	7.9	4.3	23.5
Molybdenum	ug/g dry	1	6.9	ND (1.0)	1.8	1.7	1.1	1.6	1.3	N/A	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	1.1	ND (1.0)	3.7
Nickel	ug/g dry	5	100	47.2	19.9	23.4	24.4	19.6	17.5	N/A	23.6	22.2	25.3	37.6	22.2	26	18.3
Selenium	ug/g dry	1	2.4	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	N/A	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Silver	ug/g dry	0.3	20	ND (0.3)	ND (0.3)	ND (0.3)	ND (0.3)	ND (0.3)	ND (0.3)	N/A	ND (0.3)	ND (0.3)	ND (0.3)	ND (0.3)	ND (0.3)	ND (0.3)	ND (0.3)
Thallium	ug/g dry	1	1	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	N/A	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Uranium	ug/g dry	1	23	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	N/A	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Vanadium	ug/g dry	10	86	69	34.3	39.8	43.1	36.1	34.7	N/A	48.3	46.7	50.1	71.7	44.9	48.8	23.6
Zinc	ug/g dry	20	340	82.1	51.8	57.6	51.5	41.2	33.1	N/A	65	56	64.3	71.1	57.7	46.3	40.2
Volatile Organic Compounds																	
Acetone	ug/g dry	0.5	16	ND (0.50)	N/A	N/A	ND (0.50)	ND (0.50)	ND (0.50)	N/A	N/A	N/A	ND (0.50)	ND (0.50)	N/A	N/A	ND (0.50)
Benzene	ug/g dry	0.02	0.21	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	N/A	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)
Bromodichloromethane	ug/g dry	0.05	1.5	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	N/A	N/A	N/A	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)
Bromoform	ug/g dry	0.05	0.27	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	N/A	N/A	N/A	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)
Bromomethane	ug/g dry	0.05	0.05	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	N/A	N/A	N/A	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)
Carbon Tetrachloride	ug/g dry	0.05	0.05	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	N/A	N/A	N/A	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)
Chlorobenzene	ug/g dry	0.05	2.4	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	N/A	N/A	N/A	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)
Chloroform	ug/g dry	0.05	0.05	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	N/A	N/A	N/A	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)
Dibromochloromethane	ug/g dry	0.05	2.3	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	N/A	N/A	N/A	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)
Dichlorodifluoromethane	ug/g dry	0.05	16	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	N/A	N/A	N/A	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)
1,2-Dichlorobenzene	ug/g dry	0.05	1.2	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	N/A	N/A	N/A	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)
1,3-Dichlorobenzene	ug/g dry	0.05	4.8	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	N/A	N/A	N/A	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)
1,4-Dichlorobenzene	ug/g dry	0.05	0.083	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	N/A	N/A	N/A	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)
1,1-Dichloroethane	ug/g dry	0.05	0.47	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	N/A	N/A	N/A	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)
1,2-Dichloroethane	ug/g dry	0.05	0.05	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	N/A	N/A	N/A	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)
1,1-Dichloroethylene	ug/g dry	0.05	0.05	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	N/A	N/A	N/A	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)
cis-1,2-Dichloroethylene	ug/g dry	0.05	1.9	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	N/A	N/A	N/A	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)
trans-1,2-Dichloroethylene	ug/g dry	0.05	0.084	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	N/A	N/A	N/A	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)
1,2-Dichloropropane	ug/g dry	0.05	0.05	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	N/A	N/A	N/A	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)
cis-1,3-Dichloropropylene	ug/g dry	0.05	NS	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	N/A	N/A	N/A	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)
trans-1,3-Dichloropropylene	ug/g dry	0.05	NS	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	N/A	N/A	N/A	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)
1,3-Dichloropropene, total	ug/g dry	0.05	0.05	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	N/A	N/A	N/A	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)

TABLE C1 - CONTINUED
SOIL ANALYTICAL RESULTS
Phase II Environmental Site Assessment
3955 Kelly Farm Drive
Ottawa, Ontario

Parameter	Units	MDL	MECP Table 2 RPI SCS[1]	Sample ID: BH-21-1 SA-2	BH21-2 SA-1	BH21-3 SA-1	BH21-4 SA-1	BH21-4 SA-101[2]	BH21-4 SA-6	BH21-4 SA-106[2]	BH21-5 SA-1	BH21-5 SA-101[2]	BH21-6 SA-1	BH21-6 SA-4	BH21-7 SA-1	BH21-8 SA-2	BH21-8 SA-3
				Laboratory ID: 2111041-01	2112125-01	2111041-02	2112125-03	2112125-05	2112125-04	2112125-04	2111041-03	2111041-04	2111041-05	2111041-06	2112125-02	2111041-07	2111041-08
				Depth (mbgs): 0.76 – 1.52	0.00 – 0.91	0.00 – 0.69	0.00 – 0.91	0.00 – 0.91	3.81 – 4.57	3.81 – 4.57	0.00 – 0.77	0.00 – 0.77	0.00 – 0.76	2.43 – 2.73	0.00 – 0.91	0.45 – 0.85	0.85 – 1.06
				Date Sampled (dd/mm/yyyy): 5/3/2021	03/15/2021	5/3/2021	03/15/2021	03/15/2021	03/15/2021	03/15/2021	5/3/2021	5/3/2021	5/3/2021	5/3/2021	03/15/2021	5/3/2021	5/3/2021
Ethylbenzene	ug/g dry	0.05	1.1	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Ethylene dibromide	ug/g dry	0.05	0.05	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	N/A	N/A	N/A	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)
Hexane	ug/g dry	0.05	2.8	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	N/A	N/A	N/A	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)
Methyl Ethyl Ketone	ug/g dry	0.5	16	ND (0.50)	N/A	N/A	ND (0.50)	ND (0.50)	ND (0.50)	N/A	N/A	N/A	ND (0.50)	ND (0.50)	N/A	N/A	ND (0.50)
Methyl Isobutyl Ketone	ug/g dry	0.5	1.7	ND (0.50)	N/A	N/A	ND (0.50)	ND (0.50)	ND (0.50)	N/A	N/A	N/A	ND (0.50)	ND (0.50)	N/A	N/A	ND (0.50)
Methyl tert-butyl ether	ug/g dry	0.05	0.75	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	N/A	N/A	N/A	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)
Methylene Chloride	ug/g dry	0.05	0.1	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	N/A	N/A	N/A	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)
Styrene	ug/g dry	0.05	0.7	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	N/A	N/A	N/A	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)
1,1,1,2-Tetrachloroethane	ug/g dry	0.05	0.058	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	N/A	N/A	N/A	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)
1,1,2,2-Tetrachloroethane	ug/g dry	0.05	0.05	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	N/A	N/A	N/A	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)
Tetrachloroethylene	ug/g dry	0.05	0.28	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	N/A	N/A	N/A	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)
Toluene	ug/g dry	0.05	2.3	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
1,1,1-Trichloroethane	ug/g dry	0.05	0.38	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	N/A	N/A	N/A	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)
1,1,2-Trichloroethane	ug/g dry	0.05	0.05	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	N/A	N/A	N/A	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)
Trichloroethylene	ug/g dry	0.05	0.061	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	N/A	N/A	N/A	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)
Trichlorofluoromethane	ug/g dry	0.05	4	ND (0.05)	N/A	N/A	ND (0.05)	ND (0.05)	ND (0.05)	N/A	N/A	N/A	ND (0.05)	ND (0.05)	N/A	N/A	ND (0.05)
Vinyl Chloride	ug/g dry	0.02	0.02	ND (0.02)	N/A	N/A	ND (0.02)	ND (0.02)	ND (0.02)	N/A	N/A	N/A	ND (0.02)	ND (0.02)	N/A	N/A	ND (0.02)
m/p-Xylene	ug/g dry	0.05	NS	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	0.37	ND (0.05)	N/A	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
o-Xylene	ug/g dry	0.05	NS	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	0.09	ND (0.05)	N/A	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Xylenes, total	ug/g dry	0.05	3.1	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	0.46	ND (0.05)	N/A	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Petroleum Hydrocarbons																	
F1 PHCs (C6-C10)	ug/g dry	7	55	ND (7)	ND (7)	ND (7)	ND (7)	ND (7)	ND (7)	N/A	ND (7)	ND (7)	ND (7)	ND (7)	ND (7)	ND (7)	ND (7)
F2 PHCs (C10-C16)	ug/g dry	4	98	ND (4)	ND (4)	ND (4)	ND (4)	8	ND (4)	N/A	ND (4)	ND (4)	ND (4)	ND (4)	ND (4)	ND (4)	ND (40)
F3 PHCs (C16-C34)	ug/g dry	8	300	ND (8)	ND (8)	ND (8)	ND (8)	9	ND (8)	N/A	ND (8)	ND (8)	ND (8)	ND (8)	ND (8)	ND (8)	83
F4 PHCs (C34-C50)	ug/g dry	6	2800	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)	N/A	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)	ND (6)	183
Polycyclic Aromatic Hydrocarbons																	
Acenaphthene	ug/g dry	0.02	7.9	N/A	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	N/A	N/A	ND (0.02)	ND (0.02)	ND (0.02)	N/A	ND (0.02)	ND (0.02)	ND (0.02)
Acenaphthylene	ug/g dry	0.02	0.15	N/A	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	N/A	N/A	ND (0.02)	ND (0.02)	ND (0.02)	N/A	ND (0.02)	ND (0.02)	ND (0.02)
Anthracene	ug/g dry	0.02	0.67	N/A	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	N/A	N/A	ND (0.02)	ND (0.02)	ND (0.02)	N/A	ND (0.02)	ND (0.02)	0.03
Benzo[a]anthracene	ug/g dry	0.02	0.5	N/A	ND (0.02)	ND (0.02)	0.02	ND (0.02)	N/A	N/A	ND (0.02)	ND (0.02)	ND (0.02)	N/A	ND (0.02)	ND (0.02)	0.06
Benzo[a]pyrene	ug/g dry	0.02	0.3	N/A	ND (0.02)	ND (0.02)	0.02	ND (0.02)	N/A	N/A	ND (0.02)	ND (0.02)	ND (0.02)	N/A	ND (0.02)	ND (0.02)	0.06
Benzo[b]fluoranthene	ug/g dry	0.02	0.78	N/A	ND (0.02)	ND (0.02)	0.02	ND (0.02)	N/A	N/A	ND (0.02)	ND (0.02)	ND (0.02)	N/A	ND (0.02)	ND (0.02)	0.06
Benzo[g,h,i]perylene	ug/g dry	0.02	6.6	N/A	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	N/A	N/A	ND (0.02)	ND (0.02)	ND (0.02)	N/A	ND (0.02)	ND (0.02)	0.04
Benzo[k]fluoranthene	ug/g dry	0.02	0.78	N/A	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	N/A	N/A	ND (0.02)	ND (0.02)	ND (0.02)	N/A	ND (0.02)	ND (0.02)	0.03
Chrysene	ug/g dry	0.02	7	N/A	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	N/A	N/A	ND (0.02)	ND (0.02)	ND (0.02)	N/A	ND (0.02)	ND (0.02)	0.06
Dibenzo[a,h]anthracene	ug/g dry	0.02	0.1	N/A	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	N/A	N/A	ND (0.02)	ND (0.02)	ND (0.02)	N/A	ND (0.02)	ND (0.02)	ND (0.02)
Fluoranthene	ug/g dry	0.02	0.69	N/A	ND (0.02)	0.03	0.05	ND (0.02)	N/A	N/A	ND (0.02)	ND (0.02)	ND (0.02)	N/A	ND (0.02)	ND (0.02)	0.12
Fluorene	ug/g dry	0.02	62	N/A	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	N/A	N/A	ND (0.02)	ND (0.02)	ND (0.02)	N/A	ND (0.02)	ND (0.02)	ND (0.02)
Indeno[1,2,3-cd]pyrene	ug/g dry	0.02	0.38	N/A	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	N/A	N/A	ND (0.02)	ND (0.02)	ND (0.02)	N/A	ND (0.02)	ND (0.02)	0.03
1-Methylnaphthalene	ug/g dry	0.02	0.99	N/A	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	N/A	N/A	ND (0.02)	ND (0.02)	ND (0.02)	N/A	ND (0.02)	ND (0.02)	ND (0.02)
2-Methylnaphthalene	ug/g dry	0.02	0.99	N/A	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	N/A	N/A	ND (0.02)	ND (0.02)	ND (0.02)	N/A	ND (0.02)	ND (0.02)	ND (0.02)
Methylnaphthalene (1&2)	ug/g dry	0.04	0.99	N/A	ND (0.04)	ND (0.04)	ND (0.04)	ND (0.04)	N/A	N/A	ND (0.04)	ND (0.04)	ND (0.04)	N/A	ND (0.04)	ND (0.04)	ND (0.04)
Naphthalene	ug/g dry	0.01	0.6	N/A	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	N/A	N/A	ND (0.01)	ND (0.01)	ND (0.01)	N/A	ND (0.01)	ND (0.01)	ND (0.01)
Phenanthrene	ug/g dry	0.02	6.2	N/A	ND (0.02)	ND (0.02)	0.03	ND (0.02)	N/A	N/A	ND (0.02)	ND (0.02)	ND (0.02)	N/A	ND (0.02)	ND (0.02)	0.09
Pyrene	ug/g dry	0.02	78	N/A	ND (0.02)	0.03	0.05	ND (0.02)	N/A	N/A	ND (0.02)	ND (0.02)	ND (0.02)	N/A	ND (0.02)	ND (0.02)	0.11

TABLE C1 - CONTINUED
SOIL ANALYTICAL RESULTS
Phase II Environmental Site Assessment
3955 Kelly Farm Drive
Ottawa, Ontario

Parameter	Units	MDL	MECP Table 2 RPI SCS[1]	Sample ID: BH-21-1 SA-2 / Laboratory ID: 2111041-01 / Depth (mbgs): 0.76 – 1.52 / Date Sampled (dd/mm/yyyy): 5/3/2021	BH21-2 SA-1 / 2112125-01 / 0.00 – 0.91 / 03/15/2021	BH21-3 SA-1 / 2111041-02 / 0.00 – 0.69 / 5/3/2021	BH21-4 SA-1 / 2112125-03 / 0.00 – 0.91 / 03/15/2021	BH21-4 SA-101[2] / 2112125-05 / 0.00 – 0.91 / 03/15/2021	BH21-4 SA-6 / 2112125-04 / 3.81 – 4.57 / 03/15/2021	BH21-4 SA-106[2] / 2112125-04 / 3.81 – 4.57 / 03/15/2021	BH21-5 SA-1 / 2111041-03 / 0.00 – 0.77 / 5/3/2021	BH21-5 SA-101[2] / 2111041-04 / 0.00 – 0.77 / 5/3/2021	BH21-6 SA-1 / 2111041-05 / 0.00 – 0.76 / 5/3/2021	BH21-6 SA-4 / 2111041-06 / 2.43 – 2.73 / 5/3/2021	BH21-7 SA-1 / 2112125-02 / 0.00 – 0.91 / 03/15/2021	BH21-8 SA-2 / 2111041-07 / 0.45 – 0.85 / 5/3/2021	BH21-8 SA-3 / 2111041-08 / 0.85 – 1.06 / 5/3/2021
Organochlorine Pesticides																	
2,4'-DDD	µg/g dry	0.01	NS	ND(0.009)	N/A	N/A	ND(0.009)	N/A	ND(0.01)	ND(0.01)	N/A	N/A	ND(0.009)	ND(0.01)	N/A	ND(0.01)	N/A
2,4'-DDE	µg/g dry	0.01	NS	ND(0.009)	N/A	N/A	ND(0.009)	N/A	ND(0.01)	ND(0.01)	N/A	N/A	ND(0.009)	ND(0.01)	N/A	ND(0.01)	N/A
2,4'-DDT	µg/g dry	0.01	NS	ND(0.009)	N/A	N/A	ND(0.009)	N/A	ND(0.01)	ND(0.01)	N/A	N/A	ND(0.009)	ND(0.01)	N/A	ND(0.01)	N/A
4,4'-DDD	µg/g dry	0.01	NS	ND(0.009)	N/A	N/A	ND(0.009)	N/A	ND(0.01)	ND(0.01)	N/A	N/A	ND(0.009)	ND(0.01)	N/A	ND(0.01)	N/A
4,4'-DDE	µg/g dry	0.01	NS	ND(0.009)	N/A	N/A	ND(0.009)	N/A	ND(0.01)	ND(0.01)	N/A	N/A	ND(0.009)	ND(0.01)	N/A	ND(0.01)	N/A
4,4'-DDT	µg/g dry	0.01	NS	ND(0.009)	N/A	N/A	ND(0.009)	N/A	ND(0.01)	ND(0.01)	N/A	N/A	ND(0.009)	ND(0.01)	N/A	ND(0.01)	N/A
Aldrin	µg/g dry	0.01	0.05	ND(0.009)	N/A	N/A	ND(0.009)	N/A	ND(0.01)	ND(0.01)	N/A	N/A	ND(0.009)	ND(0.01)	N/A	ND(0.01)	N/A
DDD (Total)	µg/g dry	0.01	3.3	ND(0.009)	N/A	N/A	ND(0.009)	N/A	ND(0.01)	ND(0.01)	N/A	N/A	ND(0.009)	ND(0.01)	N/A	ND(0.01)	N/A
DDE (Total)	µg/g dry	0.01	0.26	ND(0.009)	N/A	N/A	ND(0.009)	N/A	ND(0.01)	ND(0.01)	N/A	N/A	ND(0.009)	ND(0.01)	N/A	ND(0.01)	N/A
DDT (Total)	µg/g dry	0.01	1.4	ND(0.009)	N/A	N/A	ND(0.009)	N/A	ND(0.01)	ND(0.01)	N/A	N/A	ND(0.009)	ND(0.01)	N/A	ND(0.01)	N/A
Decachlorobiphenyl (Surr.)	% Rec	-	NS	124	N/A	N/A	129	N/A	122	127	N/A	N/A	136	132	N/A	113	N/A
Dieldrin	µg/g dry	0.01	0.05	ND(0.009)	N/A	N/A	ND(0.009)	N/A	ND(0.01)	ND(0.01)	N/A	N/A	ND(0.009)	ND(0.01)	N/A	ND(0.01)	N/A
Endosulfan I	µg/g dry	0.01	NS	ND(0.009)	N/A	N/A	ND(0.009)	N/A	ND(0.01)	ND(0.01)	N/A	N/A	ND(0.009)	ND(0.01)	N/A	ND(0.01)	N/A
Endosulfan I + II	µg/g dry	0.01	0.04	ND(0.009)	N/A	N/A	ND(0.009)	N/A	ND(0.01)	ND(0.01)	N/A	N/A	ND(0.009)	ND(0.01)	N/A	ND(0.01)	N/A
Endosulfan II	µg/g dry	0.01	NS	ND(0.009)	N/A	N/A	ND(0.009)	N/A	ND(0.01)	ND(0.01)	N/A	N/A	ND(0.009)	ND(0.01)	N/A	ND(0.01)	N/A
Endosulfan sulfate	µg/g dry	0.01	NS	ND(0.009)	N/A	N/A	ND(0.009)	N/A	ND(0.01)	ND(0.01)	N/A	N/A	ND(0.009)	ND(0.01)	N/A	ND(0.01)	N/A
Endrin	µg/g dry	0.01	0.04	ND(0.009)	N/A	N/A	ND(0.009)	N/A	ND(0.01)	ND(0.01)	N/A	N/A	ND(0.009)	ND(0.01)	N/A	ND(0.01)	N/A
Endrin aldehyde	µg/g dry	0.01	NS	ND(0.009)	N/A	N/A	ND(0.009)	N/A	ND(0.01)	ND(0.01)	N/A	N/A	ND(0.009)	ND(0.01)	N/A	ND(0.01)	N/A
Heptachlor	µg/g dry	0.01	0.15	ND(0.009)	N/A	N/A	ND(0.009)	N/A	ND(0.01)	ND(0.01)	N/A	N/A	ND(0.009)	ND(0.01)	N/A	ND(0.01)	N/A
Heptachlor epoxide	µg/g dry	0.01	0.05	ND(0.009)	N/A	N/A	ND(0.009)	N/A	ND(0.01)	ND(0.01)	N/A	N/A	ND(0.009)	ND(0.01)	N/A	ND(0.01)	N/A
Hexachlorobenzene	µg/g dry	0.01	0.52	ND(0.009)	N/A	N/A	ND(0.009)	N/A	ND(0.01)	ND(0.01)	N/A	N/A	ND(0.009)	ND(0.01)	N/A	ND(0.01)	N/A
Hexachlorobutadiene	µg/g dry	0.01	0.012	ND(0.009)	N/A	N/A	ND(0.009)	N/A	ND(0.01)	ND(0.01)	N/A	N/A	ND(0.009)	ND(0.01)	N/A	ND(0.01)	N/A
Hexachloroethane	µg/g dry	0.01	0.089	ND(0.009)	N/A	N/A	ND(0.009)	N/A	ND(0.01)	ND(0.01)	N/A	N/A	ND(0.009)	ND(0.01)	N/A	ND(0.01)	N/A
Methoxychlor	µg/g dry	0.01	0.13	ND(0.009)	N/A	N/A	ND(0.009)	N/A	ND(0.01)	ND(0.01)	N/A	N/A	ND(0.009)	ND(0.01)	N/A	ND(0.01)	N/A
Mirex	µg/g dry	0.01	NS	ND(0.009)	N/A	N/A	ND(0.009)	N/A	ND(0.01)	ND(0.01)	N/A	N/A	ND(0.009)	ND(0.01)	N/A	ND(0.01)	N/A
Oxychlordane	µg/g dry	0.01	NS	ND(0.009)	N/A	N/A	ND(0.009)	N/A	ND(0.01)	ND(0.01)	N/A	N/A	ND(0.009)	ND(0.01)	N/A	ND(0.01)	N/A
ß-BHC	µg/g dry	0.01	Ns	ND(0.009)	N/A	N/A	ND(0.009)	N/A	ND(0.01)	ND(0.01)	N/A	N/A	ND(0.009)	ND(0.01)	N/A	ND(0.01)	N/A
α - Chlordane	µg/g dry	0.01	0.05	ND(0.009)	N/A	N/A	ND(0.009)	N/A	ND(0.01)	ND(0.01)	N/A	N/A	ND(0.009)	ND(0.01)	N/A	ND(0.01)	N/A
α + γ -Chlordane	µg/g dry	0.01	0.05	ND(0.009)	N/A	N/A	ND(0.009)	N/A	ND(0.01)	ND(0.01)	N/A	N/A	ND(0.009)	ND(0.01)	N/A	ND(0.01)	N/A
α-BHC	µg/g dry	0.01	NS	ND(0.009)	N/A	N/A	ND(0.009)	N/A	ND(0.01)	ND(0.01)	N/A	N/A	ND(0.009)	ND(0.01)	N/A	ND(0.01)	N/A
γ - Chlordane	µg/g dry	0.01	0.05	ND(0.009)	N/A	N/A	ND(0.009)	N/A	ND(0.01)	ND(0.01)	N/A	N/A	ND(0.009)	ND(0.01)	N/A	ND(0.01)	N/A
γ-BHC (Lindane)	µg/g dry	0.01	NS	ND(0.009)	N/A	N/A	ND(0.009)	N/A	ND(0.01)	ND(0.01)	N/A	N/A	ND(0.009)	ND(0.01)	N/A	ND(0.01)	N/A
δ-BHC	µg/g dry	0.01	NS	ND(0.009)	N/A	N/A	ND(0.009)	N/A	ND(0.01)	ND(0.01)	N/A	N/A	ND(0.009)	ND(0.01)	N/A	ND(0.01)	N/A

Notes:
'MDL': Method Detection Limit
'N/A': Not Analyzed
'ND' : Non Detect
'NS ' : No Standard / Guideline Established
'mbgs' : metres below ground surface
1 - MECP Table 2 RPI SCS: 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 (SCS) in a Potable Ground Water Condition, residential/parkland/institutional (RPI) land use, coarse textured soils.
2 - Soil sample BH21-3 SA-10X is a duplicate of BH21-3 SAX
Bolded Exceeds MECP Table 2 RPI SCS

TABLE C.2
SOIL ANALYTICAL RESULTS
Phase Two Environmental Site Assessment
3955 Kelly Farm Drive
Ottawa, Ontario

			Sample ID:	BH21-8 SA3 A	BH21-8 SA4 A	BH21-8 SA3 B	BH21-8 SA3 C	BH21-8 SA3 D	BH21-8 SA3 E	BH21-8 SA3 F	BH21-8 SA3 G	BH21-8 North	BH21-8 10 North[2]	BH21-8 South	BH21-8 East	BH21-8 West
			Laboratory ID:	6232019	6232023	6232018	6232024	6232022	6232021	6232017	6232015	6232020	6232008	6232016	6232013	6232014
			Depth (mbgs):	0.8 - 1.0	1.0 - 1.5	0.8 - 1.0	0.8 - 1.0	0.8 - 1.0	0.8 - 1.0	0.8 - 1.0	0.8 - 1.0	0.8 - 1.0	0.8 - 1.0	0.8 - 1.0	0.8 - 1.0	0.8 - 1.0
			Date Sampled (dd/mm/yyyy):	11/10/2021	11/10/2021	11/10/2021	11/10/2021	11/10/2021	11/10/2021	11/10/2021	11/10/2021	11/10/2021	11/10/2021	11/10/2021	11/10/2021	11/10/2021
Parameter	**Units**	**MDL**	**MECP Table 2 RPI SCS[1]**													
General Inorganics																
SAR	N/A	0.01	5	0.208	0.273	0.229	0.243	0.259	0.24	0.212	0.244	0.275	0.465	0.304	0.292	0.542
Conductivity	uS/cm	5	700	631	642	401	**937**	356	526	**917**	526	**873**	**762**	**834**	298	**892**

Notes:
'MDL': Method Detection Limit
'N/A': Not Analyzed
'ND' : Non Detect
'NS ' : No Standard / Guideline Established
'mbgs' : metres below ground surface
1 - MECP Table 2 RPI SCS: 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 (SCS) in a Potable Ground Water Condition, residential/parkland/institutional (RPI) land use, coarse textured soils.
2 - Soil sample BH21-3 SA-10X is a duplicate of BH21-3 SAX
Bolded Exceeds MECP Table 2 RPI SCS for coarse textured soils

TABLE C.3
GROUNDWATER ANALYTICAL RESULTS
Phase Two Environmental Site Assessment
3955 Kelly Farm Drive
Ottawa, Ontario

			Sample ID:	MW21-1	MW21-4	MW21-104	MW21-6	Trip Blank
			Laboratory ID:	2112364-01	2112364-02	2112364-04	2112364-03	2112364-05
			Screened Interval (mbgs):	0.76 - 3.81	1.52 - 4.57	1.52 - 4.57	0.61 - 3.65	-
			Date Sampled (dd/mm/yyyy):	03/17/2021	03/17/2021	03/17/2021	03/17/2021	03/17/2021
Parameter	**Units**	**MDL**	**MECP Table 2 SCS[1]**					
General Inorganics								
Cyanide, free	ug/L	2	66	ND (2)	ND (2)	ND (2)	ND (2)	N/A
pH	pH Units	0.1	5 to 9	7.8	7.6	7.7	7.9	N/A
Anions								
Chloride	mg/L	1	790	130	60	52	67	N/A
Metals								
Mercury	ug/L	0.1	0.29	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	N/A
Antimony	ug/L	0.5	6	0.6	ND (0.5)	ND (0.5)	ND (0.5)	N/A
Arsenic	ug/L	1	25	2	ND (1)	ND (1)	3	N/A
Barium	ug/L	1	1000	321	113	125	507	N/A
Beryllium	ug/L	0.5	4	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	N/A
Boron	ug/L	10	5000	39	28	24	34	N/A
Cadmium	ug/L	0.1	2.7	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	N/A
Chromium	ug/L	1	50	ND (1)	ND (1)	ND (1)	ND (1)	N/A
Chromium (VI)	ug/L	10	25	ND (10)	ND (10)	ND (10)	ND (10)	N/A
Cobalt	ug/L	0.5	3.8	ND (0.5)	0.6	ND (0.5)	ND (0.5)	N/A
Copper	ug/L	0.5	87	0.6	2.4	1.9	1	N/A
Lead	ug/L	0.1	10	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	N/A
Molybdenum	ug/L	0.5	70	3.7	3.1	1.9	2.4	N/A
Nickel	ug/L	1	100	3	3	2	2	N/A
Selenium	ug/L	1	10	ND (1)	ND (1)	ND (1)	ND (1)	N/A
Silver	ug/L	0.1	1.5	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	N/A
Sodium	ug/L	200	490000	35100	31600	22200	13200	N/A
Thallium	ug/L	0.1	2	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	N/A
Uranium	ug/L	0.1	20	1.2	5.7	4.7	1.1	N/A
Vanadium	ug/L	0.5	6.2	ND (0.5)	0.9	1.1	1.1	N/A
Zinc	ug/L	5	1100	ND (5)	ND (5)	ND (5)	ND (5)	N/A
Volatile Organic Compounds								
Acetone	ug/L	5	2700	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
Benzene	ug/L	0.5	5	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromodichloromethane	ug/L	0.5	16	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromoform	ug/L	0.5	25	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromomethane	ug/L	0.5	0.89	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Carbon Tetrachloride	ug/L	0.2	0.79	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Chlorobenzene	ug/L	0.5	30	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Chloroform	ug/L	0.5	2.4	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Dibromochloromethane	ug/L	0.5	25	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Dichlorodifluoromethane	ug/L	1	590	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,2-Dichlorobenzene	ug/L	0.5	3	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,3-Dichlorobenzene	ug/L	0.5	59	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,4-Dichlorobenzene	ug/L	0.5	1	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1-Dichloroethane	ug/L	0.5	5	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,2-Dichloroethane	ug/L	0.5	1.6	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1-Dichloroethylene	ug/L	0.5	1.6	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
cis-1,2-Dichloroethylene	ug/L	0.5	1.6	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
trans-1,2-Dichloroethylene	ug/L	0.5	1.6	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,2-Dichloropropane	ug/L	0.5	5	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
cis-1,3-Dichloropropylene	ug/L	0.5	NS	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
trans-1,3-Dichloropropylene	ug/L	0.5	NS	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,3-Dichloropropene, total	ug/L	0.5	0.5	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Ethylbenzene	ug/L	0.5	2.4	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Ethylene dibromide (dibromoethane,	ug/L	0.2	0.2	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Hexane	ug/L	1	51	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Methyl Ethyl Ketone (2-Butanone)	ug/L	5	1800	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
Methyl Isobutyl Ketone	ug/L	5	640	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
Methyl tert-butyl ether	ug/L	2	15	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Methylene Chloride	ug/L	5	50	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
Styrene	ug/L	0.5	5.4	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,1,2-Tetrachloroethane	ug/L	0.5	1.1	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,2,2-Tetrachloroethane	ug/L	0.5	1	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Tetrachloroethylene	ug/L	0.5	1.6	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Toluene	ug/L	0.5	24	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,1-Trichloroethane	ug/L	0.5	200	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,2-Trichloroethane	ug/L	0.5	4.7	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Trichloroethylene	ug/L	0.5	1.6	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Trichlorofluoromethane	ug/L	1	150	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Vinyl Chloride	ug/L	0.5	0.5	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
m/p-Xylene	ug/L	0.5	NS	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
o-Xylene	ug/L	0.5	NS	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Xylenes, total	ug/L	0.5	300	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Petroleum Hydrocarbons								
F1 PHCs (C6-C10)	ug/L	25	750	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)
F2 PHCs (C10-C16)	ug/L	100	150	ND (100)	ND (100)	ND (100)	ND (100)	N/A
F3 PHCs (C16-C34)	ug/L	100	500	ND (100)	ND (100)	ND (100)	150	N/A
F4 PHCs (C34-C50)	ug/L	100	500	ND (100)	ND (100)	ND (100)	ND (100)	N/A
Semi-Volatile Organic Compounds								
Acenaphthene	ug/L	0.05	4.1	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A
Acenaphthylene	ug/L	0.05	1	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A
Anthracene	ug/L	0.01	2.4	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	N/A
Benzo[a]anthracene	ug/L	0.01	1	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	N/A
Benzo[a]pyrene	ug/L	0.01	0.01	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	N/A
Benzo[b]fluoranthene	ug/L	0.05	0.1	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A
Benzo[g,h,i]perylene	ug/L	0.05	0.2	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A
Benzo[k]fluoranthene	ug/L	0.05	0.1	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A
Chrysene	ug/L	0.05	0.1	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A
Dibenzo[a,h]anthracene	ug/L	0.05	0.2	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A
Fluoranthene	ug/L	0.01	0.41	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	N/A
Fluorene	ug/L	0.05	120	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A
Indeno[1,2,3-cd]pyrene	ug/L	0.05	0.2	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A
1-Methylnaphthalene	ug/L	0.05	3.2	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A
2-Methylnaphthalene	ug/L	0.05	3.2	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A
Methylnaphthalene (1&2)	ug/L	0.1	3.2	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	N/A
Naphthalene	ug/L	0.05	11	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A
Phenanthrene	ug/L	0.05	1	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	N/A
Pyrene	ug/L	0.01	4.1	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	N/A
OrganoChlorine Pesticides								
Aldrin	ug/L	0.01	0.35	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	N/A
alpha-Chlordane	ug/L	0.01	NS	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	N/A
gamma-Chlordane	ug/L	0.01	NS	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	N/A
Chlordane	ug/L	0.01	7	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	N/A
o,p-DDD	ug/L	0.01	NS	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	N/A
p,p-DDD	ug/L	0.01	NS	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	N/A
DDD	ug/L	0.01	10	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	N/A
o,p-DDE	ug/L	0.01	NS	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	N/A
p,p-DDE	ug/L	0.01	NS	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	N/A
DDE	ug/L	0.01	10	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	N/A
o,p-DDT	ug/L	0.01	NS	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	N/A
p,p-DDT	ug/L	0.01	NS	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	N/A
DDT	ug/L	0.01	2.8	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	N/A
Dieldrin	ug/L	0.01	0.35	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	N/A
Endosulfan I	ug/L	0.01	NS	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	N/A
Endosulfan II	ug/L	0.01	NS	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	N/A
Endosulfan I/II	ug/L	0.01	1.5	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	N/A
Endrin	ug/L	0.01	0.48	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	N/A
Heptachlor	ug/L	0.01	1.5	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	N/A
Heptachlor Epoxide	ug/L	0.01	0.048	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	N/A
Hexachlorobenzene	ug/L	0.01	1	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	N/A
Hexachlorobutadiene	ug/L	0.01	0.44	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	N/A
G-BHC (LINDANE)	ug/L	0.01	1.2	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	N/A
Hexachloroethane	ug/L	0.01	2.1	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	N/A
Methoxychlor	ug/L	0.01	6.5	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	N/A

Notes:
'MDL': Method Detection Limit
'N/A': Not Analyzed
'ND' : Non Detect
'NS ' : No Standard / Guideline Established
'mbgs' : metres below ground surface
1 - MECP Table 2 RPI: 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, All Types of Property Use.
2 - Groundwater sample MW21-104 is a duplicate of MW21-4

Bolded Exceeds MECP Table 2 SCS

APPENDIX D

Certificate of Analysis

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Certificate of Analysis

GEMTEC Consulting Engineers and Scientists Limited

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

Client PO:
Project: 100441.001
Custody: 130456

Report Date: 19-Mar-2021
Order Date: 5-Mar-2021

Revised Report

Order #: 2111041

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

Paracel ID	Client ID
2111041-01	BH-21-1 SA-2
2111041-02	BH21-3 SA-1
2111041-03	BH21-5 SA-1
2111041-04	BH21-5 SA-101
2111041-05	BH21-6 SA-1
2111041-06	BH21-6 SA-4
2111041-07	BH21-8 SA-2
2111041-08	BH20-8 SA-3

Approved By:

Mark Foto

Mark Foto, M.Sc.
Lab Supervisor

Certificate of Analysis

Report Date: 19-Mar-2021

Client: GEMTEC Consulting Engineers and Scientists Limited

Order Date: 5-Mar-2021

Client PO:

Project Description: 100441.001

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Boron, available	MOE (HWE), EPA 200.7 - ICP-OES	9-Mar-21	9-Mar-21
BTEX by P&T GC-MS	EPA 8260 - P&T GC-MS	9-Mar-21	10-Mar-21
Chromium, hexavalent - soil	MOE E3056 - Extraction, colourimetric	8-Mar-21	9-Mar-21
Conductivity	MOE E3138 - probe @25 °C, water ext	9-Mar-21	9-Mar-21
Cyanide, free	MOE E3015 - Auto Colour, water extraction	8-Mar-21	10-Mar-21
Mercury by CVAA	EPA 7471B - CVAA, digestion	9-Mar-21	10-Mar-21
pH, soil	EPA 150.1 - pH probe @ 25 °C, CaCl buffered ext.	8-Mar-21	9-Mar-21
PHC F1	CWS Tier 1 - P&T GC-FID	9-Mar-21	10-Mar-21
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	8-Mar-21	9-Mar-21
REG 153: Metals by ICP/MS, soil	EPA 6020 - Digestion - ICP-MS	9-Mar-21	9-Mar-21
REG 153: PAHs by GC-MS	EPA 8270 - GC-MS, extraction	8-Mar-21	9-Mar-21
REG 153: VOCs by P&T GC/MS	EPA 8260 - P&T GC-MS	9-Mar-21	10-Mar-21
SAR	Calculated	9-Mar-21	9-Mar-21
Solids, %	Gravimetric, calculation	8-Mar-21	9-Mar-21

Certificate of Analysis

Report Date: 19-Mar-2021

Client: GEMTEC Consulting Engineers and Scientists Limited

Order Date: 5-Mar-2021

Client PO:

Project Description: 100441.001

	Client ID:	BH-21-1 SA-2	BH21-3 SA-1	BH21-5 SA-1	BH21-5 SA-101
	Sample Date:	05-Mar-21 09:00	05-Mar-21 09:00	05-Mar-21 09:00	05-Mar-21 09:00
	Sample ID:	2111041-01	2111041-02	2111041-03	2111041-04
	MDL/Units	Soil	Soil	Soil	Soil
Physical Characteristics					
% Solids	0.1 % by Wt.	74.9	88.4	78.6	71.9
General Inorganics					
SAR	0.01 N/A	0.81	1.05	0.54	0.55
Conductivity	5 uS/cm	275	561	359	455
Cyanide, free	0.03 ug/g dry	<0.03	<0.03	<0.03	<0.03
pH	0.05 pH Units	7.18	7.30	7.27	7.28
Metals					
Antimony	1.0 ug/g dry	<1.0	<1.0	<1.0	<1.0
Arsenic	1.0 ug/g dry	2.4	3.9	3.0	3.1
Barium	1.0 ug/g dry	247	168	173	171
Beryllium	0.5 ug/g dry	0.7	0.6	0.7	0.6
Boron	5.0 ug/g dry	5.5	7.7	7.4	7.0
Boron, available	0.5 ug/g dry	<0.5	<0.5	0.6	<0.5
Cadmium	0.5 ug/g dry	<0.5	<0.5	<0.5	<0.5
Chromium	5.0 ug/g dry	86.4	39.1	46.6	42.6
Chromium (VI)	0.2 ug/g dry	<0.2	<0.2	<0.2	<0.2
Cobalt	1.0 ug/g dry	16.3	9.4	9.8	9.2
Copper	5.0 ug/g dry	42.4	19.8	22.7	20.6
Lead	1.0 ug/g dry	6.3	10.1	8.1	7.1
Mercury	0.1 ug/g dry	<0.1	<0.1	<0.1	<0.1
Molybdenum	1.0 ug/g dry	<1.0	1.7	<1.0	<1.0
Nickel	5.0 ug/g dry	47.2	23.4	23.6	22.2
Selenium	1.0 ug/g dry	<1.0	<1.0	<1.0	<1.0
Silver	0.3 ug/g dry	<0.3	<0.3	<0.3	<0.3
Thallium	1.0 ug/g dry	<1.0	<1.0	<1.0	<1.0
Uranium	1.0 ug/g dry	<1.0	<1.0	<1.0	<1.0
Vanadium	10.0 ug/g dry	69.0	39.8	48.3	46.7
Zinc	20.0 ug/g dry	82.1	57.6	65.0	56.0
Volatiles					
Acetone	0.50 ug/g dry	<0.50	-	-	-
Benzene	0.02 ug/g dry	<0.02	-	-	-
Bromodichloromethane	0.05 ug/g dry	<0.05	-	-	-
Bromoform	0.05 ug/g dry	<0.05	-	-	-
Bromomethane	0.05 ug/g dry	<0.05	-	-	-
Carbon Tetrachloride	0.05 ug/g dry	<0.05	-	-	-

Certificate of Analysis

Report Date: 19-Mar-2021

Client: GEMTEC Consulting Engineers and Scientists Limited

Order Date: 5-Mar-2021

Client PO:

Project Description: 100441.001

	Client ID:	BH-21-1 SA-2	BH21-3 SA-1	BH21-5 SA-1	BH21-5 SA-101
	Sample Date:	05-Mar-21 09:00	05-Mar-21 09:00	05-Mar-21 09:00	05-Mar-21 09:00
	Sample ID:	2111041-01	2111041-02	2111041-03	2111041-04
	MDL/Units	Soil	Soil	Soil	Soil
Chlorobenzene	0.05 ug/g dry	<0.05	-	-	-
Chloroform	0.05 ug/g dry	<0.05	-	-	-
Dibromochloromethane	0.05 ug/g dry	<0.05	-	-	-
Dichlorodifluoromethane	0.05 ug/g dry	<0.05	-	-	-
1,2-Dichlorobenzene	0.05 ug/g dry	<0.05	-	-	-
1,3-Dichlorobenzene	0.05 ug/g dry	<0.05	-	-	-
1,4-Dichlorobenzene	0.05 ug/g dry	<0.05	-	-	-
1,1-Dichloroethane	0.05 ug/g dry	<0.05	-	-	-
1,2-Dichloroethane	0.05 ug/g dry	<0.05	-	-	-
1,1-Dichloroethylene	0.05 ug/g dry	<0.05	-	-	-
cis-1,2-Dichloroethylene	0.05 ug/g dry	<0.05	-	-	-
trans-1,2-Dichloroethylene	0.05 ug/g dry	<0.05	-	-	-
1,2-Dichloropropane	0.05 ug/g dry	<0.05	-	-	-
cis-1,3-Dichloropropylene	0.05 ug/g dry	<0.05	-	-	-
trans-1,3-Dichloropropylene	0.05 ug/g dry	<0.05	-	-	-
1,3-Dichloropropene, total	0.05 ug/g dry	<0.05	-	-	-
Ethylbenzene	0.05 ug/g dry	<0.05	-	-	-
Ethylene dibromide (dibromoethane, 1,2-)	0.05 ug/g dry	<0.05	-	-	-
Hexane	0.05 ug/g dry	<0.05	-	-	-
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g dry	<0.50	-	-	-
Methyl Isobutyl Ketone	0.50 ug/g dry	<0.50	-	-	-
Methyl tert-butyl ether	0.05 ug/g dry	<0.05	-	-	-
Methylene Chloride	0.05 ug/g dry	<0.05	-	-	-
Styrene	0.05 ug/g dry	<0.05	-	-	-
1,1,1,2-Tetrachloroethane	0.05 ug/g dry	<0.05	-	-	-
1,1,2,2-Tetrachloroethane	0.05 ug/g dry	<0.05	-	-	-
Tetrachloroethylene	0.05 ug/g dry	<0.05	-	-	-
Toluene	0.05 ug/g dry	<0.05	-	-	-
1,1,1-Trichloroethane	0.05 ug/g dry	<0.05	-	-	-
1,1,2-Trichloroethane	0.05 ug/g dry	<0.05	-	-	-
Trichloroethylene	0.05 ug/g dry	<0.05	-	-	-
Trichlorofluoromethane	0.05 ug/g dry	<0.05	-	-	-
Vinyl chloride	0.02 ug/g dry	<0.02	-	-	-
m,p-Xylenes	0.05 ug/g dry	<0.05	-	-	-
o-Xylene	0.05 ug/g dry	<0.05	-	-	-

Certificate of Analysis

Report Date: 19-Mar-2021

Client: GEMTEC Consulting Engineers and Scientists Limited

Order Date: 5-Mar-2021

Client PO:

Project Description: 100441.001

	Client ID:	BH-21-1 SA-2	BH21-3 SA-1	BH21-5 SA-1	BH21-5 SA-101
	Sample Date:	05-Mar-21 09:00	05-Mar-21 09:00	05-Mar-21 09:00	05-Mar-21 09:00
	Sample ID:	2111041-01	2111041-02	2111041-03	2111041-04
	MDL/Units	Soil	Soil	Soil	Soil
Xylenes, total	0.05 ug/g dry	<0.05	-	-	-
4-Bromofluorobenzene	Surrogate	91.2%	-	-	-
Dibromofluoromethane	Surrogate	102%	-	-	-
Toluene-d8	Surrogate	112%	-	-	-
Benzene	0.02 ug/g dry	-	<0.02	<0.02	<0.02
Ethylbenzene	0.05 ug/g dry	-	<0.05	<0.05	<0.05
Toluene	0.05 ug/g dry	-	<0.05	<0.05	<0.05
m,p-Xylenes	0.05 ug/g dry	-	<0.05	<0.05	<0.05
o-Xylene	0.05 ug/g dry	-	<0.05	<0.05	<0.05
Xylenes, total	0.05 ug/g dry	-	<0.05	<0.05	<0.05
Toluene-d8	Surrogate	-	110%	110%	109%
Hydrocarbons					
F1 PHCs (C6-C10)	7 ug/g dry	<7	<7	<7	<7
F2 PHCs (C10-C16)	4 ug/g dry	<4	<4	<4	<4
F3 PHCs (C16-C34)	8 ug/g dry	<8	<8	<8	<8
F4 PHCs (C34-C50)	6 ug/g dry	<6	<6	<6	<6
Semi-Volatiles					
Acenaphthene	0.02 ug/g dry	-	<0.02	<0.02	<0.02
Acenaphthylene	0.02 ug/g dry	-	<0.02	<0.02	<0.02
Anthracene	0.02 ug/g dry	-	<0.02	<0.02	<0.02
Benzo [a] anthracene	0.02 ug/g dry	-	<0.02	<0.02	<0.02
Benzo [a] pyrene	0.02 ug/g dry	-	<0.02	<0.02	<0.02
Benzo [b] fluoranthene	0.02 ug/g dry	-	<0.02	<0.02	<0.02
Benzo [g,h,i] perylene	0.02 ug/g dry	-	<0.02	<0.02	<0.02
Benzo [k] fluoranthene	0.02 ug/g dry	-	<0.02	<0.02	<0.02
Chrysene	0.02 ug/g dry	-	<0.02	<0.02	<0.02
Dibenzo [a,h] anthracene	0.02 ug/g dry	-	<0.02	<0.02	<0.02
Fluoranthene	0.02 ug/g dry	-	0.03	<0.02	<0.02
Fluorene	0.02 ug/g dry	-	<0.02	<0.02	<0.02
Indeno [1,2,3-cd] pyrene	0.02 ug/g dry	-	<0.02	<0.02	<0.02
1-Methylnaphthalene	0.02 ug/g dry	-	<0.02	<0.02	<0.02
2-Methylnaphthalene	0.02 ug/g dry	-	<0.02	<0.02	<0.02
Methylnaphthalene (1&2)	0.04 ug/g dry	-	<0.04	<0.04	<0.04
Naphthalene	0.01 ug/g dry	-	<0.01	<0.01	<0.01
Phenanthrene	0.02 ug/g dry	-	<0.02	<0.02	<0.02
Pyrene	0.02 ug/g dry	-	0.03	<0.02	<0.02
2-Fluorobiphenyl	Surrogate	-	67.9%	58.2%	71.0%

Certificate of Analysis

Report Date: 19-Mar-2021

Client: GEMTEC Consulting Engineers and Scientists Limited

Order Date: 5-Mar-2021

Client PO:

Project Description: 100441.001

	Client ID:	BH-21-1 SA-2	BH21-3 SA-1	BH21-5 SA-1	BH21-5 SA-101
	Sample Date:	05-Mar-21 09:00	05-Mar-21 09:00	05-Mar-21 09:00	05-Mar-21 09:00
	Sample ID:	2111041-01	2111041-02	2111041-03	2111041-04
	MDL/Units	Soil	Soil	Soil	Soil
Terphenyl-d14	Surrogate	-	96.1%	81.4%	103%

Certificate of Analysis

Report Date: 19-Mar-2021

Client: GEMTEC Consulting Engineers and Scientists Limited

Order Date: 5-Mar-2021

Client PO:

Project Description: 100441.001

	Client ID:	BH21-6 SA-1	BH21-6 SA-4	BH21-8 SA-2	BH20-8 SA-3
	Sample Date:	05-Mar-21 09:00	05-Mar-21 09:00	05-Mar-21 09:00	05-Mar-21 09:00
	Sample ID:	2111041-05	2111041-06	2111041-07	2111041-08
	MDL/Units	Soil	Soil	Soil	Soil
Physical Characteristics					
% Solids	0.1 % by Wt.	66.3	78.7	80.7	92.5
General Inorganics					
SAR	0.01 N/A	0.61	0.46	1.04	1.88
Conductivity	5 uS/cm	302	188	548	2560
Cyanide, free	0.03 ug/g dry	<0.03	<0.03	<0.03	<0.03
pH	0.05 pH Units	7.25	7.26	7.32	7.55
Metals					
Antimony	1.0 ug/g dry	<1.0	<1.0	<1.0	1.1
Arsenic	1.0 ug/g dry	2.8	3.9	2.6	5.3
Barium	1.0 ug/g dry	190	199	229	180
Beryllium	0.5 ug/g dry	0.7	0.7	0.5	<0.5
Boron	5.0 ug/g dry	7.5	6.5	<5.0	10.6
Boron, available	0.5 ug/g dry	0.6	<0.5	<0.5	0.6
Cadmium	0.5 ug/g dry	<0.5	<0.5	<0.5	<0.5
Chromium	5.0 ug/g dry	50.7	71.4	47.4	19.9
Chromium (VI)	0.2 ug/g dry	<0.2	<0.2	0.2	<0.2
Cobalt	1.0 ug/g dry	10.3	14.6	9.3	7.6
Copper	5.0 ug/g dry	21.2	33.4	22.7	16.8
Lead	1.0 ug/g dry	8.3	6.5	4.3	23.5
Mercury	0.1 ug/g dry	<0.1	<0.1	<0.1	<0.1
Molybdenum	1.0 ug/g dry	<1.0	<1.0	<1.0	3.7
Nickel	5.0 ug/g dry	25.3	37.6	26.0	18.3
Selenium	1.0 ug/g dry	<1.0	<1.0	<1.0	<1.0
Silver	0.3 ug/g dry	<0.3	<0.3	<0.3	<0.3
Thallium	1.0 ug/g dry	<1.0	<1.0	<1.0	<1.0
Uranium	1.0 ug/g dry	<1.0	<1.0	<1.0	<1.0
Vanadium	10.0 ug/g dry	50.1	71.7	48.8	23.6
Zinc	20.0 ug/g dry	64.3	71.1	46.3	40.2
Volatiles					
Acetone	0.50 ug/g dry	<0.50	<0.50	-	<0.50
Benzene	0.02 ug/g dry	<0.02	<0.02	-	<0.02
Bromodichloromethane	0.05 ug/g dry	<0.05	<0.05	-	<0.05
Bromoform	0.05 ug/g dry	<0.05	<0.05	-	<0.05
Bromomethane	0.05 ug/g dry	<0.05	<0.05	-	<0.05
Carbon Tetrachloride	0.05 ug/g dry	<0.05	<0.05	-	<0.05

	Client ID:	BH21-6 SA-1	BH21-6 SA-4	BH21-8 SA-2	BH20-8 SA-3
	Sample Date:	05-Mar-21 09:00	05-Mar-21 09:00	05-Mar-21 09:00	05-Mar-21 09:00
	Sample ID:	2111041-05	2111041-06	2111041-07	2111041-08
	MDL/Units	Soil	Soil	Soil	Soil
Chlorobenzene	0.05 ug/g dry	<0.05	<0.05	-	<0.05
Chloroform	0.05 ug/g dry	<0.05	<0.05	-	<0.05
Dibromochloromethane	0.05 ug/g dry	<0.05	<0.05	-	<0.05
Dichlorodifluoromethane	0.05 ug/g dry	<0.05	<0.05	-	<0.05
1,2-Dichlorobenzene	0.05 ug/g dry	<0.05	<0.05	-	<0.05
1,3-Dichlorobenzene	0.05 ug/g dry	<0.05	<0.05	-	<0.05
1,4-Dichlorobenzene	0.05 ug/g dry	<0.05	<0.05	-	<0.05
1,1-Dichloroethane	0.05 ug/g dry	<0.05	<0.05	-	<0.05
1,2-Dichloroethane	0.05 ug/g dry	<0.05	<0.05	-	<0.05
1,1-Dichloroethylene	0.05 ug/g dry	<0.05	<0.05	-	<0.05
cis-1,2-Dichloroethylene	0.05 ug/g dry	<0.05	<0.05	-	<0.05
trans-1,2-Dichloroethylene	0.05 ug/g dry	<0.05	<0.05	-	<0.05
1,2-Dichloropropane	0.05 ug/g dry	<0.05	<0.05	-	<0.05
cis-1,3-Dichloropropylene	0.05 ug/g dry	<0.05	<0.05	-	<0.05
trans-1,3-Dichloropropylene	0.05 ug/g dry	<0.05	<0.05	-	<0.05
1,3-Dichloropropene, total	0.05 ug/g dry	<0.05	<0.05	-	<0.05
Ethylbenzene	0.05 ug/g dry	<0.05	<0.05	-	<0.05
Ethylene dibromide (dibromoethane, 1	0.05 ug/g dry	<0.05	<0.05	-	<0.05
Hexane	0.05 ug/g dry	<0.05	<0.05	-	<0.05
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g dry	<0.50	<0.50	-	<0.50
Methyl Isobutyl Ketone	0.50 ug/g dry	<0.50	<0.50	-	<0.50
Methyl tert-butyl ether	0.05 ug/g dry	<0.05	<0.05	-	<0.05
Methylene Chloride	0.05 ug/g dry	<0.05	<0.05	-	<0.05
Styrene	0.05 ug/g dry	<0.05	<0.05	-	<0.05
1,1,1,2-Tetrachloroethane	0.05 ug/g dry	<0.05	<0.05	-	<0.05
1,1,2,2-Tetrachloroethane	0.05 ug/g dry	<0.05	<0.05	-	<0.05
Tetrachloroethylene	0.05 ug/g dry	<0.05	<0.05	-	<0.05
Toluene	0.05 ug/g dry	<0.05	<0.05	-	<0.05
1,1,1-Trichloroethane	0.05 ug/g dry	<0.05	<0.05	-	<0.05
1,1,2-Trichloroethane	0.05 ug/g dry	<0.05	<0.05	-	<0.05
Trichloroethylene	0.05 ug/g dry	<0.05	<0.05	-	<0.05
Trichlorofluoromethane	0.05 ug/g dry	<0.05	<0.05	-	<0.05
Vinyl chloride	0.02 ug/g dry	<0.02	<0.02	-	<0.02
m,p-Xylenes	0.05 ug/g dry	<0.05	<0.05	-	<0.05
o-Xylene	0.05 ug/g dry	<0.05	<0.05	-	<0.05

Certificate of Analysis

Report Date: 19-Mar-2021

Client: GEMTEC Consulting Engineers and Scientists Limited

Order Date: 5-Mar-2021

Client PO:

Project Description: 100441.001

	Client ID:	BH21-6 SA-1	BH21-6 SA-4	BH21-8 SA-2	BH20-8 SA-3
	Sample Date:	05-Mar-21 09:00	05-Mar-21 09:00	05-Mar-21 09:00	05-Mar-21 09:00
	Sample ID:	2111041-05	2111041-06	2111041-07	2111041-08
	MDL/Units	Soil	Soil	Soil	Soil
Xylenes, total	0.05 ug/g dry	<0.05	<0.05	-	<0.05
4-Bromofluorobenzene	Surrogate	96.2%	97.6%	-	96.5%
Dibromofluoromethane	Surrogate	106%	91.3%	-	90.4%
Toluene-d8	Surrogate	109%	110%	-	110%
Benzene	0.02 ug/g dry	-	-	<0.02	-
Ethylbenzene	0.05 ug/g dry	-	-	<0.05	-
Toluene	0.05 ug/g dry	-	-	<0.05	-
m,p-Xylenes	0.05 ug/g dry	-	-	<0.05	-
o-Xylene	0.05 ug/g dry	-	-	<0.05	-
Xylenes, total	0.05 ug/g dry	-	-	<0.05	-
Toluene-d8	Surrogate	-	-	110%	-
Hydrocarbons					
F1 PHCs (C6-C10)	7 ug/g dry	<7	<7	<7	<7
F2 PHCs (C10-C16)	4 ug/g dry	<4	<4	<4	<40 [1]
F3 PHCs (C16-C34)	8 ug/g dry	<8	<8	<8	83
F4 PHCs (C34-C50)	6 ug/g dry	<6	<6	<6	183
Semi-Volatiles					
Acenaphthene	0.02 ug/g dry	<0.02	-	<0.02	<0.02
Acenaphthylene	0.02 ug/g dry	<0.02	-	<0.02	<0.02
Anthracene	0.02 ug/g dry	<0.02	-	<0.02	0.03
Benzo [a] anthracene	0.02 ug/g dry	<0.02	-	<0.02	0.06
Benzo [a] pyrene	0.02 ug/g dry	<0.02	-	<0.02	0.06
Benzo [b] fluoranthene	0.02 ug/g dry	<0.02	-	<0.02	0.06
Benzo [g,h,i] perylene	0.02 ug/g dry	<0.02	-	<0.02	0.04
Benzo [k] fluoranthene	0.02 ug/g dry	<0.02	-	<0.02	0.03
Chrysene	0.02 ug/g dry	<0.02	-	<0.02	0.06
Dibenzo [a,h] anthracene	0.02 ug/g dry	<0.02	-	<0.02	<0.02
Fluoranthene	0.02 ug/g dry	<0.02	-	<0.02	0.12
Fluorene	0.02 ug/g dry	<0.02	-	<0.02	<0.02
Indeno [1,2,3-cd] pyrene	0.02 ug/g dry	<0.02	-	<0.02	0.03
1-Methylnaphthalene	0.02 ug/g dry	<0.02	-	<0.02	<0.02
2-Methylnaphthalene	0.02 ug/g dry	<0.02	-	<0.02	<0.02
Methylnaphthalene (1&2)	0.04 ug/g dry	<0.04	-	<0.04	<0.04
Naphthalene	0.01 ug/g dry	<0.01	-	<0.01	<0.01
Phenanthrene	0.02 ug/g dry	<0.02	-	<0.02	0.09

Certificate of Analysis

Report Date: 19-Mar-2021

Client: GEMTEC Consulting Engineers and Scientists Limited

Order Date: 5-Mar-2021

Client PO:

Project Description: 100441.001

	Client ID:	BH21-6 SA-1	BH21-6 SA-4	BH21-8 SA-2	BH20-8 SA-3
	Sample Date:	05-Mar-21 09:00	05-Mar-21 09:00	05-Mar-21 09:00	05-Mar-21 09:00
	Sample ID:	2111041-05	2111041-06	2111041-07	2111041-08
	MDL/Units	Soil	Soil	Soil	Soil
Pyrene	0.02 ug/g dry	<0.02	-	<0.02	0.11
2-Fluorobiphenyl	Surrogate	59.6%	-	59.4%	71.5%
Terphenyl-d14	Surrogate	91.3%	-	106%	107%

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
Conductivity	ND	5	uS/cm						
Cyanide, free	ND	0.03	ug/g						
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g						
F2 PHCs (C10-C16)	ND	4	ug/g						
F3 PHCs (C16-C34)	ND	8	ug/g						
F4 PHCs (C34-C50)	ND	6	ug/g						
Metals									
Antimony	ND	1.0	ug/g						
Arsenic	ND	1.0	ug/g						
Barium	ND	1.0	ug/g						
Beryllium	ND	0.5	ug/g						
Boron, available	ND	0.5	ug/g						
Boron	ND	5.0	ug/g						
Cadmium	ND	0.5	ug/g						
Chromium (VI)	ND	0.2	ug/g						
Chromium	ND	5.0	ug/g						
Cobalt	ND	1.0	ug/g						
Copper	ND	5.0	ug/g						
Lead	ND	1.0	ug/g						
Mercury	ND	0.1	ug/g						
Molybdenum	ND	1.0	ug/g						
Nickel	ND	5.0	ug/g						
Selenium	ND	1.0	ug/g						
Silver	ND	0.3	ug/g						
Thallium	ND	1.0	ug/g						
Uranium	ND	1.0	ug/g						
Vanadium	ND	10.0	ug/g						
Zinc	ND	20.0	ug/g						
Semi-Volatiles									
Acenaphthene	ND	0.02	ug/g						
Acenaphthylene	ND	0.02	ug/g						
Anthracene	ND	0.02	ug/g						
Benzo [a] anthracene	ND	0.02	ug/g						
Benzo [a] pyrene	ND	0.02	ug/g						
Benzo [b] fluoranthene	ND	0.02	ug/g						
Benzo [g,h,i] perylene	ND	0.02	ug/g						
Benzo [k] fluoranthene	ND	0.02	ug/g						
Chrysene	ND	0.02	ug/g						
Dibenzo [a,h] anthracene	ND	0.02	ug/g						
Fluoranthene	ND	0.02	ug/g						
Fluorene	ND	0.02	ug/g						
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g						
1-Methylnaphthalene	ND	0.02	ug/g						
2-Methylnaphthalene	ND	0.02	ug/g						
Methylnaphthalene (1&2)	ND	0.04	ug/g						
Naphthalene	ND	0.01	ug/g						
Phenanthrene	ND	0.02	ug/g						
Pyrene	ND	0.02	ug/g						
Surrogate: 2-Fluorobiphenyl	*0.894*		*ug/g*		*67.1*	*50-140*			
Surrogate: Terphenyl-d14	*1.29*		*ug/g*		*96.6*	*50-140*			
Volatiles									
Acetone	ND	0.50	ug/g						
Benzene	ND	0.02	ug/g						
Bromodichloromethane	ND	0.05	ug/g						
Bromoform	ND	0.05	ug/g						
Bromomethane	ND	0.05	ug/g						

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Carbon Tetrachloride	ND	0.05	ug/g						
Chlorobenzene	ND	0.05	ug/g						
Chloroform	ND	0.05	ug/g						
Dibromochloromethane	ND	0.05	ug/g						
Dichlorodifluoromethane	ND	0.05	ug/g						
1,2-Dichlorobenzene	ND	0.05	ug/g						
1,3-Dichlorobenzene	ND	0.05	ug/g						
1,4-Dichlorobenzene	ND	0.05	ug/g						
1,1-Dichloroethane	ND	0.05	ug/g						
1,2-Dichloroethane	ND	0.05	ug/g						
1,1-Dichloroethylene	ND	0.05	ug/g						
cis-1,2-Dichloroethylene	ND	0.05	ug/g						
trans-1,2-Dichloroethylene	ND	0.05	ug/g						
1,2-Dichloropropane	ND	0.05	ug/g						
cis-1,3-Dichloropropylene	ND	0.05	ug/g						
trans-1,3-Dichloropropylene	ND	0.05	ug/g						
1,3-Dichloropropene, total	ND	0.05	ug/g						
Ethylbenzene	ND	0.05	ug/g						
Ethylene dibromide (dibromoethane, 1,2	ND	0.05	ug/g						
Hexane	ND	0.05	ug/g						
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g						
Methyl Isobutyl Ketone	ND	0.50	ug/g						
Methyl tert-butyl ether	ND	0.05	ug/g						
Methylene Chloride	ND	0.05	ug/g						
Styrene	ND	0.05	ug/g						
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g						
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g						
Tetrachloroethylene	ND	0.05	ug/g						
Toluene	ND	0.05	ug/g						
1,1,1-Trichloroethane	ND	0.05	ug/g						
1,1,2-Trichloroethane	ND	0.05	ug/g						
Trichloroethylene	ND	0.05	ug/g						
Trichlorofluoromethane	ND	0.05	ug/g						
Vinyl chloride	ND	0.02	ug/g						
m,p-Xylenes	ND	0.05	ug/g						
o-Xylene	ND	0.05	ug/g						
Xylenes, total	ND	0.05	ug/g						
Surrogate: 4-Bromofluorobenzene	*8.07*		*ug/g*		*101*	*50-140*			
Surrogate: Dibromofluoromethane	*6.94*		*ug/g*		*86.7*	*50-140*			
Surrogate: Toluene-d8	*8.66*		*ug/g*		*108*	*50-140*			
Benzene	ND	0.02	ug/g						
Ethylbenzene	ND	0.05	ug/g						
Toluene	ND	0.05	ug/g						
m,p-Xylenes	ND	0.05	ug/g						
o-Xylene	ND	0.05	ug/g						
Xylenes, total	ND	0.05	ug/g						
Surrogate: Toluene-d8	*8.66*		*ug/g*		*108*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
SAR	3.10	0.01	N/A	3.06			1.3	30	
Conductivity	410	5	uS/cm	406			1.0	5	
Cyanide, free	ND	0.03	ug/g dry	ND			NC	35	
pH	7.63	0.05	pH Units	7.63			0.0	2.3	
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g dry	ND			NC	40	
F2 PHCs (C10-C16)	ND	4	ug/g dry	10			NC	30	
F3 PHCs (C16-C34)	209	8	ug/g dry	486			79.8	30	QR-04
F4 PHCs (C34-C50)	35	6	ug/g dry	73			70.6	30	QR-04
Metals									
Antimony	1.5	1.0	ug/g dry	ND			NC	30	
Arsenic	2.8	1.0	ug/g dry	2.4			14.1	30	
Barium	281	1.0	ug/g dry	247			12.7	30	
Beryllium	1.0	0.5	ug/g dry	0.7			NC	30	
Boron, available	ND	0.5	ug/g dry	ND			NC	35	
Boron	7.5	5.0	ug/g dry	5.5			NC	30	
Cadmium	ND	0.5	ug/g dry	ND			NC	30	
Chromium (VI)	ND	0.2	ug/g dry	ND			NC	35	
Chromium	102	5.0	ug/g dry	86.4			16.4	30	
Cobalt	19.0	1.0	ug/g dry	16.3			15.2	30	
Copper	47.9	5.0	ug/g dry	42.4			12.2	30	
Lead	7.6	1.0	ug/g dry	6.3			19.8	30	
Mercury	ND	0.1	ug/g dry	ND			NC	30	
Molybdenum	ND	1.0	ug/g dry	ND			NC	30	
Nickel	54.8	5.0	ug/g dry	47.2			15.0	30	
Selenium	ND	1.0	ug/g dry	ND			NC	30	
Silver	ND	0.3	ug/g dry	ND			NC	30	
Thallium	ND	1.0	ug/g dry	ND			NC	30	
Uranium	ND	1.0	ug/g dry	ND			NC	30	
Vanadium	81.1	10.0	ug/g dry	69.0			16.1	30	
Zinc	94.1	20.0	ug/g dry	82.1			13.6	30	
Physical Characteristics									
% Solids	93.8	0.1	% by Wt.	92.5			1.4	25	
Semi-Volatiles									
Acenaphthene	0.106	0.02	ug/g dry	ND			NC	40	
Acenaphthylene	0.026	0.02	ug/g dry	ND			NC	40	
Anthracene	0.095	0.02	ug/g dry	ND			NC	40	
Benzo [a] anthracene	0.023	0.02	ug/g dry	ND			NC	40	
Benzo [a] pyrene	ND	0.02	ug/g dry	ND			NC	40	
Benzo [b] fluoranthene	ND	0.02	ug/g dry	ND			NC	40	
Benzo [g,h,i] perylene	ND	0.02	ug/g dry	ND			NC	40	
Benzo [k] fluoranthene	ND	0.02	ug/g dry	ND			NC	40	
Chrysene	0.024	0.02	ug/g dry	ND			NC	40	
Dibenzo [a,h] anthracene	ND	0.02	ug/g dry	ND			NC	40	
Fluoranthene	0.048	0.02	ug/g dry	ND			NC	40	
Fluorene	0.108	0.02	ug/g dry	ND			NC	40	
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g dry	ND			NC	40	
1-Methylnaphthalene	0.585	0.02	ug/g dry	0.039			175.0	40	QR-04
2-Methylnaphthalene	0.746	0.02	ug/g dry	0.082			161.0	40	QR-04
Naphthalene	0.545	0.01	ug/g dry	0.039			173.0	40	QR-04
Phenanthrene	0.468	0.02	ug/g dry	ND			NC	40	
Pyrene	0.089	0.02	ug/g dry	ND			NC	40	
Surrogate: 2-Fluorobiphenyl	*1.06*		*ug/g dry*		*61.5*	*50-140*			
Surrogate: Terphenyl-d14	*1.34*		*ug/g dry*		*77.9*	*50-140*			
Volatiles									

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Acetone	ND	0.50	ug/g dry	ND			NC	50	
Benzene	ND	0.02	ug/g dry	ND			NC	50	
Bromodichloromethane	ND	0.05	ug/g dry	ND			NC	50	
Bromoform	ND	0.05	ug/g dry	ND			NC	50	
Bromomethane	ND	0.05	ug/g dry	ND			NC	50	
Carbon Tetrachloride	ND	0.05	ug/g dry	ND			NC	50	
Chlorobenzene	ND	0.05	ug/g dry	ND			NC	50	
Chloroform	ND	0.05	ug/g dry	ND			NC	50	
Dibromochloromethane	ND	0.05	ug/g dry	ND			NC	50	
Dichlorodifluoromethane	ND	0.05	ug/g dry	ND			NC	50	
1,2-Dichlorobenzene	ND	0.05	ug/g dry	ND			NC	50	
1,3-Dichlorobenzene	ND	0.05	ug/g dry	ND			NC	50	
1,4-Dichlorobenzene	ND	0.05	ug/g dry	ND			NC	50	
1,1-Dichloroethane	ND	0.05	ug/g dry	ND			NC	50	
1,2-Dichloroethane	ND	0.05	ug/g dry	ND			NC	50	
1,1-Dichloroethylene	ND	0.05	ug/g dry	ND			NC	50	
cis-1,2-Dichloroethylene	ND	0.05	ug/g dry	ND			NC	50	
trans-1,2-Dichloroethylene	ND	0.05	ug/g dry	ND			NC	50	
1,2-Dichloropropane	ND	0.05	ug/g dry	ND			NC	50	
cis-1,3-Dichloropropylene	ND	0.05	ug/g dry	ND			NC	50	
trans-1,3-Dichloropropylene	ND	0.05	ug/g dry	ND			NC	50	
Ethylbenzene	ND	0.05	ug/g dry	ND			NC	50	
Ethylene dibromide (dibromoethane, 1,2	ND	0.05	ug/g dry	ND			NC	50	
Hexane	ND	0.05	ug/g dry	ND			NC	50	
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g dry	ND			NC	50	
Methyl Isobutyl Ketone	ND	0.50	ug/g dry	ND			NC	50	
Methyl tert-butyl ether	ND	0.05	ug/g dry	ND			NC	50	
Methylene Chloride	ND	0.05	ug/g dry	ND			NC	50	
Styrene	ND	0.05	ug/g dry	ND			NC	50	
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g dry	ND			NC	50	
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g dry	ND			NC	50	
Tetrachloroethylene	ND	0.05	ug/g dry	ND			NC	50	
Toluene	ND	0.05	ug/g dry	ND			NC	50	
1,1,1-Trichloroethane	ND	0.05	ug/g dry	ND			NC	50	
1,1,2-Trichloroethane	ND	0.05	ug/g dry	ND			NC	50	
Trichloroethylene	ND	0.05	ug/g dry	ND			NC	50	
Trichlorofluoromethane	ND	0.05	ug/g dry	ND			NC	50	
Vinyl chloride	ND	0.02	ug/g dry	ND			NC	50	
m,p-Xylenes	ND	0.05	ug/g dry	ND			NC	50	
o-Xylene	ND	0.05	ug/g dry	ND			NC	50	
Surrogate: 4-Bromofluorobenzene	*9.72*		*ug/g dry*		*91.0*	*50-140*			
Surrogate: Dibromofluoromethane	*11.0*		*ug/g dry*		*103*	*50-140*			
Surrogate: Toluene-d8	*11.8*		*ug/g dry*		*111*	*50-140*			
Benzene	ND	0.02	ug/g dry	ND			NC	50	
Ethylbenzene	ND	0.05	ug/g dry	ND			NC	50	
Toluene	ND	0.05	ug/g dry	ND			NC	50	
m,p-Xylenes	ND	0.05	ug/g dry	ND			NC	50	
o-Xylene	ND	0.05	ug/g dry	ND			NC	50	
Surrogate: Toluene-d8	*11.8*		*ug/g dry*		*111*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
Cyanide, free	0.280	0.03	ug/g	ND	93.5	70-130			
Hydrocarbons									
F1 PHCs (C6-C10)	183	7	ug/g	ND	91.6	80-120			
F2 PHCs (C10-C16)	97	4	ug/g	10	83.9	60-140			
F3 PHCs (C16-C34)	180	8	ug/g	ND	91.8	80-120			
F4 PHCs (C34-C50)	204	6	ug/g	73	82.0	60-140			
Metals									
Antimony	40.3	1.0	ug/g	ND	80.0	70-130			
Arsenic	46.9	1.0	ug/g	1.0	91.8	70-130			
Barium	155	1.0	ug/g	99.0	112	70-130			
Beryllium	48.7	0.5	ug/g	ND	96.8	70-130			
Boron, available	4.51	0.5	ug/g	ND	90.2	70-122			
Boron	46.5	5.0	ug/g	ND	88.6	70-130			
Cadmium	46.6	0.5	ug/g	ND	93.0	70-130			
Chromium (VI)	0.1	0.2	ug/g	ND	49.5	70-130			QM-01
Chromium	89.1	5.0	ug/g	34.6	109	70-130			
Cobalt	56.9	1.0	ug/g	6.5	101	70-130			
Copper	64.7	5.0	ug/g	16.9	95.6	70-130			
Lead	45.0	1.0	ug/g	2.5	84.9	70-130			
Mercury	1.35	0.1	ug/g	ND	90.1	70-130			
Molybdenum	47.7	1.0	ug/g	ND	94.9	70-130			
Nickel	67.7	5.0	ug/g	18.9	97.7	70-130			
Selenium	42.5	1.0	ug/g	ND	84.7	70-130			
Silver	45.6	0.3	ug/g	ND	91.0	70-130			
Thallium	43.6	1.0	ug/g	ND	86.8	70-130			
Uranium	44.2	1.0	ug/g	ND	87.8	70-130			
Vanadium	83.3	10.0	ug/g	27.6	111	70-130			
Zinc	80.3	20.0	ug/g	32.8	94.9	70-130			
Semi-Volatiles									
Acenaphthene	0.093	0.02	ug/g	ND	55.7	50-140			
Acenaphthylene	0.096	0.02	ug/g	ND	57.3	50-140			
Anthracene	0.102	0.02	ug/g	ND	61.0	50-140			
Benzo [a] anthracene	0.088	0.02	ug/g	ND	52.8	50-140			
Benzo [a] pyrene	0.102	0.02	ug/g	ND	61.0	50-140			
Benzo [b] fluoranthene	0.124	0.02	ug/g	ND	74.6	50-140			
Benzo [g,h,i] perylene	0.108	0.02	ug/g	ND	65.0	50-140			
Benzo [k] fluoranthene	0.113	0.02	ug/g	ND	67.5	50-140			
Chrysene	0.113	0.02	ug/g	ND	67.8	50-140			
Dibenzo [a,h] anthracene	0.105	0.02	ug/g	ND	62.7	50-140			
Fluoranthene	0.088	0.02	ug/g	ND	53.0	50-140			
Fluorene	0.099	0.02	ug/g	ND	59.6	50-140			
Indeno [1,2,3-cd] pyrene	0.100	0.02	ug/g	ND	60.0	50-140			
1-Methylnaphthalene	0.099	0.02	ug/g	ND	59.7	50-140			
2-Methylnaphthalene	0.111	0.02	ug/g	ND	66.5	50-140			
Naphthalene	0.119	0.01	ug/g	ND	71.2	50-140			
Phenanthrene	0.101	0.02	ug/g	ND	60.7	50-140			
Pyrene	0.090	0.02	ug/g	ND	53.8	50-140			
Surrogate: 2-Fluorobiphenyl	*1.10*		*ug/g*		*82.7*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Surrogate: Terphenyl-d14	*1.65*		*ug/g*		*124*	*50-140*			
Volatiles									
Acetone	13.0	0.50	ug/g	ND	130	50-140			
Benzene	4.58	0.02	ug/g	ND	115	60-130			
Bromodichloromethane	3.21	0.05	ug/g	ND	80.2	60-130			
Bromoform	2.54	0.05	ug/g	ND	63.5	60-130			
Bromomethane	4.17	0.05	ug/g	ND	104	50-140			
Carbon Tetrachloride	3.60	0.05	ug/g	ND	90.1	60-130			
Chlorobenzene	4.40	0.05	ug/g	ND	110	60-130			
Chloroform	4.64	0.05	ug/g	ND	116	60-130			
Dibromochloromethane	4.03	0.05	ug/g	ND	101	60-130			
Dichlorodifluoromethane	4.41	0.05	ug/g	ND	110	50-140			
1,2-Dichlorobenzene	3.96	0.05	ug/g	ND	98.9	60-130			
1,3-Dichlorobenzene	3.88	0.05	ug/g	ND	97.0	60-130			
1,4-Dichlorobenzene	3.88	0.05	ug/g	ND	96.9	60-130			
1,1-Dichloroethane	4.98	0.05	ug/g	ND	124	60-130			
1,2-Dichloroethane	4.84	0.05	ug/g	ND	121	60-130			
1,1-Dichloroethylene	4.24	0.05	ug/g	ND	106	60-130			
cis-1,2-Dichloroethylene	4.42	0.05	ug/g	ND	111	60-130			
trans-1,2-Dichloroethylene	4.17	0.05	ug/g	ND	104	60-130			
1,2-Dichloropropane	4.73	0.05	ug/g	ND	118	60-130			
cis-1,3-Dichloropropylene	2.48	0.05	ug/g	ND	62.0	60-130			
trans-1,3-Dichloropropylene	2.41	0.05	ug/g	ND	60.3	60-130			
Ethylbenzene	4.83	0.05	ug/g	ND	121	60-130			
Ethylene dibromide (dibromoethane, 1,2-	3.91	0.05	ug/g	ND	97.7	60-130			
Hexane	3.51	0.05	ug/g	ND	87.8	60-130			
Methyl Ethyl Ketone (2-Butanone)	12.7	0.50	ug/g	ND	127	50-140			
Methyl Isobutyl Ketone	9.64	0.50	ug/g	ND	96.4	50-140			
Methyl tert-butyl ether	10.8	0.05	ug/g	ND	108	50-140			
Methylene Chloride	3.87	0.05	ug/g	ND	96.8	60-130			
Styrene	3.62	0.05	ug/g	ND	90.6	60-130			
1,1,1,2-Tetrachloroethane	3.64	0.05	ug/g	ND	91.1	60-130			
1,1,2,2-Tetrachloroethane	2.60	0.05	ug/g	ND	65.0	60-130			
Tetrachloroethylene	4.18	0.05	ug/g	ND	105	60-130			
Toluene	4.94	0.05	ug/g	ND	123	60-130			
1,1,1-Trichloroethane	4.53	0.05	ug/g	ND	113	60-130			
1,1,2-Trichloroethane	4.28	0.05	ug/g	ND	107	60-130			
Trichloroethylene	5.06	0.05	ug/g	ND	127	60-130			
Trichlorofluoromethane	4.38	0.05	ug/g	ND	110	50-140			
Vinyl chloride	4.32	0.02	ug/g	ND	108	50-140			
m,p-Xylenes	8.83	0.05	ug/g	ND	110	60-130			
o-Xylene	4.48	0.05	ug/g	ND	112	60-130			
Surrogate: 4-Bromofluorobenzene	*7.63*		*ug/g*		*95.3*	*50-140*			
Surrogate: Dibromofluoromethane	*8.57*		*ug/g*		*107*	*50-140*			
Surrogate: Toluene-d8	*8.31*		*ug/g*		*104*	*50-140*			
Benzene	4.58	0.02	ug/g	ND	115	60-130			
Ethylbenzene	4.83	0.05	ug/g	ND	121	60-130			
Toluene	4.94	0.05	ug/g	ND	123	60-130			
m,p-Xylenes	8.83	0.05	ug/g	ND	110	60-130			
o-Xylene	4.48	0.05	ug/g	ND	112	60-130			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Surrogate: Toluene-d8	*8.31*		*ug/g*		*104*	*50-140*			

Qualifier Notes:

Login Qualifiers :

Container and COC sample IDs don't match - Jar labelled as BH21-8 SA-3, the vial is labelled as BH21 SSA3, chain of custody reads BH20-8 SA-3

Applies to samples: BH20-8 SA-3

Container and COC sample IDs don't match - Vial labelled as BH21-5 SA102, chain of custody reads BH21-5 SA-101

Applies to samples: BH21-5 SA-101

Sample Qualifiers :

1 : Elevated detection limits due to the nature of the sample matrix.

QC Qualifiers :

QM-01 : The spike recovery for this QC sample is outside of established control limits due to sample matrix interference.

QR-04 : Duplicate results exceeds RPD limits due to non-homogeneous matrix.

Sample Data Revisions

None

Work Order Revisions / Comments:

REVISION 1: This report includes an updated parameter list as per the client.

Other Report Notes:

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

Soil results are reported on a dry weight basis when the units are denoted with 'dry'.
Where %Solids is reported, moisture loss includes the loss of volatile hydrocarbons.

CCME PHC additional information:

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.
- F1 range corrected for BTEX.
- F2 to F3 ranges corrected for appropriate PAHs where available.
- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.
- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.
- When reported, data for F4G has been processed using a silica gel cleanup.

PARAC LABORATORIES

Paracel ID: 2111041

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Paracel Order Number (Lab Use Only)	Chain Of Custody (Lab Use Only)
2111041	№ 130456

Client Name: GEMTEC	Project Ref: 100441.001	Page 1 of 1
Contact Name: NS	Quote #: 21-113	Turnaround Time
Address: 32 Steacie Dr	PO #:	☐ 1 day ☐ 3 day
	E-mail: nicole.soucy@gemtec.ca	☐ 2 day ☒ Regular
Telephone: 613-836-1422		Date Required:

Regulation 153/04	Other Regulation
☒ Table 1 ☐ Res/Park ☐ Med/Fine	☐ REG 558 ☐ PWQO
☐ Table 2 ☐ Ind/Comm ☐ Coarse	☐ CCME ☐ MISA
☐ Table 3 ☐ Agri/Other	☐ SU - Sani ☐ SU - Storm
☐ Table	Mun:
For RSC: ☐ Yes ☒ No	☐ Other:

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

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken Date	Sample Taken Time	PHCs F1-F4+BTEX	VOCs	PAHs	Metals ~~+ Hydride~~	Hg	CrVI	B (HWS)	OCP						
1	BH-21-1 SA-2	S		3	March 5/21		X			X				X						✓
2	BH21-3 SA-1			2			X		X	X										✓
3	BH21-5 SA-1			2			X		X	X										✓
4	BH21-5 SA-101			2			X		X	X										✓
5	BH21-6 SA-1			3			X		X	X				X						✓
6	BH21-6 SA-4			3			X			X				X						✓
7	BH21-8 SA-2			3			X		X	X				X						✓
8	BH20-8 SA-3			2			X		X	X										✓
9																				
10																				

Comments:

Method of Delivery: Drop Box

Relinquished By (Sign):	Received By Driver/Depot:	Received at Lab: Simeeporn Obimpi	Verified By:
Relinquished By (Print): Nicole Soucy	Date/Time: 03/05/2021 4:15pm	Date/Time: March 8, 2021 11:00	Date/Time: 8/Mar/2021 11:58
Date/Time: March 5/21	Temperature: 8.5 °C	Temperature: 4.1 °C	pH Verified: ☐ By: NA

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Certificate of Analysis

GEMTEC Consulting Engineers and Scientists Limited

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

Client PO:
Project: 100441.001
Custody: 129775

Report Date: 19-Mar-2021
Order Date: 15-Mar-2021

Revised Report

Order #: 2112125

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

Paracel ID	Client ID
2112125-01	BH21-2 SA-1
2112125-02	BH21-7 SA-1
2112125-03	BH21-4 SA-1
2112125-04	BH21-4 SA-6
2112125-05	BH21-4 SA-101

Approved By:

Mark Foto

Mark Foto, M.Sc.
Lab Supervisor

Certificate of Analysis

Report Date: 19-Mar-2021

Client: GEMTEC Consulting Engineers and Scientists Limited

Order Date: 15-Mar-2021

Client PO:

Project Description: 100441.001

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Boron, available	MOE (HWE), EPA 200.7 - ICP-OES	17-Mar-21	17-Mar-21
BTEX by P&T GC-MS	EPA 8260 - P&T GC-MS	16-Mar-21	16-Mar-21
Chromium, hexavalent - soil	MOE E3056 - Extraction, colourimetric	15-Mar-21	17-Mar-21
Conductivity	MOE E3138 - probe @25 °C, water ext	17-Mar-21	17-Mar-21
Cyanide, free	MOE E3015 - Auto Colour, water extraction	16-Mar-21	17-Mar-21
Mercury by CVAA	EPA 7471B - CVAA, digestion	17-Mar-21	17-Mar-21
pH, soil	EPA 150.1 - pH probe @ 25 °C, CaCl buffered ext.	16-Mar-21	16-Mar-21
PHC F1	CWS Tier 1 - P&T GC-FID	16-Mar-21	16-Mar-21
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	16-Mar-21	16-Mar-21
REG 153: Metals by ICP/MS, soil	EPA 6020 - Digestion - ICP-MS	17-Mar-21	17-Mar-21
REG 153: PAHs by GC-MS	EPA 8270 - GC-MS, extraction	16-Mar-21	16-Mar-21
REG 153: VOCs by P&T GC/MS	EPA 8260 - P&T GC-MS	16-Mar-21	16-Mar-21
SAR	Calculated	17-Mar-21	17-Mar-21
Solids, %	Gravimetric, calculation	16-Mar-21	16-Mar-21

Certificate of Analysis

Report Date: 19-Mar-2021

Client: **GEMTEC Consulting Engineers and Scientists Limited**

Order Date: 15-Mar-2021

Client PO:

Project Description: 100441.001

	Client ID:	BH21-2 SA-1	BH21-7 SA-1	BH21-4 SA-1	BH21-4 SA-6
	Sample Date:	15-Mar-21 09:00	15-Mar-21 09:00	15-Mar-21 09:00	15-Mar-21 09:00
	Sample ID:	2112125-01	2112125-02	2112125-03	2112125-04
	MDL/Units	Soil	Soil	Soil	Soil
Physical Characteristics					
% Solids	0.1 % by Wt.	91.0	74.6	82.5	76.0
General Inorganics					
SAR	0.01 N/A	1.09	0.61	1.39	0.36
Conductivity	5 uS/cm	576	306	563	162
Cyanide, free	0.03 ug/g dry	<0.03	<0.03	<0.03	<0.03
pH	0.05 pH Units	7.62	7.42	7.53	7.86
Metals					
Antimony	1.0 ug/g dry	<1.0	<1.0	<1.0	<1.0
Arsenic	1.0 ug/g dry	4.3	2.9	2.6	3.2
Barium	1.0 ug/g dry	144	162	127	110
Beryllium	0.5 ug/g dry	<0.5	0.6	<0.5	<0.5
Boron	5.0 ug/g dry	7.7	6.9	<5.0	5.5
Boron, available	0.5 ug/g dry	<0.5	<0.5	<0.5	<0.5
Cadmium	0.5 ug/g dry	<0.5	<0.5	<0.5	<0.5
Chromium	5.0 ug/g dry	30.9	41.9	41.8	21.8
Chromium (VI)	0.2 ug/g dry	<0.2	<0.2	<0.2	<0.2
Cobalt	1.0 ug/g dry	8.6	9.4	9.5	7.8
Copper	5.0 ug/g dry	18.7	21.6	20.8	21.5
Lead	1.0 ug/g dry	8.7	7.9	15.4	5.4
Mercury	0.1 ug/g dry	<0.1	<0.1	<0.1	<0.1
Molybdenum	1.0 ug/g dry	1.8	1.1	1.1	1.3
Nickel	5.0 ug/g dry	19.9	22.2	24.4	17.5
Selenium	1.0 ug/g dry	<1.0	<1.0	<1.0	<1.0
Silver	0.3 ug/g dry	<0.3	<0.3	<0.3	<0.3
Thallium	1.0 ug/g dry	<1.0	<1.0	<1.0	<1.0
Uranium	1.0 ug/g dry	<1.0	<1.0	<1.0	<1.0
Vanadium	10.0 ug/g dry	34.3	44.9	43.1	34.7
Zinc	20.0 ug/g dry	51.8	57.7	51.5	33.1
Volatiles					
Acetone	0.50 ug/g dry	-	-	<0.50	<0.50
Benzene	0.02 ug/g dry	-	-	<0.02	<0.02
Bromodichloromethane	0.05 ug/g dry	-	-	<0.05	<0.05
Bromoform	0.05 ug/g dry	-	-	<0.05	<0.05
Bromomethane	0.05 ug/g dry	-	-	<0.05	<0.05
Carbon Tetrachloride	0.05 ug/g dry	-	-	<0.05	<0.05

Certificate of Analysis

Report Date: 19-Mar-2021

Client: GEMTEC Consulting Engineers and Scientists Limited

Order Date: 15-Mar-2021

Client PO:

Project Description: 100441.001

	Client ID:	BH21-2 SA-1	BH21-7 SA-1	BH21-4 SA-1	BH21-4 SA-6
	Sample Date:	15-Mar-21 09:00	15-Mar-21 09:00	15-Mar-21 09:00	15-Mar-21 09:00
	Sample ID:	2112125-01	2112125-02	2112125-03	2112125-04
	MDL/Units	Soil	Soil	Soil	Soil
Chlorobenzene	0.05 ug/g dry	-	-	<0.05	<0.05
Chloroform	0.05 ug/g dry	-	-	<0.05	<0.05
Dibromochloromethane	0.05 ug/g dry	-	-	<0.05	<0.05
Dichlorodifluoromethane	0.05 ug/g dry	-	-	<0.05	<0.05
1,2-Dichlorobenzene	0.05 ug/g dry	-	-	<0.05	<0.05
1,3-Dichlorobenzene	0.05 ug/g dry	-	-	<0.05	<0.05
1,4-Dichlorobenzene	0.05 ug/g dry	-	-	<0.05	<0.05
1,1-Dichloroethane	0.05 ug/g dry	-	-	<0.05	<0.05
1,2-Dichloroethane	0.05 ug/g dry	-	-	<0.05	<0.05
1,1-Dichloroethylene	0.05 ug/g dry	-	-	<0.05	<0.05
cis-1,2-Dichloroethylene	0.05 ug/g dry	-	-	<0.05	<0.05
trans-1,2-Dichloroethylene	0.05 ug/g dry	-	-	<0.05	<0.05
1,2-Dichloropropane	0.05 ug/g dry	-	-	<0.05	<0.05
cis-1,3-Dichloropropylene	0.05 ug/g dry	-	-	<0.05	<0.05
trans-1,3-Dichloropropylene	0.05 ug/g dry	-	-	<0.05	<0.05
1,3-Dichloropropene, total	0.05 ug/g dry	-	-	<0.05	<0.05
Ethylbenzene	0.05 ug/g dry	-	-	<0.05	<0.05
Ethylene dibromide (dibromoethane, 1,2-)	0.05 ug/g dry	-	-	<0.05	<0.05
Hexane	0.05 ug/g dry	-	-	<0.05	<0.05
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g dry	-	-	<0.50	<0.50
Methyl Isobutyl Ketone	0.50 ug/g dry	-	-	<0.50	<0.50
Methyl tert-butyl ether	0.05 ug/g dry	-	-	<0.05	<0.05
Methylene Chloride	0.05 ug/g dry	-	-	<0.05	<0.05
Styrene	0.05 ug/g dry	-	-	<0.05	<0.05
1,1,1,2-Tetrachloroethane	0.05 ug/g dry	-	-	<0.05	<0.05
1,1,2,2-Tetrachloroethane	0.05 ug/g dry	-	-	<0.05	<0.05
Tetrachloroethylene	0.05 ug/g dry	-	-	<0.05	<0.05
Toluene	0.05 ug/g dry	-	-	<0.05	<0.05
1,1,1-Trichloroethane	0.05 ug/g dry	-	-	<0.05	<0.05
1,1,2-Trichloroethane	0.05 ug/g dry	-	-	<0.05	<0.05
Trichloroethylene	0.05 ug/g dry	-	-	<0.05	<0.05
Trichlorofluoromethane	0.05 ug/g dry	-	-	<0.05	<0.05
Vinyl chloride	0.02 ug/g dry	-	-	<0.02	<0.02
m,p-Xylenes	0.05 ug/g dry	-	-	<0.05	<0.05
o-Xylene	0.05 ug/g dry	-	-	<0.05	<0.05

Certificate of Analysis

Report Date: 19-Mar-2021

Client: GEMTEC Consulting Engineers and Scientists Limited

Order Date: 15-Mar-2021

Client PO:

Project Description: 100441.001

	Client ID:	BH21-2 SA-1	BH21-7 SA-1	BH21-4 SA-1	BH21-4 SA-6
	Sample Date:	15-Mar-21 09:00	15-Mar-21 09:00	15-Mar-21 09:00	15-Mar-21 09:00
	Sample ID:	2112125-01	2112125-02	2112125-03	2112125-04
	MDL/Units	Soil	Soil	Soil	Soil
Xylenes, total	0.05 ug/g dry	-	-	<0.05	<0.05
4-Bromofluorobenzene	Surrogate	-	-	110%	113%
Dibromofluoromethane	Surrogate	-	-	86.1%	88.2%
Toluene-d8	Surrogate	-	-	117%	117%
Benzene	0.02 ug/g dry	<0.02	<0.02	-	-
Ethylbenzene	0.05 ug/g dry	<0.05	<0.05	-	-
Toluene	0.05 ug/g dry	<0.05	<0.05	-	-
m,p-Xylenes	0.05 ug/g dry	<0.05	<0.05	-	-
o-Xylene	0.05 ug/g dry	<0.05	<0.05	-	-
Xylenes, total	0.05 ug/g dry	<0.05	<0.05	-	-
Toluene-d8	Surrogate	117%	117%	-	-
Hydrocarbons					
F1 PHCs (C6-C10)	7 ug/g dry	<7	<7	<7	<7
F2 PHCs (C10-C16)	4 ug/g dry	<4	<4	<4	<4
F3 PHCs (C16-C34)	8 ug/g dry	<8	<8	<8	<8
F4 PHCs (C34-C50)	6 ug/g dry	<6	<6	<6	<6
Semi-Volatiles					
Acenaphthene	0.02 ug/g dry	<0.02	<0.02	<0.02	-
Acenaphthylene	0.02 ug/g dry	<0.02	<0.02	<0.02	-
Anthracene	0.02 ug/g dry	<0.02	<0.02	<0.02	-
Benzo [a] anthracene	0.02 ug/g dry	<0.02	<0.02	0.02	-
Benzo [a] pyrene	0.02 ug/g dry	<0.02	<0.02	0.02	-
Benzo [b] fluoranthene	0.02 ug/g dry	<0.02	<0.02	0.02	-
Benzo [g,h,i] perylene	0.02 ug/g dry	<0.02	<0.02	<0.02	-
Benzo [k] fluoranthene	0.02 ug/g dry	<0.02	<0.02	<0.02	-
Chrysene	0.02 ug/g dry	<0.02	<0.02	<0.02	-
Dibenzo [a,h] anthracene	0.02 ug/g dry	<0.02	<0.02	<0.02	-
Fluoranthene	0.02 ug/g dry	<0.02	<0.02	0.05	-
Fluorene	0.02 ug/g dry	<0.02	<0.02	<0.02	-
Indeno [1,2,3-cd] pyrene	0.02 ug/g dry	<0.02	<0.02	<0.02	-
1-Methylnaphthalene	0.02 ug/g dry	<0.02	<0.02	<0.02	-
2-Methylnaphthalene	0.02 ug/g dry	<0.02	<0.02	<0.02	-
Methylnaphthalene (1&2)	0.04 ug/g dry	<0.04	<0.04	<0.04	-
Naphthalene	0.01 ug/g dry	<0.01	<0.01	<0.01	-
Phenanthrene	0.02 ug/g dry	<0.02	<0.02	0.03	-
Pyrene	0.02 ug/g dry	<0.02	<0.02	0.05	-
2-Fluorobiphenyl	Surrogate	68.6%	77.3%	84.0%	-

Certificate of Analysis

Report Date: 19-Mar-2021

Client: GEMTEC Consulting Engineers and Scientists Limited

Order Date: 15-Mar-2021

Client PO:

Project Description: 100441.001

	Client ID:	BH21-2 SA-1	BH21-7 SA-1	BH21-4 SA-1	BH21-4 SA-6
	Sample Date:	15-Mar-21 09:00	15-Mar-21 09:00	15-Mar-21 09:00	15-Mar-21 09:00
	Sample ID:	2112125-01	2112125-02	2112125-03	2112125-04
	MDL/Units	Soil	Soil	Soil	Soil
Terphenyl-d14	Surrogate	96.3%	109%	117%	-

Certificate of Analysis

Report Date: 19-Mar-2021

Client: GEMTEC Consulting Engineers and Scientists Limited

Order Date: 15-Mar-2021

Client PO:

Project Description: 100441.001

	Client ID:	BH21-4 SA-101	-	-	-
	Sample Date:	15-Mar-21 09:00	-	-	-
	Sample ID:	2112125-05	-	-	-
	MDL/Units	Soil	-	-	-
Physical Characteristics					
% Solids	0.1 % by Wt.	83.7	-	-	-
General Inorganics					
SAR	0.01 N/A	1.15	-	-	-
Conductivity	5 uS/cm	564	-	-	-
Cyanide, free	0.03 ug/g dry	<0.03	-	-	-
pH	0.05 pH Units	7.59	-	-	-
Metals					
Antimony	1.0 ug/g dry	<1.0	-	-	-
Arsenic	1.0 ug/g dry	3.0	-	-	-
Barium	1.0 ug/g dry	113	-	-	-
Beryllium	0.5 ug/g dry	<0.5	-	-	-
Boron	5.0 ug/g dry	5.4	-	-	-
Boron, available	0.5 ug/g dry	<0.5	-	-	-
Cadmium	0.5 ug/g dry	<0.5	-	-	-
Chromium	5.0 ug/g dry	29.7	-	-	-
Chromium (VI)	0.2 ug/g dry	<0.2	-	-	-
Cobalt	1.0 ug/g dry	7.9	-	-	-
Copper	5.0 ug/g dry	16.8	-	-	-
Lead	1.0 ug/g dry	10.7	-	-	-
Mercury	0.1 ug/g dry	<0.1	-	-	-
Molybdenum	1.0 ug/g dry	1.6	-	-	-
Nickel	5.0 ug/g dry	19.6	-	-	-
Selenium	1.0 ug/g dry	<1.0	-	-	-
Silver	0.3 ug/g dry	<0.3	-	-	-
Thallium	1.0 ug/g dry	<1.0	-	-	-
Uranium	1.0 ug/g dry	<1.0	-	-	-
Vanadium	10.0 ug/g dry	36.1	-	-	-
Zinc	20.0 ug/g dry	41.2	-	-	-
Volatiles					
Acetone	0.50 ug/g dry	<0.50	-	-	-
Benzene	0.02 ug/g dry	<0.02	-	-	-
Bromodichloromethane	0.05 ug/g dry	<0.05	-	-	-
Bromoform	0.05 ug/g dry	<0.05	-	-	-
Bromomethane	0.05 ug/g dry	<0.05	-	-	-
Carbon Tetrachloride	0.05 ug/g dry	<0.05	-	-	-

	Client ID:	BH21-4 SA-101	-	-	-
	Sample Date:	15-Mar-21 09:00	-	-	-
	Sample ID:	2112125-05	-	-	-
	MDL/Units	Soil	-	-	-
Chlorobenzene	0.05 ug/g dry	<0.05	-	-	-
Chloroform	0.05 ug/g dry	<0.05	-	-	-
Dibromochloromethane	0.05 ug/g dry	<0.05	-	-	-
Dichlorodifluoromethane	0.05 ug/g dry	<0.05	-	-	-
1,2-Dichlorobenzene	0.05 ug/g dry	<0.05	-	-	-
1,3-Dichlorobenzene	0.05 ug/g dry	<0.05	-	-	-
1,4-Dichlorobenzene	0.05 ug/g dry	<0.05	-	-	-
1,1-Dichloroethane	0.05 ug/g dry	<0.05	-	-	-
1,2-Dichloroethane	0.05 ug/g dry	<0.05	-	-	-
1,1-Dichloroethylene	0.05 ug/g dry	<0.05	-	-	-
cis-1,2-Dichloroethylene	0.05 ug/g dry	<0.05	-	-	-
trans-1,2-Dichloroethylene	0.05 ug/g dry	<0.05	-	-	-
1,2-Dichloropropane	0.05 ug/g dry	<0.05	-	-	-
cis-1,3-Dichloropropylene	0.05 ug/g dry	<0.05	-	-	-
trans-1,3-Dichloropropylene	0.05 ug/g dry	<0.05	-	-	-
1,3-Dichloropropene, total	0.05 ug/g dry	<0.05	-	-	-
Ethylbenzene	0.05 ug/g dry	<0.05	-	-	-
Ethylene dibromide (dibromoethane, 1	0.05 ug/g dry	<0.05	-	-	-
Hexane	0.05 ug/g dry	<0.05	-	-	-
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g dry	<0.50	-	-	-
Methyl Isobutyl Ketone	0.50 ug/g dry	<0.50	-	-	-
Methyl tert-butyl ether	0.05 ug/g dry	<0.05	-	-	-
Methylene Chloride	0.05 ug/g dry	<0.05	-	-	-
Styrene	0.05 ug/g dry	<0.05	-	-	-
1,1,1,2-Tetrachloroethane	0.05 ug/g dry	<0.05	-	-	-
1,1,2,2-Tetrachloroethane	0.05 ug/g dry	<0.05	-	-	-
Tetrachloroethylene	0.05 ug/g dry	<0.05	-	-	-
Toluene	0.05 ug/g dry	<0.05	-	-	-
1,1,1-Trichloroethane	0.05 ug/g dry	<0.05	-	-	-
1,1,2-Trichloroethane	0.05 ug/g dry	<0.05	-	-	-
Trichloroethylene	0.05 ug/g dry	<0.05	-	-	-
Trichlorofluoromethane	0.05 ug/g dry	<0.05	-	-	-
Vinyl chloride	0.02 ug/g dry	<0.02	-	-	-
m,p-Xylenes	0.05 ug/g dry	0.37	-	-	-
o-Xylene	0.05 ug/g dry	0.09	-	-	-

Certificate of Analysis

Report Date: 19-Mar-2021

Client: GEMTEC Consulting Engineers and Scientists Limited

Order Date: 15-Mar-2021

Client PO:

Project Description: 100441.001

	Client ID:	BH21-4 SA-101	-	-	-
	Sample Date:	15-Mar-21 09:00	-	-	-
	Sample ID:	2112125-05	-	-	-
	MDL/Units	Soil	-	-	-
Xylenes, total	0.05 ug/g dry	0.46	-	-	-
4-Bromofluorobenzene	Surrogate	117%	-	-	-
Dibromofluoromethane	Surrogate	90.1%	-	-	-
Toluene-d8	Surrogate	117%	-	-	-
Hydrocarbons					
F1 PHCs (C6-C10)	7 ug/g dry	<7	-	-	-
F2 PHCs (C10-C16)	4 ug/g dry	8	-	-	-
F3 PHCs (C16-C34)	8 ug/g dry	9	-	-	-
F4 PHCs (C34-C50)	6 ug/g dry	<6	-	-	-
Semi-Volatiles					
Acenaphthene	0.02 ug/g dry	<0.02	-	-	-
Acenaphthylene	0.02 ug/g dry	<0.02	-	-	-
Anthracene	0.02 ug/g dry	<0.02	-	-	-
Benzo [a] anthracene	0.02 ug/g dry	<0.02	-	-	-
Benzo [a] pyrene	0.02 ug/g dry	<0.02	-	-	-
Benzo [b] fluoranthene	0.02 ug/g dry	<0.02	-	-	-
Benzo [g,h,i] perylene	0.02 ug/g dry	<0.02	-	-	-
Benzo [k] fluoranthene	0.02 ug/g dry	<0.02	-	-	-
Chrysene	0.02 ug/g dry	<0.02	-	-	-
Dibenzo [a,h] anthracene	0.02 ug/g dry	<0.02	-	-	-
Fluoranthene	0.02 ug/g dry	<0.02	-	-	-
Fluorene	0.02 ug/g dry	<0.02	-	-	-
Indeno [1,2,3-cd] pyrene	0.02 ug/g dry	<0.02	-	-	-
1-Methylnaphthalene	0.02 ug/g dry	<0.02	-	-	-
2-Methylnaphthalene	0.02 ug/g dry	<0.02	-	-	-
Methylnaphthalene (1&2)	0.04 ug/g dry	<0.04	-	-	-
Naphthalene	0.01 ug/g dry	<0.01	-	-	-
Phenanthrene	0.02 ug/g dry	<0.02	-	-	-
Pyrene	0.02 ug/g dry	<0.02	-	-	-
2-Fluorobiphenyl	Surrogate	78.4%	-	-	-
Terphenyl-d14	Surrogate	112%	-	-	-

Certificate of Analysis

Report Date: 19-Mar-2021

Client: GEMTEC Consulting Engineers and Scientists Limited

Order Date: 15-Mar-2021

Client PO:

Project Description: 100441.001

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
Conductivity	ND	5	uS/cm						
Cyanide, free	ND	0.03	ug/g						
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g						
F2 PHCs (C10-C16)	ND	4	ug/g						
F3 PHCs (C16-C34)	ND	8	ug/g						
F4 PHCs (C34-C50)	ND	6	ug/g						
Metals									
Antimony	ND	1.0	ug/g						
Arsenic	ND	1.0	ug/g						
Barium	ND	1.0	ug/g						
Beryllium	ND	0.5	ug/g						
Boron, available	ND	0.5	ug/g						
Boron	ND	5.0	ug/g						
Cadmium	ND	0.5	ug/g						
Chromium (VI)	ND	0.2	ug/g						
Chromium	ND	5.0	ug/g						
Cobalt	ND	1.0	ug/g						
Copper	ND	5.0	ug/g						
Lead	ND	1.0	ug/g						
Mercury	ND	0.1	ug/g						
Molybdenum	ND	1.0	ug/g						
Nickel	ND	5.0	ug/g						
Selenium	ND	1.0	ug/g						
Silver	ND	0.3	ug/g						
Thallium	ND	1.0	ug/g						
Uranium	ND	1.0	ug/g						
Vanadium	ND	10.0	ug/g						
Zinc	ND	20.0	ug/g						
Semi-Volatiles									
Acenaphthene	ND	0.02	ug/g						
Acenaphthylene	ND	0.02	ug/g						
Anthracene	ND	0.02	ug/g						
Benzo [a] anthracene	ND	0.02	ug/g						
Benzo [a] pyrene	ND	0.02	ug/g						
Benzo [b] fluoranthene	ND	0.02	ug/g						
Benzo [g,h,i] perylene	ND	0.02	ug/g						
Benzo [k] fluoranthene	ND	0.02	ug/g						
Chrysene	ND	0.02	ug/g						
Dibenzo [a,h] anthracene	ND	0.02	ug/g						
Fluoranthene	ND	0.02	ug/g						
Fluorene	ND	0.02	ug/g						
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g						
1-Methylnaphthalene	ND	0.02	ug/g						
2-Methylnaphthalene	ND	0.02	ug/g						
Methylnaphthalene (1&2)	ND	0.04	ug/g						
Naphthalene	ND	0.01	ug/g						
Phenanthrene	ND	0.02	ug/g						
Pyrene	ND	0.02	ug/g						
Surrogate: 2-Fluorobiphenyl	*1.07*		*ug/g*		*79.9*	*50-140*			
Surrogate: Terphenyl-d14	*1.55*		*ug/g*		*116*	*50-140*			
Volatiles									
Acetone	ND	0.50	ug/g						
Benzene	ND	0.02	ug/g						
Bromodichloromethane	ND	0.05	ug/g						
Bromoform	ND	0.05	ug/g						
Bromomethane	ND	0.05	ug/g						

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Carbon Tetrachloride	ND	0.05	ug/g						
Chlorobenzene	ND	0.05	ug/g						
Chloroform	ND	0.05	ug/g						
Dibromochloromethane	ND	0.05	ug/g						
Dichlorodifluoromethane	ND	0.05	ug/g						
1,2-Dichlorobenzene	ND	0.05	ug/g						
1,3-Dichlorobenzene	ND	0.05	ug/g						
1,4-Dichlorobenzene	ND	0.05	ug/g						
1,1-Dichloroethane	ND	0.05	ug/g						
1,2-Dichloroethane	ND	0.05	ug/g						
1,1-Dichloroethylene	ND	0.05	ug/g						
cis-1,2-Dichloroethylene	ND	0.05	ug/g						
trans-1,2-Dichloroethylene	ND	0.05	ug/g						
1,2-Dichloropropane	ND	0.05	ug/g						
cis-1,3-Dichloropropylene	ND	0.05	ug/g						
trans-1,3-Dichloropropylene	ND	0.05	ug/g						
1,3-Dichloropropene, total	ND	0.05	ug/g						
Ethylbenzene	ND	0.05	ug/g						
Ethylene dibromide (dibromoethane, 1,2	ND	0.05	ug/g						
Hexane	ND	0.05	ug/g						
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g						
Methyl Isobutyl Ketone	ND	0.50	ug/g						
Methyl tert-butyl ether	ND	0.05	ug/g						
Methylene Chloride	ND	0.05	ug/g						
Styrene	ND	0.05	ug/g						
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g						
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g						
Tetrachloroethylene	ND	0.05	ug/g						
Toluene	ND	0.05	ug/g						
1,1,1-Trichloroethane	ND	0.05	ug/g						
1,1,2-Trichloroethane	ND	0.05	ug/g						
Trichloroethylene	ND	0.05	ug/g						
Trichlorofluoromethane	ND	0.05	ug/g						
Vinyl chloride	ND	0.02	ug/g						
m,p-Xylenes	ND	0.05	ug/g						
o-Xylene	ND	0.05	ug/g						
Xylenes, total	ND	0.05	ug/g						
Surrogate: 4-Bromofluorobenzene	*8.71*		*ug/g*		*109*	*50-140*			
Surrogate: Dibromofluoromethane	*7.43*		*ug/g*		*92.8*	*50-140*			
Surrogate: Toluene-d8	*9.39*		*ug/g*		*117*	*50-140*			
Benzene	ND	0.02	ug/g						
Ethylbenzene	ND	0.05	ug/g						
Toluene	ND	0.05	ug/g						
m,p-Xylenes	ND	0.05	ug/g						
o-Xylene	ND	0.05	ug/g						
Xylenes, total	ND	0.05	ug/g						
Surrogate: Toluene-d8	*9.39*		*ug/g*		*117*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
SAR	0.15	0.01	N/A	0.15			0.0	30	
Conductivity	117	5	uS/cm	118			0.9	5	
Cyanide, free	ND	0.03	ug/g dry	ND			NC	35	
pH	7.00	0.05	pH Units	7.05			0.7	2.3	
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g dry	ND			NC	40	
F2 PHCs (C10-C16)	ND	4	ug/g dry	ND			NC	30	
F3 PHCs (C16-C34)	ND	8	ug/g dry	ND			NC	30	
F4 PHCs (C34-C50)	19	6	ug/g dry	19			0.9	30	
Metals									
Antimony	2.3	1.0	ug/g dry	ND			NC	30	
Arsenic	1.8	1.0	ug/g dry	1.8			2.8	30	
Barium	18.2	1.0	ug/g dry	17.8			2.2	30	
Beryllium	ND	0.5	ug/g dry	ND			NC	30	
Boron, available	ND	0.5	ug/g dry	ND			NC	35	
Boron	ND	5.0	ug/g dry	ND			NC	30	
Cadmium	ND	0.5	ug/g dry	ND			NC	30	
Chromium (VI)	ND	0.2	ug/g dry	ND			NC	35	
Chromium	9.0	5.0	ug/g dry	9.0			0.0	30	
Cobalt	2.3	1.0	ug/g dry	2.2			4.1	30	
Copper	ND	5.0	ug/g dry	ND			NC	30	
Lead	8.2	1.0	ug/g dry	8.0			2.3	30	
Mercury	ND	0.1	ug/g dry	ND			NC	30	
Molybdenum	ND	1.0	ug/g dry	ND			NC	30	
Nickel	ND	5.0	ug/g dry	ND			NC	30	
Selenium	ND	1.0	ug/g dry	ND			NC	30	
Silver	ND	0.3	ug/g dry	ND			NC	30	
Thallium	ND	1.0	ug/g dry	ND			NC	30	
Uranium	ND	1.0	ug/g dry	ND			NC	30	
Vanadium	19.3	10.0	ug/g dry	20.9			8.1	30	
Zinc	ND	20.0	ug/g dry	ND			NC	30	
Physical Characteristics									
% Solids	80.1	0.1	% by Wt.	80.4			0.4	25	
Semi-Volatiles									
Acenaphthene	ND	0.02	ug/g dry	ND			NC	40	
Acenaphthylene	ND	0.02	ug/g dry	ND			NC	40	
Anthracene	ND	0.02	ug/g dry	ND			NC	40	
Benzo [a] anthracene	0.025	0.02	ug/g dry	ND			NC	40	
Benzo [a] pyrene	0.027	0.02	ug/g dry	ND			NC	40	
Benzo [b] fluoranthene	0.027	0.02	ug/g dry	ND			NC	40	
Benzo [g,h,i] perylene	ND	0.02	ug/g dry	ND			NC	40	
Benzo [k] fluoranthene	ND	0.02	ug/g dry	ND			NC	40	
Chrysene	0.032	0.02	ug/g dry	ND			NC	40	
Dibenzo [a,h] anthracene	ND	0.02	ug/g dry	ND			NC	40	
Fluoranthene	0.072	0.02	ug/g dry	0.041			NC	40	
Fluorene	ND	0.02	ug/g dry	ND			NC	40	
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g dry	ND			NC	40	
1-Methylnaphthalene	ND	0.02	ug/g dry	0.034			NC	40	
2-Methylnaphthalene	ND	0.02	ug/g dry	0.047			NC	40	
Naphthalene	ND	0.01	ug/g dry	0.032			NC	40	
Phenanthrene	0.050	0.02	ug/g dry	0.039			25.3	40	
Pyrene	0.057	0.02	ug/g dry	0.034			NC	40	
Surrogate: 2-Fluorobiphenyl	*1.31*		*ug/g dry*		*79.2*	*50-140*			
Surrogate: Terphenyl-d14	*1.86*		*ug/g dry*		*112*	*50-140*			
Volatiles									

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Acetone	ND	0.50	ug/g dry	ND			NC	50	
Benzene	ND	0.02	ug/g dry	ND			NC	50	
Bromodichloromethane	ND	0.05	ug/g dry	ND			NC	50	
Bromoform	ND	0.05	ug/g dry	ND			NC	50	
Bromomethane	ND	0.05	ug/g dry	ND			NC	50	
Carbon Tetrachloride	ND	0.05	ug/g dry	ND			NC	50	
Chlorobenzene	ND	0.05	ug/g dry	ND			NC	50	
Chloroform	ND	0.05	ug/g dry	ND			NC	50	
Dibromochloromethane	ND	0.05	ug/g dry	ND			NC	50	
Dichlorodifluoromethane	ND	0.05	ug/g dry	ND			NC	50	
1,2-Dichlorobenzene	ND	0.05	ug/g dry	ND			NC	50	
1,3-Dichlorobenzene	ND	0.05	ug/g dry	ND			NC	50	
1,4-Dichlorobenzene	ND	0.05	ug/g dry	ND			NC	50	
1,1-Dichloroethane	ND	0.05	ug/g dry	ND			NC	50	
1,2-Dichloroethane	ND	0.05	ug/g dry	ND			NC	50	
1,1-Dichloroethylene	ND	0.05	ug/g dry	ND			NC	50	
cis-1,2-Dichloroethylene	ND	0.05	ug/g dry	ND			NC	50	
trans-1,2-Dichloroethylene	ND	0.05	ug/g dry	ND			NC	50	
1,2-Dichloropropane	ND	0.05	ug/g dry	ND			NC	50	
cis-1,3-Dichloropropylene	ND	0.05	ug/g dry	ND			NC	50	
trans-1,3-Dichloropropylene	ND	0.05	ug/g dry	ND			NC	50	
Ethylbenzene	ND	0.05	ug/g dry	ND			NC	50	
Ethylene dibromide (dibromoethane, 1,2	ND	0.05	ug/g dry	ND			NC	50	
Hexane	ND	0.05	ug/g dry	ND			NC	50	
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g dry	ND			NC	50	
Methyl Isobutyl Ketone	ND	0.50	ug/g dry	ND			NC	50	
Methyl tert-butyl ether	ND	0.05	ug/g dry	ND			NC	50	
Methylene Chloride	ND	0.05	ug/g dry	ND			NC	50	
Styrene	ND	0.05	ug/g dry	ND			NC	50	
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g dry	ND			NC	50	
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g dry	ND			NC	50	
Tetrachloroethylene	ND	0.05	ug/g dry	ND			NC	50	
Toluene	ND	0.05	ug/g dry	ND			NC	50	
1,1,1-Trichloroethane	ND	0.05	ug/g dry	ND			NC	50	
1,1,2-Trichloroethane	ND	0.05	ug/g dry	ND			NC	50	
Trichloroethylene	ND	0.05	ug/g dry	ND			NC	50	
Trichlorofluoromethane	ND	0.05	ug/g dry	ND			NC	50	
Vinyl chloride	ND	0.02	ug/g dry	ND			NC	50	
m,p-Xylenes	ND	0.05	ug/g dry	ND			NC	50	
o-Xylene	ND	0.05	ug/g dry	ND			NC	50	
Surrogate: 4-Bromofluorobenzene	*12.3*		*ug/g dry*		*115*	*50-140*			
Surrogate: Dibromofluoromethane	*9.36*		*ug/g dry*		*87.3*	*50-140*			
Surrogate: Toluene-d8	*12.6*		*ug/g dry*		*117*	*50-140*			
Benzene	ND	0.02	ug/g dry	ND			NC	50	
Ethylbenzene	ND	0.05	ug/g dry	ND			NC	50	
Toluene	ND	0.05	ug/g dry	ND			NC	50	
m,p-Xylenes	ND	0.05	ug/g dry	ND			NC	50	
o-Xylene	ND	0.05	ug/g dry	ND			NC	50	
Surrogate: Toluene-d8	*12.6*		*ug/g dry*		*117*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
Cyanide, free	0.272	0.03	ug/g	ND	90.8	70-130			
Hydrocarbons									
F1 PHCs (C6-C10)	206	7	ug/g	ND	103	80-120			
F2 PHCs (C10-C16)	70	4	ug/g	ND	78.8	60-140			
F3 PHCs (C16-C34)	226	8	ug/g	ND	104	60-140			
F4 PHCs (C34-C50)	154	6	ug/g	19	97.7	60-140			
Metals									
Antimony	43.6	1.0	ug/g	ND	86.6	70-130			
Arsenic	47.2	1.0	ug/g	ND	92.9	70-130			
Barium	54.1	1.0	ug/g	7.1	93.9	70-130			
Beryllium	50.3	0.5	ug/g	ND	100	70-130			
Boron, available	4.86	0.5	ug/g	ND	97.2	70-122			
Boron	46.9	5.0	ug/g	ND	91.2	70-130			
Cadmium	46.2	0.5	ug/g	ND	92.4	70-130			
Chromium (VI)	0.2	0.2	ug/g	ND	82.0	70-130			
Chromium	55.8	5.0	ug/g	ND	104	70-130			
Cobalt	50.8	1.0	ug/g	ND	99.8	70-130			
Copper	49.5	5.0	ug/g	ND	95.1	70-130			
Lead	44.8	1.0	ug/g	3.2	83.2	70-130			
Mercury	1.58	0.1	ug/g	ND	105	70-130			
Molybdenum	48.8	1.0	ug/g	ND	97.2	70-130			
Nickel	49.5	5.0	ug/g	ND	95.6	70-130			
Selenium	43.1	1.0	ug/g	ND	85.8	70-130			
Silver	44.9	0.3	ug/g	ND	89.8	70-130			
Thallium	42.4	1.0	ug/g	ND	84.7	70-130			
Uranium	44.6	1.0	ug/g	ND	88.9	70-130			
Vanadium	60.1	10.0	ug/g	ND	103	70-130			
Zinc	52.9	20.0	ug/g	ND	92.7	70-130			
Semi-Volatiles									
Acenaphthene	0.237	0.02	ug/g	ND	114	50-140			
Acenaphthylene	0.230	0.02	ug/g	ND	111	50-140			
Anthracene	0.254	0.02	ug/g	ND	122	50-140			
Benzo [a] anthracene	0.235	0.02	ug/g	ND	113	50-140			
Benzo [a] pyrene	0.242	0.02	ug/g	ND	117	50-140			
Benzo [b] fluoranthene	0.258	0.02	ug/g	ND	124	50-140			
Benzo [g,h,i] perylene	0.219	0.02	ug/g	ND	106	50-140			
Benzo [k] fluoranthene	0.258	0.02	ug/g	ND	125	50-140			
Chrysene	0.253	0.02	ug/g	ND	122	50-140			
Dibenzo [a,h] anthracene	0.204	0.02	ug/g	ND	98.3	50-140			
Fluoranthene	0.251	0.02	ug/g	0.041	101	50-140			
Fluorene	0.220	0.02	ug/g	ND	106	50-140			
Indeno [1,2,3-cd] pyrene	0.220	0.02	ug/g	ND	106	50-140			
1-Methylnaphthalene	0.235	0.02	ug/g	0.034	97.0	50-140			
2-Methylnaphthalene	0.256	0.02	ug/g	0.047	101	50-140			
Naphthalene	0.277	0.01	ug/g	0.032	118	50-140			
Phenanthrene	0.270	0.02	ug/g	0.039	111	50-140			
Pyrene	0.289	0.02	ug/g	0.034	123	50-140			
Surrogate: 2-Fluorobiphenyl	*1.41*		*ug/g*		*84.8*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Surrogate: Terphenyl-d14	*1.96*		*ug/g*		*118*	*50-140*			
Volatiles									
Acetone	8.40	0.50	ug/g	ND	84.0	50-140			
Benzene	4.42	0.02	ug/g	ND	111	60-130			
Bromodichloromethane	3.61	0.05	ug/g	ND	90.1	60-130			
Bromoform	2.45	0.05	ug/g	ND	61.3	60-130			
Bromomethane	4.62	0.05	ug/g	ND	116	50-140			
Carbon Tetrachloride	2.81	0.05	ug/g	ND	70.3	60-130			
Chlorobenzene	4.47	0.05	ug/g	ND	112	60-130			
Chloroform	3.93	0.05	ug/g	ND	98.3	60-130			
Dibromochloromethane	3.05	0.05	ug/g	ND	76.2	60-130			
Dichlorodifluoromethane	4.30	0.05	ug/g	ND	108	50-140			
1,2-Dichlorobenzene	4.29	0.05	ug/g	ND	107	60-130			
1,3-Dichlorobenzene	4.23	0.05	ug/g	ND	106	60-130			
1,4-Dichlorobenzene	4.24	0.05	ug/g	ND	106	60-130			
1,1-Dichloroethane	4.24	0.05	ug/g	ND	106	60-130			
1,2-Dichloroethane	3.92	0.05	ug/g	ND	97.9	60-130			
1,1-Dichloroethylene	4.58	0.05	ug/g	ND	115	60-130			
cis-1,2-Dichloroethylene	4.27	0.05	ug/g	ND	107	60-130			
trans-1,2-Dichloroethylene	4.30	0.05	ug/g	ND	107	60-130			
1,2-Dichloropropane	4.78	0.05	ug/g	ND	120	60-130			
cis-1,3-Dichloropropylene	3.70	0.05	ug/g	ND	92.5	60-130			
trans-1,3-Dichloropropylene	3.07	0.05	ug/g	ND	76.7	60-130			
Ethylbenzene	4.49	0.05	ug/g	ND	112	60-130			
Ethylene dibromide (dibromoethane, 1,2-	4.32	0.05	ug/g	ND	108	60-130			
Hexane	4.02	0.05	ug/g	ND	100	60-130			
Methyl Ethyl Ketone (2-Butanone)	11.5	0.50	ug/g	ND	115	50-140			
Methyl Isobutyl Ketone	10.2	0.50	ug/g	ND	102	50-140			
Methyl tert-butyl ether	8.01	0.05	ug/g	ND	80.1	50-140			
Methylene Chloride	3.87	0.05	ug/g	ND	96.8	60-130			
Styrene	4.52	0.05	ug/g	ND	113	60-130			
1,1,1,2-Tetrachloroethane	2.97	0.05	ug/g	ND	74.2	60-130			
1,1,2,2-Tetrachloroethane	4.63	0.05	ug/g	ND	116	60-130			
Tetrachloroethylene	4.91	0.05	ug/g	ND	123	60-130			
Toluene	5.16	0.05	ug/g	ND	129	60-130			
1,1,1-Trichloroethane	3.89	0.05	ug/g	ND	97.2	60-130			
1,1,2-Trichloroethane	4.88	0.05	ug/g	ND	122	60-130			
Trichloroethylene	4.58	0.05	ug/g	ND	114	60-130			
Trichlorofluoromethane	3.38	0.05	ug/g	ND	84.4	50-140			
Vinyl chloride	3.87	0.02	ug/g	ND	96.8	50-140			
m,p-Xylenes	9.04	0.05	ug/g	ND	113	60-130			
o-Xylene	4.28	0.05	ug/g	ND	107	60-130			
Surrogate: 4-Bromofluorobenzene	*8.31*		*ug/g*		*104*	*50-140*			
Surrogate: Dibromofluoromethane	*7.20*		*ug/g*		*90.1*	*50-140*			
Surrogate: Toluene-d8	*8.64*		*ug/g*		*108*	*50-140*			
Benzene	4.42	0.02	ug/g	ND	111	60-130			
Ethylbenzene	4.49	0.05	ug/g	ND	112	60-130			
Toluene	5.16	0.05	ug/g	ND	129	60-130			
m,p-Xylenes	9.04	0.05	ug/g	ND	113	60-130			
o-Xylene	4.28	0.05	ug/g	ND	107	60-130			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Surrogate: Toluene-d8	*8.64*		*ug/g*		*108*	*50-140*			

Qualifier Notes:

QC Qualifiers :

Sample Data Revisions

None

Work Order Revisions / Comments:

REVISION 1: This report includes an updated parameter list as per the client.

Other Report Notes:

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

Soil results are reported on a dry weight basis when the units are denoted with 'dry'.
Where %Solids is reported, moisture loss includes the loss of volatile hydrocarbons.

CCME PHC additional information:

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.
- F1 range corrected for BTEX.
- F2 to F3 ranges corrected for appropriate PAHs where available.
- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.
- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.
- When reported, data for F4G has been processed using a silica gel cleanup.

PARAC LABORATORIES

Paracel ID: 2112125

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ellabs.com
.com

Paracel Order Number (Lab Use Only): 21/2125

Chain Of Custody (Lab Use Only)
№ 129775

Client Name: Gemtec	Project Ref: 100411.001	Page 1 of 1
Contact Name: NS	Quote #: 21-113	Turnaround Time
Address: 32 Steacie Drive	PO #:	☐ 1 day ☐ 3 day
	E-mail: nicole.soucy@gemtec.ca	☐ 2 day ☒ Regular
Telephone: 613-836-1422		Date Required:

Regulation 153/04: ☒ Table 1 ☐ Res/Park ☐ Med/Fine ☐ Table 2 ☐ Ind/Comm ☐ Coarse ☐ Table 3 ☐ Agri/Other ☐ Table ___ For RSC: ☐ Yes ☒ No

Other Regulation: ☐ REG 558 ☐ PWQO ☐ CCME ☐ MISA ☐ SU - Sani ☐ SU - Storm Mun: ☐ Other:

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

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken: Date	Sample Taken: Time	PHCs F1-F4+BTEX	VOCs	PAHs	Metals by ICP B1	Hg	CrVI	B (HWS)	OCP
1	BH21-2 SA-1	S	N/A	2	March 15/21		X		X	X				
2	BH21-7 SA-1			2			X		X	X				
3	BH21-4 SA-1			2 3			X		X	X				X
4	BH21-4 SA-6			3			X			X				X
5	BH21-4 SA-10			2			X		X	X				
6	BH21-4 SA-106			1										X
7														
8														
9														
10														

Comments:

Method of Delivery: Drop Box

Relinquished By (Sign):	Received By Driver/Depot: Ally	Received at Lab: Jurneepam Dohmai	Verified By:
Relinquished By (Print): R. Fox	Date/Time: Mar 15/21 14:34	Date: Mar 15, 2021 04:25	Date/Time: 3-15-21 16:53
Date/Time: March 15/2021 13:00	Temperature: 8.6 °C	Temperature: 3.1 °C	pH Verified: ☐ By:

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Subcontracted Analysis

GEMTEC Consulting Engineers and Scientists Limited
32 Steacie Drive
Kanata, ON K2K 2A9
Attn: Nicole Soucy

Tel: (613) 836-1422
Fax: (613) 836-9731

Paracel Report No **2111041**
Client Project(s): **100441.001**
Client PO:
Reference: **#21-113 Gemtec - 100441.00 - 3955 Kelly Farm Drive**
CoC Number: **130456**

Order Date: 05-Mar-21
Report Date: 10-Mar-21

Sample(s) from this project were subcontracted for the listed parameters. A copy of the subcontractor's report is attached

Paracel ID	Client ID	Analysis
2111041-01	BH-21-1 SA-2	Pesticides - Organochlorine in soil
2111041-05	BH21-6 SA-1	Pesticides - Organochlorine in soil
2111041-06	BH21-6 SA-4	Pesticides - Organochlorine in soil
2111041-07	BH21-8 SA-2	Pesticides - Organochlorine in soil

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CERTIFICATE OF ANALYSIS

Client:	Dale Robertson	Work Order Number:	424823
Company:	Paracel Laboratories Ltd.- Ottawa	PO #:	
Address:	300-2319 St. Laurent Blvd. Ottawa, ON, K1G 4J8	Regulation: Project #:	O.Reg 153 Table 1 Soil Stringent Criteria 2111041
Phone/Fax:	(613) 731-9577 / (613) 731-9064	DWS #:	
Email:	drobertson@paracellabs.com	Sampled By:	
Date Order Received:	3/9/2021	Analysis Started:	3/15/2021
Arrival Temperature:	12 °C	Analysis Completed:	3/15/2021

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
BH-21-1 SA-2	1624131	Soil	None		3/5/2021	
BH-21-6 SA-1	1624132	Soil	None		3/5/2021	
BH-21-6 SA-4	1624133	Soil	None		3/5/2021	
BH-21-8 SA-2	1624134	Soil	None		3/5/2021	

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Moisture (A99)	Garson	Determination of Percent Moisture	In-House
OCPs Soil (A19)	Garson	Determination of Organochlorine Pesticides in Soil by GC/ECD	Modified from SW846-8081B

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CERTIFICATE OF ANALYSIS

Paracel Laboratories Ltd.- Ottawa

Work Order Number: 424823

This report has been approved by:

Brad Halvorson, B.Sc.
Laboratory Director

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CERTIFICATE OF ANALYSIS

Paracel Laboratories Ltd.- Ottawa

Work Order Number: 424823

WORK ORDER RESULTS

Sample Description	BH - 21 - 1 SA - 2		BH - 21 - 6 SA - 1		BH - 21 - 6 SA - 4		BH - 21 - 8 SA - 2			
Sample Date	3/5/2021 12:00 AM		3/5/2021 12:00 AM		3/5/2021 12:00 AM		3/5/2021 12:00 AM			
Lab ID	1624131		1624132		1624133		1624134			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: O.Reg 153 Table 1 Soil Stringent Criteria
% Moisture	23.3	0.1	28.1	0.1	20.0	0.1	15.2	0.1	%	~

Sample Description	BH - 21 - 1 SA - 2		BH - 21 - 6 SA - 1		BH - 21 - 6 SA - 4		BH - 21 - 8 SA - 2			
Sample Date	3/5/2021 12:00 AM		3/5/2021 12:00 AM		3/5/2021 12:00 AM		3/5/2021 12:00 AM			
Lab ID	1624131		1624132		1624133		1624134			
OC Pesticides	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: O.Reg 153 Table 1 Soil Stringent Criteria
2,4'-DDD	<0.009	0.009	<0.009	0.009	<0.01	0.01	<0.01 [<0.009]	0.01	µg/g	~
2,4'-DDE	<0.009	0.009	<0.009	0.009	<0.01	0.01	<0.01 [<0.009]	0.01	µg/g	~
2,4'-DDT	<0.009	0.009	<0.009	0.009	<0.01	0.01	<0.01 [<0.009]	0.01	µg/g	~
4,4'-DDD	<0.009	0.009	<0.009	0.009	<0.01	0.01	<0.01 [<0.009]	0.01	µg/g	~
4,4'-DDE	<0.009	0.009	<0.009	0.009	<0.01	0.01	<0.01 [<0.009]	0.01	µg/g	~
4,4'-DDT	<0.009	0.009	<0.009	0.009	<0.01	0.01	<0.01 [<0.009]	0.01	µg/g	~
Aldrin	<0.009	0.009	<0.009	0.009	<0.01	0.01	<0.01 [<0.009]	0.01	µg/g	0.05
DDD (Total) (Calc.)	<0.009	0.009	<0.009	0.009	<0.01	0.01	<0.01 [<0.009]	0.01	µg/g	0.05
DDE (Total) (Calc.)	<0.009	0.009	<0.009	0.009	<0.01	0.01	<0.01 [<0.009]	0.01	µg/g	0.05
DDT (Total) (Calc.)	<0.009	0.009	<0.009	0.009	<0.01	0.01	<0.01 [<0.009]	0.01	µg/g	0.078

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CERTIFICATE OF ANALYSIS

Paracel Laboratories Ltd.- Ottawa

Work Order Number: 424823

Sample Description	BH - 21 - 1 SA - 2		BH - 21 - 6 SA - 1		BH - 21 - 6 SA - 4		BH - 21 - 8 SA - 2			
Sample Date	3/5/2021 12:00 AM		3/5/2021 12:00 AM		3/5/2021 12:00 AM		3/5/2021 12:00 AM			
Lab ID	1624131		1624132		1624133		1624134			
OC Pesticides	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: O.Reg 153 Table 1 Soil Stringent Criteria
Decachlorobiphenyl (Surr.)	124	N/A	136	N/A	132	N/A	112 [113]	N/A	% Rec	~
Dieldrin	<0.009	0.009	<0.009	0.009	<0.01	0.01	<0.01 [<0.009]	0.01	µg/g	0.05
Endosulfan I	<0.009	0.009	<0.009	0.009	<0.01	0.01	<0.01 [<0.009]	0.01	µg/g	~
Endosulfan I + II (Calc.)	<0.009	0.009	<0.009	0.009	<0.01	0.01	<0.01 [<0.009]	0.01	µg/g	0.04
Endosulfan II	<0.009	0.009	<0.009	0.009	<0.01	0.01	<0.01 [<0.009]	0.01	µg/g	~
Endosulfan sulfate	<0.009	0.009	<0.009	0.009	<0.01	0.01	<0.01 [<0.009]	0.01	µg/g	~
Endrin	<0.009	0.009	<0.009	0.009	<0.01	0.01	<0.01 [<0.009]	0.01	µg/g	0.04
Endrin aldehyde	<0.009	0.009	<0.009	0.009	<0.01	0.01	<0.01 [<0.009]	0.01	µg/g	~
Heptachlor	<0.009	0.009	<0.009	0.009	<0.01	0.01	<0.01 [<0.009]	0.01	µg/g	0.05
Heptachlor epoxide	<0.009	0.009	<0.009	0.009	<0.01	0.01	<0.01 [<0.009]	0.01	µg/g	0.05
Hexachlorobenzene	<0.009	0.009	<0.009	0.009	<0.01	0.01	<0.01 [<0.009]	0.01	µg/g	0.01
Hexachlorobutadiene	<0.009	0.009	<0.009	0.009	<0.01	0.01	<0.01 [<0.009]	0.01	µg/g	0.01
Hexachloroethane	<0.009	0.009	<0.009	0.009	<0.01	0.01	<0.01 [<0.009]	0.01	µg/g	0.01
Methoxychlor	<0.009	0.009	<0.009	0.009	<0.01	0.01	<0.01 [<0.009]	0.01	µg/g	0.05
Mirex	<0.009	0.009	<0.009	0.009	<0.01	0.01	<0.01 [<0.009]	0.01	µg/g	~
Oxychlordane	<0.009	0.009	<0.009	0.009	<0.01	0.01	<0.01 [<0.009]	0.01	µg/g	~

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CERTIFICATE OF ANALYSIS

Paracel Laboratories Ltd.- Ottawa

Work Order Number: 424823

Sample Description	BH - 21 - 1 SA - 2		BH - 21 - 6 SA - 1		BH - 21 - 6 SA - 4		BH - 21 - 8 SA - 2			
Sample Date	3/5/2021 12:00 AM		3/5/2021 12:00 AM		3/5/2021 12:00 AM		3/5/2021 12:00 AM			
Lab ID	1624131		1624132		1624133		1624134			
OC Pesticides	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: O.Reg 153 Table 1 Soil Stringent Criteria
ß-BHC	<0.009	0.009	<0.009	0.009	<0.01	0.01	<0.01 [<0.009]	0.01	µg/g	~
α - Chlordane	<0.009	0.009	<0.009	0.009	<0.01	0.01	<0.01 [<0.009]	0.01	µg/g	~
α + γ -Chlordane (Calc.)	<0.009	0.009	<0.009	0.009	<0.01	0.01	<0.01 [<0.009]	0.01	µg/g	0.05
α-BHC	<0.009	0.009	<0.009	0.009	<0.01	0.01	<0.01 [<0.009]	0.01	µg/g	~
γ - Chlordane	<0.009	0.009	<0.009	0.009	<0.01	0.01	<0.01 [<0.009]	0.01	µg/g	~
γ-BHC (Lindane)	<0.009	0.009	<0.009	0.009	<0.01	0.01	<0.01 [<0.009]	0.01	µg/g	0.01
δ-BHC	<0.009	0.009	<0.009	0.009	<0.01	0.01	<0.01 [<0.009]	0.01	µg/g	~

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CERTIFICATE OF ANALYSIS

Paracel Laboratories Ltd.- Ottawa

Work Order Number: 424823

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

[rr]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

MDL: Method detection limit or minimum reporting limit.

[ ]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

% Rec: Surrogate compounds are added to the sample in some cases and the recovery is reported as a % recovered.

~: In a criteria column indicates the criteria is not applicable for the parameter row.

Quality Control: All associated Quality Control data is available on request.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

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Subcontracted Analysis

GEMTEC Consulting Engineers and Scientists Limited
32 Steacie Drive
Kanata, ON K2K 2A9
Attn: Nicole Soucy

Tel: (613) 836-1422
Fax: (613) 836-9731

Paracel Report No **2112125**
Client Project(s): **100441.001**
Client PO:
Reference: **#21-113 Gemtec - 100441.00 - 3955 Kelly Farm Drive**
CoC Number: **129775**

Order Date: 15-Mar-21
Report Date: 18-Mar-21

Sample(s) from this project were subcontracted for the listed parameters. A copy of the subcontractor's report is attached

Paracel ID	Client ID	Analysis
2112125-03	BH21-4 SA-1	Pesticides - Organochlorine in soil
2112125-04	BH21-4 SA-6	Pesticides - Organochlorine in soil
2112125-06	BH21-4 SA-106	Pesticides - Organochlorine in soil

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CERTIFICATE OF ANALYSIS

Client:	Dale Robertson	Work Order Number:	425489
Company:	Paracel Laboratories Ltd.- Ottawa	PO #:	
Address:	300-2319 St. Laurent Blvd. Ottawa, ON, K1G 4J8	Regulation: Project #:	O.Reg 153 Table 1 Soil Stringent Criteria 2112125
Phone/Fax:	(613) 731-9577 / (613) 731-9064	DWS #:	
Email:	drobertson@paracellabs.com	Sampled By:	
Date Order Received:	3/17/2021	Analysis Started:	3/19/2021
Arrival Temperature:	15 °C	Analysis Completed:	3/23/2021

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
BH21-4 SA-1	1626284	Soil	None		3/15/2021	
BH21-4 SA-6	1626285	Soil	None		3/15/2021	
BH21-4 SA-106	1626286	Soil	None		3/15/2021	

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Moisture (A99)	Garson	Determination of Percent Moisture	In-House
OCPs Soil (A19)	Garson	Determination of Organochlorine Pesticides in Soil by GC/ECD	Modified from SW846-8081B

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CERTIFICATE OF ANALYSIS

Paracel Laboratories Ltd.- Ottawa

Work Order Number: 425489

This report has been approved by:

Brad Halvorson, B.Sc.
Laboratory Director

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CERTIFICATE OF ANALYSIS

Paracel Laboratories Ltd.- Ottawa

Work Order Number: 425489

WORK ORDER RESULTS

Sample Description	BH21 - 4 SA - 1		BH21 - 4 SA - 6		BH21 - 4 SA - 106			
Sample Date	3/15/2021 12:00 AM		3/15/2021 12:00 AM		3/15/2021 12:00 AM			
Lab ID	1626284		1626285		1626286			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: O.Reg 153 Table 1 Soil Stringent Criteria
% Moisture	16.2	0.1	20.9	0.1	17.3	0.1	%	~

Sample Description	BH21 - 4 SA - 1		BH21 - 4 SA - 6		BH21 - 4 SA - 106			
Sample Date	3/15/2021 12:00 AM		3/15/2021 12:00 AM		3/15/2021 12:00 AM			
Lab ID	1626284		1626285		1626286			
OC Pesticides	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: O.Reg 153 Table 1 Soil Stringent Criteria
2,4'-DDD	<0.009	0.009	<0.01	0.01	<0.01	0.01	µg/g	~
2,4'-DDE	<0.009	0.009	<0.01	0.01	<0.01	0.01	µg/g	~
2,4'-DDT	<0.009	0.009	<0.01	0.01	<0.01	0.01	µg/g	~
4,4'-DDD	<0.009	0.009	<0.01	0.01	<0.01	0.01	µg/g	~
4,4'-DDE	<0.009	0.009	<0.01	0.01	<0.01	0.01	µg/g	~
4,4'-DDT	<0.009	0.009	<0.01	0.01	<0.01	0.01	µg/g	~
Aldrin	<0.009	0.009	<0.01	0.01	<0.01	0.01	µg/g	0.05
DDD (Total) (Calc.)	<0.009	0.009	<0.01	0.01	<0.01	0.01	µg/g	0.05
DDE (Total) (Calc.)	<0.009	0.009	<0.01	0.01	<0.01	0.01	µg/g	0.05
DDT (Total) (Calc.)	<0.009	0.009	<0.01	0.01	<0.01	0.01	µg/g	0.078
Decachlorobiphenyl (Surr.)	129	N/A	122	N/A	127	N/A	% Rec	~
Dieldrin	<0.009	0.009	<0.01	0.01	<0.01	0.01	µg/g	0.05
Endosulfan I	<0.009	0.009	<0.01	0.01	<0.01	0.01	µg/g	~
Endosulfan I + II (Calc.)	<0.009	0.009	<0.01	0.01	<0.01	0.01	µg/g	0.04

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CERTIFICATE OF ANALYSIS

Paracel Laboratories Ltd.- Ottawa

Work Order Number: 425489

Sample Description	BH21 - 4 SA - 1		BH21 - 4 SA - 6		BH21 - 4 SA - 106			
Sample Date	3/15/2021 12:00 AM		3/15/2021 12:00 AM		3/15/2021 12:00 AM			
Lab ID	1626284		1626285		1626286			
OC Pesticides	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: O.Reg 153 Table 1 Soil Stringent Criteria
Endosulfan II	<0.009	0.009	<0.01	0.01	<0.01	0.01	µg/g	~
Endosulfan sulfate	<0.009	0.009	<0.01	0.01	<0.01	0.01	µg/g	~
Endrin	<0.009	0.009	<0.01	0.01	<0.01	0.01	µg/g	0.04
Endrin aldehyde	<0.009	0.009	<0.01	0.01	<0.01	0.01	µg/g	~
Heptachlor	<0.009	0.009	<0.01	0.01	<0.01	0.01	µg/g	0.05
Heptachlor epoxide	<0.009	0.009	<0.01	0.01	<0.01	0.01	µg/g	0.05
Hexachlorobenzene	<0.009	0.009	<0.01	0.01	<0.01	0.01	µg/g	0.01
Hexachlorobutadiene	<0.009	0.009	<0.01	0.01	<0.01	0.01	µg/g	0.01
Hexachloroethane	<0.009	0.009	<0.01	0.01	<0.01	0.01	µg/g	0.01
Methoxychlor	<0.009	0.009	<0.01	0.01	<0.01	0.01	µg/g	0.05
Mirex	<0.009	0.009	<0.01	0.01	<0.01	0.01	µg/g	~
Oxychlordane	<0.009	0.009	<0.01	0.01	<0.01	0.01	µg/g	~
ß-BHC	<0.009	0.009	<0.01	0.01	<0.01	0.01	µg/g	~
α - Chlordane	<0.009	0.009	<0.01	0.01	<0.01	0.01	µg/g	~
α + γ -Chlordane (Calc.)	<0.009	0.009	<0.01	0.01	<0.01	0.01	µg/g	0.05
α-BHC	<0.009	0.009	<0.01	0.01	<0.01	0.01	µg/g	~
γ - Chlordane	<0.009	0.009	<0.01	0.01	<0.01	0.01	µg/g	~
γ-BHC (Lindane)	<0.009	0.009	<0.01	0.01	<0.01	0.01	µg/g	0.01
δ-BHC	<0.009	0.009	<0.01	0.01	<0.01	0.01	µg/g	~

7 Margaret Street, Garson, ON, P3L 1E1
Phone: (705) 693-1121 Fax: (705) 693-1124 Web: www.testmark.ca

CERTIFICATE OF ANALYSIS

Paracel Laboratories Ltd.- Ottawa

Work Order Number: 425489

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

[rr]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

MDL: Method detection limit or minimum reporting limit.

% Rec: Surrogate compounds are added to the sample in some cases and the recovery is reported as a % recovered.

~: In a criteria column indicates the criteria is not applicable for the parameter row.

Quality Control: All associated Quality Control data is available on request.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

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Certificate of Analysis

GEMTEC Consulting Engineers and Scientists Limited

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

Client PO:
Project: 100441.001
Custody:

Report Date: 23-Mar-2021
Order Date: 17-Mar-2021

Order #: 2112364

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

Paracel ID	Client ID
2112364-01	MW21-1
2112364-02	MW21-4
2112364-03	MW21-6
2112364-04	MW21-104
2112364-05	Trip Blank

Approved By:

Mark Foto

Mark Foto, M.Sc.
Lab Supervisor

Certificate of Analysis

Report Date: 23-Mar-2021

Client: GEMTEC Consulting Engineers and Scientists Limited

Order Date: 17-Mar-2021

Client PO:

Project Description: 100441.001

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Anions	EPA 300.1 - IC	18-Mar-21	18-Mar-21
Chromium, hexavalent - water	MOE E3056 - colourimetric	17-Mar-21	18-Mar-21
Cyanide, free	MOE E3015 - Auto Colour	18-Mar-21	18-Mar-21
Mercury by CVAA	EPA 245.2 - Cold Vapour AA	18-Mar-21	19-Mar-21
Metals, ICP-MS	EPA 200.8 - ICP-MS	19-Mar-21	19-Mar-21
pH	EPA 150.1 - pH probe @25 °C	22-Mar-21	22-Mar-21
PHC F1	CWS Tier 1 - P&T GC-FID	18-Mar-21	18-Mar-21
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	18-Mar-21	19-Mar-21
REG 153: PAHs by GC-MS	EPA 625 - GC-MS, extraction	19-Mar-21	22-Mar-21
REG 153: Pesticides, OC	EPA 8081B - GC-ECD	17-Mar-21	18-Mar-21
REG 153: VOCs by P&T GC/MS	EPA 624 - P&T GC-MS	18-Mar-21	18-Mar-21

Certificate of Analysis

Report Date: 23-Mar-2021

Client: GEMTEC Consulting Engineers and Scientists Limited

Order Date: 17-Mar-2021

Client PO:

Project Description: 100441.001

	Client ID:	MW21-1	MW21-4	MW21-6	MW21-104
	Sample Date:	17-Mar-21 00:00	17-Mar-21 00:00	17-Mar-21 00:00	17-Mar-21 00:00
	Sample ID:	2112364-01	2112364-02	2112364-03	2112364-04
	MDL/Units	Water	Water	Water	Water
General Inorganics					
Cyanide, free	2 ug/L	<2	<2	<2	<2
pH	0.1 pH Units	7.8	7.6	7.9	7.7
Anions					
Chloride	1 mg/L	130	60	67	52
Metals					
Mercury	0.1 ug/L	<0.1	<0.1	<0.1	<0.1
Antimony	0.5 ug/L	0.6	<0.5	<0.5	<0.5
Arsenic	1 ug/L	2	<1	3	<1
Barium	1 ug/L	321	113	507	125
Beryllium	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Boron	10 ug/L	39	28	34	24
Cadmium	0.1 ug/L	<0.1	<0.1	<0.1	<0.1
Chromium	1 ug/L	<1	<1	<1	<1
Chromium (VI)	10 ug/L	<10	<10	<10	<10
Cobalt	0.5 ug/L	<0.5	0.6	<0.5	<0.5
Copper	0.5 ug/L	0.6	2.4	1.0	1.9
Lead	0.1 ug/L	<0.1	<0.1	<0.1	<0.1
Molybdenum	0.5 ug/L	3.7	3.1	2.4	1.9
Nickel	1 ug/L	3	3	2	2
Selenium	1 ug/L	<1	<1	<1	<1
Silver	0.1 ug/L	<0.1	<0.1	<0.1	<0.1
Sodium	200 ug/L	35100	31600	13200	22200
Thallium	0.1 ug/L	<0.1	<0.1	<0.1	<0.1
Uranium	0.1 ug/L	1.2	5.7	1.1	4.7
Vanadium	0.5 ug/L	<0.5	0.9	1.1	1.1
Zinc	5 ug/L	<5	<5	<5	<5
Volatiles					
Acetone	5.0 ug/L	<5.0	<5.0	<5.0 [5]	<5.0
Benzene	0.5 ug/L	<0.5	<0.5	<0.5 [5]	<0.5
Bromodichloromethane	0.5 ug/L	<0.5	<0.5	<0.5 [5]	<0.5
Bromoform	0.5 ug/L	<0.5	<0.5	<0.5 [5]	<0.5
Bromomethane	0.5 ug/L	<0.5	<0.5	<0.5 [5]	<0.5
Carbon Tetrachloride	0.2 ug/L	<0.2	<0.2	<0.2 [5]	<0.2
Chlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5 [5]	<0.5
Chloroform	0.5 ug/L	<0.5	<0.5	<0.5 [5]	<0.5

Certificate of Analysis

Report Date: 23-Mar-2021

Client: GEMTEC Consulting Engineers and Scientists Limited

Order Date: 17-Mar-2021

Client PO:

Project Description: 100441.001

	Client ID:	MW21-1	MW21-4	MW21-6	MW21-104
	Sample Date:	17-Mar-21 00:00	17-Mar-21 00:00	17-Mar-21 00:00	17-Mar-21 00:00
	Sample ID:	2112364-01	2112364-02	2112364-03	2112364-04
	MDL/Units	Water	Water	Water	Water
Dibromochloromethane	0.5 ug/L	<0.5	<0.5	<0.5 [5]	<0.5
Dichlorodifluoromethane	1.0 ug/L	<1.0	<1.0	<1.0 [5]	<1.0
1,2-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5 [5]	<0.5
1,3-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5 [5]	<0.5
1,4-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5 [5]	<0.5
1,1-Dichloroethane	0.5 ug/L	<0.5	<0.5	<0.5 [5]	<0.5
1,2-Dichloroethane	0.5 ug/L	<0.5	<0.5	<0.5 [5]	<0.5
1,1-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5 [5]	<0.5
cis-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5 [5]	<0.5
trans-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5 [5]	<0.5
1,2-Dichloropropane	0.5 ug/L	<0.5	<0.5	<0.5 [5]	<0.5
cis-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	<0.5 [5]	<0.5
trans-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	<0.5 [5]	<0.5
1,3-Dichloropropene, total	0.5 ug/L	<0.5	<0.5	<0.5 [5]	<0.5
Ethylbenzene	0.5 ug/L	<0.5	<0.5	<0.5 [5]	<0.5
Ethylene dibromide (dibromoethane, 1,2-)	0.2 ug/L	<0.2	<0.2	<0.2 [5]	<0.2
Hexane	1.0 ug/L	<1.0	<1.0	<1.0 [5]	<1.0
Methyl Ethyl Ketone (2-Butanone)	5.0 ug/L	<5.0	<5.0	<5.0 [5]	<5.0
Methyl Isobutyl Ketone	5.0 ug/L	<5.0	<5.0	<5.0 [5]	<5.0
Methyl tert-butyl ether	2.0 ug/L	<2.0	<2.0	<2.0 [5]	<2.0
Methylene Chloride	5.0 ug/L	<5.0	<5.0	<5.0 [5]	<5.0
Styrene	0.5 ug/L	<0.5	<0.5	<0.5 [5]	<0.5
1,1,1,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	<0.5 [5]	<0.5
1,1,2,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	<0.5 [5]	<0.5
Tetrachloroethylene	0.5 ug/L	<0.5	<0.5	<0.5 [5]	<0.5
Toluene	0.5 ug/L	<0.5	<0.5	<0.5 [5]	<0.5
1,1,1-Trichloroethane	0.5 ug/L	<0.5	<0.5	<0.5 [5]	<0.5
1,1,2-Trichloroethane	0.5 ug/L	<0.5	<0.5	<0.5 [5]	<0.5
Trichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5 [5]	<0.5
Trichlorofluoromethane	1.0 ug/L	<1.0	<1.0	<1.0 [5]	<1.0
Vinyl chloride	0.5 ug/L	<0.5	<0.5	<0.5 [5]	<0.5
m,p-Xylenes	0.5 ug/L	<0.5	<0.5	<0.5 [5]	<0.5
o-Xylene	0.5 ug/L	<0.5	<0.5	<0.5 [5]	<0.5
Xylenes, total	0.5 ug/L	<0.5	<0.5	<0.5 [5]	<0.5
4-Bromofluorobenzene	Surrogate	89.6%	91.5%	90.0% [5]	91.4%
Dibromofluoromethane	Surrogate	90.8%	87.3%	88.6% [5]	88.9%

Certificate of Analysis

Report Date: 23-Mar-2021

Client: GEMTEC Consulting Engineers and Scientists Limited

Order Date: 17-Mar-2021

Client PO:

Project Description: 100441.001

	Client ID:	MW21-1	MW21-4	MW21-6	MW21-104
	Sample Date:	17-Mar-21 00:00	17-Mar-21 00:00	17-Mar-21 00:00	17-Mar-21 00:00
	Sample ID:	2112364-01	2112364-02	2112364-03	2112364-04
	MDL/Units	Water	Water	Water	Water
Toluene-d8	Surrogate	107%	106%	106% [5]	107%
Hydrocarbons					
F1 PHCs (C6-C10)	25 ug/L	<25	<25	<25 [5]	<25
F2 PHCs (C10-C16)	100 ug/L	<100	<100	<100 [4]	<100
F3 PHCs (C16-C34)	100 ug/L	<100	<100	150 [4]	<100
F4 PHCs (C34-C50)	100 ug/L	<100	<100	<100 [4]	<100
Semi-Volatiles					
Acenaphthene	0.05 ug/L	<0.05	<0.05	<0.05 [4]	<0.05
Acenaphthylene	0.05 ug/L	<0.05	<0.05	<0.05 [4]	<0.05
Anthracene	0.01 ug/L	<0.01	<0.01	<0.01 [4]	<0.01
Benzo [a] anthracene	0.01 ug/L	<0.01	<0.01	<0.01 [4]	<0.01
Benzo [a] pyrene	0.01 ug/L	<0.01	<0.01	<0.01 [4]	<0.01
Benzo [b] fluoranthene	0.05 ug/L	<0.05	<0.05	<0.05 [4]	<0.05
Benzo [g,h,i] perylene	0.05 ug/L	<0.05	<0.05	<0.05 [4]	<0.05
Benzo [k] fluoranthene	0.05 ug/L	<0.05	<0.05	<0.05 [4]	<0.05
Chrysene	0.05 ug/L	<0.05	<0.05	<0.05 [4]	<0.05
Dibenzo [a,h] anthracene	0.05 ug/L	<0.05	<0.05	<0.05 [4]	<0.05
Fluoranthene	0.01 ug/L	<0.01	<0.01	<0.01 [4]	<0.01
Fluorene	0.05 ug/L	<0.05	<0.05	<0.05 [4]	<0.05
Indeno [1,2,3-cd] pyrene	0.05 ug/L	<0.05	<0.05	<0.05 [4]	<0.05
1-Methylnaphthalene	0.05 ug/L	<0.05	<0.05	<0.05 [4]	<0.05
2-Methylnaphthalene	0.05 ug/L	<0.05	<0.05	<0.05 [4]	<0.05
Methylnaphthalene (1&2)	0.10 ug/L	<0.10	<0.10	<0.10 [4]	<0.10
Naphthalene	0.05 ug/L	<0.05	<0.05	<0.05 [4]	<0.05
Phenanthrene	0.05 ug/L	<0.05	<0.05	<0.05 [4]	<0.05
Pyrene	0.01 ug/L	<0.01	<0.01	<0.01 [4]	<0.01
2-Fluorobiphenyl	Surrogate	84.9%	86.6%	86.8% [4]	85.8%
Terphenyl-d14	Surrogate	114%	120%	117% [4]	95.1%
Pesticides, OC					
Aldrin	0.01 ug/L	<0.01	<0.01	<0.01	<0.01
alpha-Chlordane	0.01 ug/L	<0.01	<0.01	<0.01	<0.01
gamma-Chlordane	0.01 ug/L	<0.01	<0.01	<0.01	<0.01
Chlordane	0.01 ug/L	<0.01	<0.01	<0.01	<0.01
o,p'-DDD	0.01 ug/L	<0.01	<0.01	<0.01	<0.01
p,p'-DDD	0.01 ug/L	<0.01	<0.01	<0.01	<0.01
DDD	0.01 ug/L	<0.01	<0.01	<0.01	<0.01

Certificate of Analysis

Report Date: 23-Mar-2021

Client: GEMTEC Consulting Engineers and Scientists Limited

Order Date: 17-Mar-2021

Client PO:

Project Description: 100441.001

	Client ID:	MW21-1	MW21-4	MW21-6	MW21-104
	Sample Date:	17-Mar-21 00:00	17-Mar-21 00:00	17-Mar-21 00:00	17-Mar-21 00:00
	Sample ID:	2112364-01	2112364-02	2112364-03	2112364-04
	MDL/Units	Water	Water	Water	Water
o,p'-DDE	0.01 ug/L	<0.01	<0.01	<0.01	<0.01
p,p'-DDE	0.01 ug/L	<0.01	<0.01	<0.01	<0.01
DDE	0.01 ug/L	<0.01	<0.01	<0.01	<0.01
o,p'-DDT	0.01 ug/L	<0.01	<0.01	<0.01	<0.01
p,p'-DDT	0.01 ug/L	<0.01	<0.01	<0.01	<0.01
DDT	0.01 ug/L	<0.01	<0.01	<0.01	<0.01
Dieldrin	0.01 ug/L	<0.01	<0.01	<0.01	<0.01
Endosulfan I	0.01 ug/L	<0.01	<0.01	<0.01	<0.01
Endosulfan II	0.01 ug/L	<0.01	<0.01	<0.01	<0.01
Endosulfan I/II	0.01 ug/L	<0.01	<0.01	<0.01	<0.01
Endrin	0.01 ug/L	<0.01	<0.01	<0.01	<0.01
Heptachlor	0.01 ug/L	<0.01	<0.01	<0.01	<0.01
Heptachlor epoxide	0.01 ug/L	<0.01	<0.01	<0.01	<0.01
Hexachlorobenzene	0.01 ug/L	<0.01	<0.01	<0.01	<0.01
Hexachlorobutadiene	0.01 ug/L	<0.01	<0.01	<0.01	<0.01
Hexachlorocyclohexane, gamma	0.01 ug/L	<0.01	<0.01	<0.01	<0.01
Hexachloroethane	0.01 ug/L	<0.01	<0.01	<0.01	<0.01
Methoxychlor	0.01 ug/L	<0.01	<0.01	<0.01	<0.01
Decachlorobiphenyl	Surrogate	119%	138%	126%	97.0%

Certificate of Analysis

Report Date: 23-Mar-2021

Client: GEMTEC Consulting Engineers and Scientists Limited

Order Date: 17-Mar-2021

Client PO:

Project Description: 100441.001

	Client ID:	Trip Blank	-	-	-
	Sample Date:	12-Mar-21 00:00	-	-	-
	Sample ID:	2112364-05	-	-	-
	MDL/Units	Water	-	-	-
Volatiles					
Acetone	5.0 ug/L	<5.0	-	-	-
Benzene	0.5 ug/L	<0.5	-	-	-
Bromodichloromethane	0.5 ug/L	<0.5	-	-	-
Bromoform	0.5 ug/L	<0.5	-	-	-
Bromomethane	0.5 ug/L	<0.5	-	-	-
Carbon Tetrachloride	0.2 ug/L	<0.2	-	-	-
Chlorobenzene	0.5 ug/L	<0.5	-	-	-
Chloroform	0.5 ug/L	<0.5	-	-	-
Dibromochloromethane	0.5 ug/L	<0.5	-	-	-
Dichlorodifluoromethane	1.0 ug/L	<1.0	-	-	-
1,2-Dichlorobenzene	0.5 ug/L	<0.5	-	-	-
1,3-Dichlorobenzene	0.5 ug/L	<0.5	-	-	-
1,4-Dichlorobenzene	0.5 ug/L	<0.5	-	-	-
1,1-Dichloroethane	0.5 ug/L	<0.5	-	-	-
1,2-Dichloroethane	0.5 ug/L	<0.5	-	-	-
1,1-Dichloroethylene	0.5 ug/L	<0.5	-	-	-
cis-1,2-Dichloroethylene	0.5 ug/L	<0.5	-	-	-
trans-1,2-Dichloroethylene	0.5 ug/L	<0.5	-	-	-
1,2-Dichloropropane	0.5 ug/L	<0.5	-	-	-
cis-1,3-Dichloropropylene	0.5 ug/L	<0.5	-	-	-
trans-1,3-Dichloropropylene	0.5 ug/L	<0.5	-	-	-
1,3-Dichloropropene, total	0.5 ug/L	<0.5	-	-	-
Ethylbenzene	0.5 ug/L	<0.5	-	-	-
Ethylene dibromide (dibromoethane, 1	0.2 ug/L	<0.2	-	-	-
Hexane	1.0 ug/L	<1.0	-	-	-
Methyl Ethyl Ketone (2-Butanone)	5.0 ug/L	<5.0	-	-	-
Methyl Isobutyl Ketone	5.0 ug/L	<5.0	-	-	-
Methyl tert-butyl ether	2.0 ug/L	<2.0	-	-	-
Methylene Chloride	5.0 ug/L	<5.0	-	-	-
Styrene	0.5 ug/L	<0.5	-	-	-
1,1,1,2-Tetrachloroethane	0.5 ug/L	<0.5	-	-	-
1,1,2,2-Tetrachloroethane	0.5 ug/L	<0.5	-	-	-
Tetrachloroethylene	0.5 ug/L	<0.5	-	-	-
Toluene	0.5 ug/L	<0.5	-	-	-

Certificate of Analysis

Report Date: 23-Mar-2021

Client: GEMTEC Consulting Engineers and Scientists Limited

Order Date: 17-Mar-2021

Client PO:

Project Description: 100441.001

	Client ID:	Trip Blank	-	-	-
	Sample Date:	12-Mar-21 00:00	-	-	-
	Sample ID:	2112364-05	-	-	-
	MDL/Units	Water	-	-	-
1,1,1-Trichloroethane	0.5 ug/L	<0.5	-	-	-
1,1,2-Trichloroethane	0.5 ug/L	<0.5	-	-	-
Trichloroethylene	0.5 ug/L	<0.5	-	-	-
Trichlorofluoromethane	1.0 ug/L	<1.0	-	-	-
Vinyl chloride	0.5 ug/L	<0.5	-	-	-
m,p-Xylenes	0.5 ug/L	<0.5	-	-	-
o-Xylene	0.5 ug/L	<0.5	-	-	-
Xylenes, total	0.5 ug/L	<0.5	-	-	-
4-Bromofluorobenzene	Surrogate	85.4%	-	-	-
Dibromofluoromethane	Surrogate	82.4%	-	-	-
Toluene-d8	Surrogate	106%	-	-	-
Hydrocarbons					
F1 PHCs (C6-C10)	25 ug/L	<25	-	-	-

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Anions									
Chloride	ND	1	mg/L						
General Inorganics									
Cyanide, free	ND	2	ug/L						
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L						
F2 PHCs (C10-C16)	ND	100	ug/L						
F3 PHCs (C16-C34)	ND	100	ug/L						
F4 PHCs (C34-C50)	ND	100	ug/L						
Metals									
Mercury	ND	0.1	ug/L						
Antimony	ND	0.5	ug/L						
Arsenic	ND	1	ug/L						
Barium	ND	1	ug/L						
Beryllium	ND	0.5	ug/L						
Boron	ND	10	ug/L						
Cadmium	ND	0.1	ug/L						
Chromium (VI)	ND	10	ug/L						
Chromium	ND	1	ug/L						
Cobalt	ND	0.5	ug/L						
Copper	ND	0.5	ug/L						
Lead	ND	0.1	ug/L						
Molybdenum	ND	0.5	ug/L						
Nickel	ND	1	ug/L						
Selenium	ND	1	ug/L						
Silver	ND	0.1	ug/L						
Sodium	ND	200	ug/L						
Thallium	ND	0.1	ug/L						
Uranium	ND	0.1	ug/L						
Vanadium	ND	0.5	ug/L						
Zinc	ND	5	ug/L						
Pesticides, OC									
Aldrin	ND	0.01	ug/L						
alpha-Chlordane	ND	0.01	ug/L						
gamma-Chlordane	ND	0.01	ug/L						
Chlordane	ND	0.01	ug/L						
o,p'-DDD	ND	0.01	ug/L						
p,p'-DDD	ND	0.01	ug/L						
DDD	ND	0.01	ug/L						
o,p'-DDE	ND	0.01	ug/L						
p,p'-DDE	ND	0.01	ug/L						
DDE	ND	0.01	ug/L						
o,p'-DDT	ND	0.01	ug/L						
p,p'-DDT	ND	0.01	ug/L						
DDT	ND	0.01	ug/L						
Dieldrin	ND	0.01	ug/L						
Endosulfan I	ND	0.01	ug/L						
Endosulfan II	ND	0.01	ug/L						
Endosulfan I/II	ND	0.01	ug/L						
Endrin	ND	0.01	ug/L						
Heptachlor	ND	0.01	ug/L						
Heptachlor epoxide	ND	0.01	ug/L						
Hexachlorobenzene	ND	0.01	ug/L						
Hexachlorobutadiene	ND	0.01	ug/L						
Hexachlorocyclohexane, gamma	ND	0.01	ug/L						
Hexachloroethane	ND	0.01	ug/L						
Methoxychlor	ND	0.01	ug/L						
Surrogate: Decachlorobiphenyl	*0.618*		*ug/L*		*124*	*50-140*			

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Semi-Volatiles									
Acenaphthene	ND	0.05	ug/L						
Acenaphthylene	ND	0.05	ug/L						
Anthracene	ND	0.01	ug/L						
Benzo [a] anthracene	ND	0.01	ug/L						
Benzo [a] pyrene	ND	0.01	ug/L						
Benzo [b] fluoranthene	ND	0.05	ug/L						
Benzo [g,h,i] perylene	ND	0.05	ug/L						
Benzo [k] fluoranthene	ND	0.05	ug/L						
Chrysene	ND	0.05	ug/L						
Dibenzo [a,h] anthracene	ND	0.05	ug/L						
Fluoranthene	ND	0.01	ug/L						
Fluorene	ND	0.05	ug/L						
Indeno [1,2,3-cd] pyrene	ND	0.05	ug/L						
1-Methylnaphthalene	ND	0.05	ug/L						
2-Methylnaphthalene	ND	0.05	ug/L						
Methylnaphthalene (1&2)	ND	0.10	ug/L						
Naphthalene	ND	0.05	ug/L						
Phenanthrene	ND	0.05	ug/L						
Pyrene	ND	0.01	ug/L						
Surrogate: 2-Fluorobiphenyl	*16.6*		*ug/L*		*83.0*	*50-140*			
Surrogate: Terphenyl-d14	*23.2*		*ug/L*		*116*	*50-140*			
Volatiles									
Acetone	ND	5.0	ug/L						
Benzene	ND	0.5	ug/L						
Bromodichloromethane	ND	0.5	ug/L						
Bromoform	ND	0.5	ug/L						
Bromomethane	ND	0.5	ug/L						
Carbon Tetrachloride	ND	0.2	ug/L						
Chlorobenzene	ND	0.5	ug/L						
Chloroform	ND	0.5	ug/L						
Dibromochloromethane	ND	0.5	ug/L						
Dichlorodifluoromethane	ND	1.0	ug/L						
1,2-Dichlorobenzene	ND	0.5	ug/L						
1,3-Dichlorobenzene	ND	0.5	ug/L						
1,4-Dichlorobenzene	ND	0.5	ug/L						
1,1-Dichloroethane	ND	0.5	ug/L						
1,2-Dichloroethane	ND	0.5	ug/L						
1,1-Dichloroethylene	ND	0.5	ug/L						
cis-1,2-Dichloroethylene	ND	0.5	ug/L						
trans-1,2-Dichloroethylene	ND	0.5	ug/L						
1,2-Dichloropropane	ND	0.5	ug/L						
cis-1,3-Dichloropropylene	ND	0.5	ug/L						
trans-1,3-Dichloropropylene	ND	0.5	ug/L						
1,3-Dichloropropene, total	ND	0.5	ug/L						
Ethylbenzene	ND	0.5	ug/L						
Ethylene dibromide (dibromoethane, 1,2-	ND	0.2	ug/L						
Hexane	ND	1.0	ug/L						
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L						
Methyl Isobutyl Ketone	ND	5.0	ug/L						
Methyl tert-butyl ether	ND	2.0	ug/L						
Methylene Chloride	ND	5.0	ug/L						
Styrene	ND	0.5	ug/L						
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L						
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L						
Tetrachloroethylene	ND	0.5	ug/L						
Toluene	ND	0.5	ug/L						
1,1,1-Trichloroethane	ND	0.5	ug/L						
1,1,2-Trichloroethane	ND	0.5	ug/L						
Trichloroethylene	ND	0.5	ug/L						

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Trichlorofluoromethane	ND	1.0	ug/L						
Vinyl chloride	ND	0.5	ug/L						
m,p-Xylenes	ND	0.5	ug/L						
o-Xylene	ND	0.5	ug/L						
Xylenes, total	ND	0.5	ug/L						
Surrogate: 4-Bromofluorobenzene	*76.4*		*ug/L*		*95.5*	*50-140*			
Surrogate: Dibromofluoromethane	*64.5*		*ug/L*		*80.6*	*50-140*			
Surrogate: Toluene-d8	*86.4*		*ug/L*		*108*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Anions									
Chloride	2.05	1	mg/L	2.18			6.2	10	
General Inorganics									
Cyanide, free	ND	2	ug/L	ND			NC	20	
pH	7.7	0.1	pH Units	7.7			0.1	3.3	
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L	ND			NC	30	
Metals									
Mercury	ND	0.1	ug/L	ND			NC	20	
Antimony	ND	0.5	ug/L	ND			NC	20	
Arsenic	ND	1	ug/L	ND			NC	20	
Barium	ND	1	ug/L	ND			NC	20	
Beryllium	ND	0.5	ug/L	ND			NC	20	
Boron	ND	10	ug/L	ND			NC	20	
Cadmium	ND	0.1	ug/L	ND			NC	20	
Chromium (VI)	ND	10	ug/L	ND			NC	20	
Chromium	ND	1	ug/L	ND			NC	20	
Cobalt	ND	0.5	ug/L	ND			NC	20	
Copper	ND	0.5	ug/L	ND			NC	20	
Lead	ND	0.1	ug/L	ND			NC	20	
Molybdenum	ND	0.5	ug/L	ND			NC	20	
Nickel	ND	1	ug/L	ND			NC	20	
Selenium	ND	1	ug/L	ND			NC	20	
Silver	ND	0.1	ug/L	ND			NC	20	
Sodium	ND	200	ug/L	ND			NC	20	
Thallium	ND	0.1	ug/L	ND			NC	20	
Uranium	ND	0.1	ug/L	ND			NC	20	
Vanadium	ND	0.5	ug/L	ND			NC	20	
Zinc	ND	5	ug/L	ND			NC	20	
Volatiles									
Acetone	ND	5.0	ug/L	ND			NC	30	
Benzene	ND	0.5	ug/L	ND			NC	30	
Bromodichloromethane	ND	0.5	ug/L	ND			NC	30	
Bromoform	ND	0.5	ug/L	ND			NC	30	
Bromomethane	ND	0.5	ug/L	ND			NC	30	
Carbon Tetrachloride	ND	0.2	ug/L	ND			NC	30	
Chlorobenzene	ND	0.5	ug/L	ND			NC	30	
Chloroform	ND	0.5	ug/L	ND			NC	30	
Dibromochloromethane	ND	0.5	ug/L	ND			NC	30	
Dichlorodifluoromethane	ND	1.0	ug/L	ND			NC	30	
1,2-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,3-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,4-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,1-Dichloroethane	ND	0.5	ug/L	ND			NC	30	
1,2-Dichloroethane	ND	0.5	ug/L	ND			NC	30	
1,1-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
cis-1,2-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
trans-1,2-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
1,2-Dichloropropane	ND	0.5	ug/L	ND			NC	30	
cis-1,3-Dichloropropylene	ND	0.5	ug/L	ND			NC	30	
trans-1,3-Dichloropropylene	ND	0.5	ug/L	ND			NC	30	
Ethylbenzene	ND	0.5	ug/L	ND			NC	30	
Ethylene dibromide (dibromoethane, 1,2-	ND	0.2	ug/L	ND			NC	30	
Hexane	ND	1.0	ug/L	ND			NC	30	
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L	ND			NC	30	
Methyl Isobutyl Ketone	ND	5.0	ug/L	ND			NC	30	
Methyl tert-butyl ether	ND	2.0	ug/L	ND			NC	30	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Methylene Chloride	ND	5.0	ug/L	ND			NC	30	
Styrene	ND	0.5	ug/L	ND			NC	30	
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L	ND			NC	30	
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L	ND			NC	30	
Tetrachloroethylene	ND	0.5	ug/L	ND			NC	30	
Toluene	ND	0.5	ug/L	ND			NC	30	
1,1,1-Trichloroethane	ND	0.5	ug/L	ND			NC	30	
1,1,2-Trichloroethane	ND	0.5	ug/L	ND			NC	30	
Trichloroethylene	ND	0.5	ug/L	ND			NC	30	
Trichlorofluoromethane	ND	1.0	ug/L	ND			NC	30	
Vinyl chloride	ND	0.5	ug/L	ND			NC	30	
m,p-Xylenes	ND	0.5	ug/L	ND			NC	30	
o-Xylene	ND	0.5	ug/L	ND			NC	30	
Surrogate: 4-Bromofluorobenzene	*72.2*		*ug/L*		*90.2*	*50-140*			
Surrogate: Dibromofluoromethane	*78.6*		*ug/L*		*98.3*	*50-140*			
Surrogate: Toluene-d8	*85.4*		*ug/L*		*107*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Anions									
Chloride	11.7	1	mg/L	2.18	95.3	77-123			
General Inorganics									
Cyanide, free	24.4	2	ug/L	ND	81.3	70-130			
Hydrocarbons									
F1 PHCs (C6-C10)	1800	25	ug/L	ND	89.8	68-117			
F2 PHCs (C10-C16)	1580	100	ug/L	ND	98.6	60-140			
F3 PHCs (C16-C34)	3570	100	ug/L	ND	91.2	60-140			
F4 PHCs (C34-C50)	2220	100	ug/L	ND	89.5	60-140			
Metals									
Mercury	3.20	0.1	ug/L	ND	107	70-130			
Antimony	43.2	0.5	ug/L	ND	86.4	80-120			
Arsenic	49.0	1	ug/L	ND	97.9	80-120			
Barium	48.4	1	ug/L	ND	96.4	80-120			
Beryllium	53.9	0.5	ug/L	ND	108	80-120			
Boron	49	10	ug/L	ND	98.4	80-120			
Cadmium	48.7	0.1	ug/L	ND	97.4	80-120			
Chromium (VI)	208	10	ug/L	ND	104	70-130			
Chromium	52.6	1	ug/L	ND	105	80-120			
Cobalt	49.7	0.5	ug/L	ND	99.5	80-120			
Copper	49.0	0.5	ug/L	ND	98.0	80-120			
Lead	45.8	0.1	ug/L	ND	91.5	80-120			
Molybdenum	48.3	0.5	ug/L	ND	96.6	80-120			
Nickel	48.0	1	ug/L	ND	96.0	80-120			
Selenium	47.5	1	ug/L	ND	94.9	80-120			
Silver	49.3	0.1	ug/L	ND	98.5	80-120			
Sodium	11100	200	ug/L	ND	111	80-120			
Thallium	45.2	0.1	ug/L	ND	90.5	80-120			
Uranium	43.5	0.1	ug/L	ND	87.0	80-120			
Vanadium	52.5	0.5	ug/L	ND	105	80-120			
Zinc	52	5	ug/L	ND	103	80-120			
Pesticides, OC									
Aldrin	0.58	0.01	ug/L	ND	116	50-140			
alpha-Chlordane	0.58	0.01	ug/L	ND	115	50-140			
gamma-Chlordane	0.56	0.01	ug/L	ND	113	50-140			
o,p'-DDD	0.70	0.01	ug/L	ND	140	50-140			
p,p'-DDD	0.61	0.01	ug/L	ND	123	50-140			
o,p'-DDE	0.68	0.01	ug/L	ND	135	50-140			
p,p'-DDE	0.62	0.01	ug/L	ND	123	50-140			
o,p'-DDT	0.68	0.01	ug/L	ND	135	50-140			
p,p'-DDT	0.62	0.01	ug/L	ND	125	50-140			
Dieldrin	0.60	0.01	ug/L	ND	120	50-140			
Endosulfan I	0.60	0.01	ug/L	ND	120	50-140			
Endosulfan II	0.57	0.01	ug/L	ND	115	50-140			
Endrin	0.18	0.01	ug/L	ND	35.0	50-140			QS-02
Heptachlor	0.58	0.01	ug/L	ND	116	50-140			
Heptachlor epoxide	0.55	0.01	ug/L	ND	110	50-140			
Hexachlorobenzene	0.40	0.01	ug/L	ND	80.4	50-140			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hexachlorobutadiene	0.54	0.01	ug/L	ND	108	50-140			
Hexachlorocyclohexane, gamma	0.55	0.01	ug/L	ND	110	50-140			
Hexachloroethane	0.36	0.01	ug/L	ND	71.0	50-140			
Methoxychlor	0.55	0.01	ug/L	ND	110	50-140			
Surrogate: Decachlorobiphenyl	*0.643*		*ug/L*		*129*	*50-140*			
Semi-Volatiles									
Acenaphthene	4.74	0.05	ug/L	ND	94.8	50-140			
Acenaphthylene	4.42	0.05	ug/L	ND	88.5	50-140			
Anthracene	5.05	0.01	ug/L	ND	101	50-140			
Benzo [a] anthracene	4.60	0.01	ug/L	ND	92.0	50-140			
Benzo [a] pyrene	4.85	0.01	ug/L	ND	97.0	50-140			
Benzo [b] fluoranthene	5.91	0.05	ug/L	ND	118	50-140			
Benzo [g,h,i] perylene	4.56	0.05	ug/L	ND	91.2	50-140			
Benzo [k] fluoranthene	5.33	0.05	ug/L	ND	107	50-140			
Chrysene	5.21	0.05	ug/L	ND	104	50-140			
Dibenzo [a,h] anthracene	4.88	0.05	ug/L	ND	97.6	50-140			
Fluoranthene	4.66	0.01	ug/L	ND	93.3	50-140			
Fluorene	4.37	0.05	ug/L	ND	87.4	50-140			
Indeno [1,2,3-cd] pyrene	4.84	0.05	ug/L	ND	96.9	50-140			
1-Methylnaphthalene	4.38	0.05	ug/L	ND	87.6	50-140			
2-Methylnaphthalene	4.62	0.05	ug/L	ND	92.3	50-140			
Naphthalene	4.94	0.05	ug/L	ND	98.8	50-140			
Phenanthrene	4.60	0.05	ug/L	ND	92.0	50-140			
Pyrene	4.65	0.01	ug/L	ND	93.0	50-140			
Surrogate: 2-Fluorobiphenyl	*16.2*		*ug/L*		*80.8*	*50-140*			
Surrogate: Terphenyl-d14	*23.5*		*ug/L*		*117*	*50-140*			
Volatiles									
Acetone	99.7	5.0	ug/L	ND	99.7	50-140			
Benzene	35.1	0.5	ug/L	ND	87.6	60-130			
Bromodichloromethane	30.2	0.5	ug/L	ND	75.4	60-130			
Bromoform	35.4	0.5	ug/L	ND	88.4	60-130			
Bromomethane	37.6	0.5	ug/L	ND	94.0	50-140			
Carbon Tetrachloride	29.3	0.2	ug/L	ND	73.2	60-130			
Chlorobenzene	40.1	0.5	ug/L	ND	100	60-130			
Chloroform	34.5	0.5	ug/L	ND	86.2	60-130			
Dibromochloromethane	31.3	0.5	ug/L	ND	78.2	60-130			
Dichlorodifluoromethane	45.1	1.0	ug/L	ND	113	50-140			
1,2-Dichlorobenzene	37.4	0.5	ug/L	ND	93.6	60-130			
1,3-Dichlorobenzene	38.0	0.5	ug/L	ND	95.0	60-130			
1,4-Dichlorobenzene	38.2	0.5	ug/L	ND	95.6	60-130			
1,1-Dichloroethane	35.9	0.5	ug/L	ND	89.8	60-130			
1,2-Dichloroethane	40.0	0.5	ug/L	ND	99.9	60-130			
1,1-Dichloroethylene	32.9	0.5	ug/L	ND	82.3	60-130			
cis-1,2-Dichloroethylene	33.0	0.5	ug/L	ND	82.6	60-130			
trans-1,2-Dichloroethylene	32.6	0.5	ug/L	ND	81.6	60-130			
1,2-Dichloropropane	33.8	0.5	ug/L	ND	84.4	60-130			
cis-1,3-Dichloropropylene	41.9	0.5	ug/L	ND	105	60-130			
trans-1,3-Dichloropropylene	31.6	0.5	ug/L	ND	79.0	60-130			
Ethylbenzene	39.5	0.5	ug/L	ND	98.8	60-130			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Ethylene dibromide (dibromoethane, 1,2-	35.7	0.2	ug/L	ND	89.2	60-130			
Hexane	35.8	1.0	ug/L	ND	89.4	60-130			
Methyl Ethyl Ketone (2-Butanone)	85.1	5.0	ug/L	ND	85.1	50-140			
Methyl Isobutyl Ketone	71.7	5.0	ug/L	ND	71.7	50-140			
Methyl tert-butyl ether	84.6	2.0	ug/L	ND	84.6	50-140			
Methylene Chloride	33.0	5.0	ug/L	ND	82.4	60-130			
Styrene	40.7	0.5	ug/L	ND	102	60-130			
1,1,1,2-Tetrachloroethane	36.2	0.5	ug/L	ND	90.6	60-130			
1,1,2,2-Tetrachloroethane	35.5	0.5	ug/L	ND	88.7	60-130			
Tetrachloroethylene	39.3	0.5	ug/L	ND	98.3	60-130			
Toluene	41.6	0.5	ug/L	ND	104	60-130			
1,1,1-Trichloroethane	29.6	0.5	ug/L	ND	74.0	60-130			
1,1,2-Trichloroethane	31.0	0.5	ug/L	ND	77.6	60-130			
Trichloroethylene	33.1	0.5	ug/L	ND	82.8	60-130			
Trichlorofluoromethane	34.2	1.0	ug/L	ND	85.6	60-130			
Vinyl chloride	37.8	0.5	ug/L	ND	94.4	50-140			
m,p-Xylenes	88.9	0.5	ug/L	ND	111	60-130			
o-Xylene	43.7	0.5	ug/L	ND	109	60-130			
Surrogate: 4-Bromofluorobenzene	*78.9*		*ug/L*		*98.6*	*50-140*			
Surrogate: Dibromofluoromethane	*72.3*		*ug/L*		*90.4*	*50-140*			
Surrogate: Toluene-d8	*83.4*		*ug/L*		*104*	*50-140*			

Qualifier Notes:

Login Qualifiers :

Container and COC sample IDs don't match - Containers labelled as 100441.001, chain of custody reads MW21-1

Applies to samples: MW21-1

Sample - Received with >5% sediment, instructed to perform whole bottle extraction (analyze with sediment)

Applies to samples: MW21-6

Sample Qualifiers :

4 : Water sample included significant amount of sediment which was included in extraction process. The inclusion of sediment in the extraction is expected to reduce accuracy and results may be biased high.

5 : Submitted VOC vials were decanted into a single vial prior to analysis due to the presence of sediments.

- VOC07 (s.03)

QC Qualifiers :

QS-02 : Spike level outside of control limits. Analysis batch accepted based on other QC included in the batch.

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

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

CCME PHC additional information:

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.
- F1 range corrected for BTEX.
- F2 to F3 ranges corrected for appropriate PAHs where available.
- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.
- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.
- When reported, data for F4G has been processed using a silica gel cleanup.

PARACE LABORATORIES I

Paracel ID: 2112364

Office
119 St. Laurent Blvd
a, Ontario K1G 4J8
00 749-1947
acel@paracellabs.com
paracellabs.com

Paracel Order Number (Lab Use Only)	Chain Of Custody (Lab Use Only)
2112364	

Client Name: GEMTEC	Project Ref: 100441.001	Page 1 of 1
Contact Name: Nicole Soucy	Quote #: 21-113	Turnaround Time
Address: 32 Steacie Drive	PO #:	☐ 1 day ☐ 3 day ☐ 2 day ☒ Regular
	E-mail: nicole.soucy@gemtec.ca	Date Required:
Telephone: 613-836-1422		

Regulation 153/04	Other Regulation
☒ Table 1 ☐ Res/Park ☐ Med/Fine	☐ REG 558 ☐ PWQO
☐ Table 2 ☐ Ind/Comm ☐ Coarse	☐ CCME ☐ MISA
☐ Table 3 ☐ Agri/Other	☐ SU - Sani ☐ SU - Storm
☐ Table	Mun:
For RSC: ☐ Yes ☒ No	☐ Other:

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

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken Date	Sample Taken Time	PAHs	M&I	PHC/BTEX	OCP
1	MW21-1	GW			March 17/2021		✓	✓	✓	✓
2	MW21-4	GW			March 17/2021		✓	✓	✓	✓
3	MW21-6	GW			March 17/2021		✓	✓	✓	✓
4	MW21-104	GW			March 17/2021		✓	✓	✓	✓
5										
6	Trip Blank	GW			March 17/2021 12				✓	
7										
8										
9										
10										

Comments:

Method of Delivery: Drop Box

Relinquished By (Sign):	Received By Driver/Depot:	Received at Lab:	Verified By:
Relinquished By (Print): Connor Shaw	Date/Time: Mar 17/20 1356	Date/Time: Mar 17 2021 16:11	Date/Time: Mar 17 2021 16:22
Date/Time: 17-Mar-21 2PM	Temperature: 14.8 °C	Temperature: 6.9	pH Verified: ☐ By:

AGAT Laboratories

5835 COOPERS AVENUE
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: Chris Dionne
PROJECT: 100441.001
AGAT WORK ORDER: 24Z209775
SOIL ANALYSIS REVIEWED BY: Sukhwinder Randhawa, Inorganic Team Lead
DATE REPORTED: Oct 23, 2024
PAGES (INCLUDING COVER): 6
VERSION*: 1

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

*Notes

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.*

AGAT Laboratories

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

Certificate of Analysis

AGAT WORK ORDER: 24Z209775

PROJECT: 100441.001

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

ATTENTION TO: Chris Dionne

SAMPLING SITE:

SAMPLED BY:

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

DATE RECEIVED: 2024-10-16 **DATE REPORTED: 2024-10-23**

Parameter	Unit	G / S	RDL	SAMPLE DESCRIPTION: BH21-8 10 North SAMPLE TYPE: Soil DATE SAMPLED: 2024-10-11 6232008	BH21-8 East Soil 2024-10-11 6232013	BH21-8 West Soil 2024-10-11 6232014	BH21-8 SA3 G Soil 2024-10-11 6232015	BH21-8 South Soil 2024-10-11 6232016	BH21-8 SA3 F Soil 2024-10-11 6232017	BH21-8 SA3 B Soil 2024-10-11 6232018	BH21-8 SA3 A Soil 2024-10-11 6232019
Electrical Conductivity (2:1)	mS/cm		0.005	0.762	0.298	0.892	0.526	0.834	0.917	0.401	0.631
Sodium Adsorption Ratio (2:1) (Calc.)	N/A		N/A	0.465	0.292	0.542	0.244	0.304	0.212	0.229	0.208

Parameter	Unit	G / S	RDL	SAMPLE DESCRIPTION: BH21-8 North SAMPLE TYPE: Soil DATE SAMPLED: 2024-10-11 6232020	BH21-8 SA3 E Soil 2024-10-11 6232021	BH21-8 SA3 D Soil 2024-10-11 6232022	BH21-8 SA4A Soil 2024-10-11 6232023	BH21-8 SA3 C Soil 2024-10-11 6232024
Electrical Conductivity (2:1)	mS/cm		0.005	0.873	0.526	0.356	0.642	0.937
Sodium Adsorption Ratio (2:1) (Calc.)	N/A		N/A	0.275	0.240	0.259	0.273	0.243

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

6232008-6232024 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

5835 COOPERS AVENUE
MISSISSAUGA, ONTARIO
CANADA L4Z 1Y2
TEL (905)712-5100
FAX (905)712-5122
http://www.agatlabs.com

Quality Assurance

CLIENT NAME: GEMTEC CONSULTING ENGINEERS AND SCIENTISTS

AGAT WORK ORDER: 24Z209775

PROJECT: 100441.001

ATTENTION TO: Chris Dionne

SAMPLING SITE:

SAMPLED BY:

Soil Analysis

RPT Date: Oct 23, 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)	6232008	6232008	0.762	0.800	4.9%	< 0.005	97%	80%	120%						
Sodium Adsorption Ratio (2:1) (Calc.)	6232008	6232008	0.465	0.447	3.9%	NA	NA								

Comments: NA signifies Not Applicable.

Certified By:

AGAT Laboratories

5835 COOPERS AVENUE
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: 24Z209775

PROJECT: 100441.001

ATTENTION TO: Chris Dionne

SAMPLING SITE:

SAMPLED BY:

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

AGAT Laboratories

Have feedback? Scan here for a quick survey!

5835 Coopers Avenue
Mississauga, Ontario L4Z 1Y2
Ph: 905.712.5100 Fax: 905.712.5122
webearth.agatlabs.com

Chain of Custody Record

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

Report Information:

Company: GEMTEC
Contact: Chris Dionne
Address: 32 Steacie Drive
Phone: 613 408 2773 Fax:
Reports to be sent to:
1. Email: Chris.Dionne@gemtec.ca
2. Email: Jeffrey.Gauthier@gemtec.ca

Project Information:

Project: 100741.001
Site Location:
Sampled By:
AGAT Quote #: PO:
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

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

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

Legal Sample ☐

Sample Matrix Legend

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

Laboratory Use Only

Work Order #: 24Z209775
Cooler Quantity: 1 large
Arrival Temperatures: 6.0 | 6.0 | 5.4
Depot Temperatures: | |
Custody Seal Intact: ☐ Yes ☐ No ☐ N/A
Notes: F/I

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 CSR

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	O. Reg 406: pH, Metals, BTEX, F1-F4	O. Reg 406: EC, SAR	O. Reg 406: Regulation 406 SPLP Rainwater Leach	O. Reg 406: mSPLP: ☐ Metals ☐ VOCs ☐ SVOCs ☐ OC	O. Reg 558: Landfill Disposal Characterization TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	Corrosivity: ☐ Moisture ☐ Sulphide	Soil + (EC, SAR)	Potentially Hazardous or High Concentration (Y/N)
1. BH 21-8 100 North	Oct 11/24	AM/PM	1	S																/	
2. BH 21-8 East		AM/PM																		/	
3. BH 21-8 West		AM/PM																		/	
4. BH 21-8 SA3 G		AM/PM																		/	
5. BH 21-8 South		AM/PM																		/	
6. BH 21-8 SA3 F		AM/PM																		/	
7. BH 21-8 SA3 B		AM/PM																		/	
8. BH 21-8 SA3 A		AM/PM																		/	
9. BH 21-8 North		AM/PM																		/	
10. BH 21-8 SA3 E		AM/PM																		/	
11. BH 21-8 SA3 D		AM/PM																		/	

Samples Relinquished By (Print Name and Sign):	Date	Time	Samples Received By (Print Name and Sign):	Date	Time
Jeffrey Gauthier	Oct 16/24	2:50		17 OCT	9:30

Page 1 of 2

N°: T - 157284

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AGAT Laboratories

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5835 Coopers Avenue
Mississauga, Ontario L4Z 1Y2
Ph: 905.712.5100 Fax: 905.712.5122
webearth.agatlabs.com

Chain of Custody Record

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

Report Information:

Company: GEMTEC
Contact: Chris Dionne
Address: 32 Steacie Drive

Phone: 613 408 7373 Fax:

Reports to be sent to:
1. Email: Chris.dionne@gemtec.ca
2. Email: Jeffrey.gauthier@gemtec.ca

Project Information:

Project: 100441.001
Site Location:
Sampled By:
AGAT Quote #: PO:
Please note: If quotation number is not provided, client will be billed full price for analysis.

Invoice Information:

Bill To Same: Yes ☐ No ☐

Company:
Contact:
Address:
Email:

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

Legal Sample ☐

Sample Matrix Legend

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

Laboratory Use Only

Work Order #: 24220977 5
Cooler Quantity: 1 large
Arrival Temperatures: 6.0 | 6.1 | 5.4
Depot Temperatures: | |
Custody Seal Intact: ☐ Yes ☐ No ☐ N/A
Notes: F1

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 CSR

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: Arocolors ☐	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 ☐ OC	O. Reg 558: Landfill Disposal Characterization TCLP: ☐ M&I ☐ VOCs ☐ ABNs ☐ B(a)P ☐ PCBs	Corrosivity: ☐ Moisture ☐ Sulphide	SAR (EC, SAR)							Potentially Hazardous or High Concentration (Y/N)
1. BH21-8 SA4A	Oct 11/24	AM/PM	1	S														1							
2. BH21-8 SA3C	↓	AM/PM	1	S														1							
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
Jeffrey Gauthier	Oct 16/24	2150		FRI OCT	9:30

Page 2 of 2

№: T - 157285

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

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