ALL-TECH
ENVIRONMENTAL SERVICES LIMITED

Phase II Environmental Site Assessment
Former Queens County Highways Depot
Riverside Drive, Charlottetown, Prince Edward Island

Prepared To:

PEI Transportation and Infrastructure
Public Works and Planning Division
11 Kent Street, Charlottetown, PEI

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EXECUTIVE SUMMARY

ALL-TECH Environmental Services Limited (ALL-TECH) was retained by the Prince Edward Island (PEI) Department of Transportation and Infrastructure (PEI DTI), Public Works and Planning Division to conduct a Phase II Environmental Site Assessment (ESA) at the Former Queens County Highways Depot along Riverside Drive in Charlottetown, PEI, herein referred to as the "Site".

The Phase II ESA was conducted in general accordance with the Phase II Environmental Site Assessment, CSA Standard (CAN/CSA-Z7669-00 (R2018)).

The Site (PIDs Nos.: 825927, 365593 and a portion of 336537) is located in eastern Charlottetown, PEI. The Site is approximately of 11.91 acres with two distinct areas, which are identified as:

- The Joseph A. Ghiz Memorial Park (PID No.: 825927); and
- Former Queens County Highways Depot (PID Nos.: 365593 and a portion of 336537)

The Site is located in a mixed residential, commercial and industrial area of Charlottetown, PEI. In general, commercial and industrial properties are located to the north, east and south of the Site, and residential properties are located to the west of the Site.

The Site and the surrounding properties are serviced by the City of Charlottetown municipal water supply and sanitary sewer collection systems.

A limited file search/review confirmed portions of the Site had been infilled to reclaim the land.

The scope of work for the Phase II ESA, which was generally based on Phase I ESA recommendations (Stantec, 2020), consisting of:

- Advancing twenty-seven (27) boreholes;
- Installing twenty-two (22) monitoring wells;
- Manually excavating twenty-three (23) shallow test holes;
- Analyzing one hundred and six (106) soil samples, eight blind field duplicate soil samples and 7 laboratory duplicate soil sample for metals, petroleum hydrocarbons (BTEX/Modified TPH), polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs) and/or volatile organic compounds (VOC) analysis.
- Analyzing thirty-seven (37) shallow soil samples, six blind field duplicate shallow soil samples and three laboratory duplicate shallow soil samples for metals, petroleum hydrocarbons (BTEX/Modified TPH) and polycyclic aromatic hydrocarbons (PAHs) analysis.

- Analyzing fifty-nine (59) groundwater samples, eight blind field duplicate groundwater samples and three laboratory duplicate groundwater samples.

The following presents a brief summary of the findings, results and general recommendations for each of the APECs:

1. **APEC #1: Former Queens County Highways Depot:** Metal and petroleum hydrocarbon exceedances were identified in one shallow soil sample, but do not represent a human and/or environmental health risk.

   Petroleum hydrocarbon exceedances were identified at three different locations around the Former Highways Depot Building. Additional delineation is recommended to better characterize and quantify the volume of impacted soil.

2. **APEC #2: Former Rail Lines Throughout the Property**
   Metal, petroleum hydrocarbon and PAH exceedances were identified at numerous shallow soil sample locations, but do not represent a human health risk. The potential ecological risks are considered to be low.

3. **APEC #3: Former Infilled Area/Dump Location**
   Although miscellaneous debris was encountered and there were a few individual metal and PAH exceedances in soil, they do not represent a human or environmental health risk.

4. **APEC #4: Administration Building (Former Asphalt Testing Lab)**
   Although tetrachloroethylene (also referred to as tetrachloroethene) was detected in the groundwater around the Administration Building, the concentrations were below the Tier II PSSL (Indoor Air). No Further assessment or remediation is recommended.

5. **APEC #5: Irving Oil Bulk Plant and Gasoline Retail Outlet**
   There was no indication of any contamination at the Site associated with the Irving Oil Bulk Plant and Gasoline Retail Outlet. No further assessment or remediation is recommended.

6. **APEC #6: Former Imperial Oil Bulk Plant**
   There was no indication of any significant contamination at the Site associated with past operations at the Former Imperial Oil Bulk Plant. No Further soil assessment or remediation is recommended.

The cadmium exceedance in one monitoring well exceeded the CCME CWQG For the Protection of Aquatic Life (Marine). Confirmatory and surface water sampling in the manmade ditch is recommended to demonstrate there is no risk to the Hillsborough River.

7. **APEC #7: Former Asphalt Plant**
   There were no indications of any impacts to the Site associated with the past operations at the former asphalt plant adjacent to the Site. No further assessment or remediation is recommended.

8. **APEC #8: Former Coal Shed and Yard Storage**
   There were no indications of any impacts to the Site associated with the former adjacent coal storage shed/yard. No further assessment or remediation is recommended.

9. **APEC #9: 377 Kent Street (Major Residential Fuel Oil Release)**
   There were no indications of any fuel oil impacts detected in soil or groundwater downgradient of the release property. No further assessment or remediation is recommended.

10. **APEC #10: Former Concrete Plant**
    Elevated PAHs were detected in SS-16. It is recommended that confirmatory soil sample be conducted and additional shallow soil samples be collected to delineate the horizontal and vertical extent of impacts.

In general, the isolated metal and PAH exceedances in soil can be easily managed with the soil management plan, that can be implemented as part of the redevelopment plan. The metal, petroleum hydrocarbon and PAH exceedances along the former CNR Railway tracks can also be easily managed with a soil management plan (if ever disturbed in the future). Remediation and/or risk management of the petroleum hydrocarbon exceedances at the Former Highways Building Depot should be considered as part of the planned redevelopment for this portion of the property.

This Executive Summary provides a brief overview of the main conclusions and recommendations of this Phase I ESA report. Complete details are provided in the report and the attached Appendices. The statements made in this Executive Summary are subject to the same limitations as described in Section 4.1 and Section 8.0.

TABLE OF CONTENTS

List of Tables

List of Appendices

1.0 Introduction

ALL-TECH Environmental Services Limited (ALL-TECH) was retained by the Prince Edward Island (PEI) Department of Transportation and Infrastructure (DTI), Public Works and Planning Division to conduct a Phase II Environmental Site Assessment (ESA) at the Former Queens County Highways Depot along Riverside Drive in Charlottetown, PEI (Figures 1 and 2, Appendix A), herein referred to as the "Site".

The Phase II ESA was conducted in general accordance with the Phase II Environmental Site Assessment, CSA Standard (CAN/CSA-Z7669-00 (R2018)).

The following sections of this report detail the site background, site description; previous assessment programs, scope of work, methodology, regulatory framework, results, and conclusions.

2.0 Background

It is understood that the PEI DTI are considering expanding and/or redeveloping portions of the property, which may include single or multiple story slab on grade buildings for residential, commercial or institutional use. The purpose of this Phase II ESA was to identify actual areas of environmental contamination, which would require remediation and/or risk management considerations as part of the future expansion and/or redevelopment plans.

It is understood that the following potential redevelopment options are being considered:

- ***Former Highways Depot:*** It is understood that the larger portion of the property where the Former Highways Building is located is being considered for potential future residential, commercial and/or institutional redevelopment (i.e., new buildings). The portion of the property with the Administration Building and the Emergency Shelters may also be expanded (adding additional emergency shelters) with the addition of a safe injection site.

- ***The Joseph A. Ghiz Memorial Park (herein referred to as the "Park"):*** There are no plans to redevelop this portion of the property.

3.0 Site Description

The Site (PIDs Nos.: 825927, 365593 and a portion of 336537) is located in eastern Charlottetown, PEI (Figure 1, Appendix A). The Site is approximately 11.91 acres with two distinct areas, which are described as follows:

- ***The Joseph A. Ghiz Memorial Park (PID No.: 825927):*** The Park is generally described as a day park (approximately 4.86 acres) with a small open grass field, a gazebo (with several picnic tables) and a small portion of the Confederation Trail (a walking trail). The Park is bordered to the north by several

residential properties; to the east by two large asphalt parking lots, and a small grass field; to the south by Grafton Street; to the southwest by Edward Street and a small grass field; and to the west by a small grass field and Kent Street. Access into this portion of the property is from the parking area along Kent Street and from the trail entrances near the intersections of Kent Street, Fitzroy Street, Esher Street and Kensington Road (at the northernmost point of the Confederation Trail within the Site) and at the intersections of Grafton Street and Edward Street (at the southernmost point of the Confederation Trail within the Site). Although the Confederation Trail is covered by Type 1 (or Class A) gravel, the smaller northern walking trail is covered by asphalt. The majority of the Park is covered by grass.

It is noted that there is a small manmade ditch that borders a portion of the eastern boundary of the Park (between the Park and the adjacent asphalt parking lots). This ditch appears to extend to the north along the Confederation Trail (the former CNR Railway). Both ends of this ditch either drain from or into an underground culvert system, and appears to have several sections of underground concrete culvert upgradient of the Site. The manmade drain is considered to be a surface water drainage system, and not a sensitive aquatic and/or ecological environment.

- ***Former Queens County Highways Depot (PID Nos.: 365593 and a portion of 336537):*** As indicated by the title, this portion of the property (approximately 7.05 acres) formerly operated as the Queens County Highways Depot, which currently consists of the maintenance garage, administration building, emergency shelters and a security booth. This portion of the Site is bordered by Park Street to the north; Riverside Drive (or the Trans-Canada Highway) to the east; several commercial properties (i.e., Tim Hortons, Wendy's, Gateway Dental, etc.) to the south; and Park Street, Beach Street and several residential properties to the west. This portion of this property is surrounded by a security fence. Although there are several small strips of grass along the eastern and western property boundaries, the majority of the property is covered by gravel or asphalt. Access into the Site is through the security gate off of Park Street.

The Site is located in a mixed residential, commercial and industrial area of Charlottetown, PEI (see Figure 2, Appendix A). In general, commercial and industrial properties are located to the north, east and south of the Site, and residential properties are located to the north and west of the Site.

It is worth noting that the Site is located approximately 143 meters west of the Hillsborough River, which discharges into the Charlottetown Harbour. Because of the close proximity of the Hillsborough River to the Charlottetown Harbour (approximately 1.5 km), it is anticipated that this portion of the Hillsborough River is tidal.

The Site and the surrounding properties are serviced by the City of Charlottetown municipal water supply and sanitary sewer collection systems.

Photographs of the Site and the surrounding area are presented in Appendix B.

4.0 Previous Environmental Assessment Activities

Stantec recently conducted a Phase I ESA for the Site which identified ten (10) Areas of Potential Environmental Concern (APEC), which were identified as follows:

1. **APEC #1:** Former Queens County Highways Depot
2. ***APEC* #2:** Former Rail Lines Throughout the Property
3. **APEC #3:** Former Infilled Area/Dump Location
4. **APEC #4:** Administration Building (Former Asphalt Testing Lab)
5. **APEC #5:** Irving Oil Bulk Plant and Gasoline Retail Outlet
6. **APEC #6:** Former Imperial Oil Bulk Plant
7. **APEC #7:** Former Asphalt Plant
8. **APEC #8:** Former Coal Shed and Yard Storage
9. **APEC #9:** 377 Kent Street (Major Residential Fuel Oil Release)
10. **APEC #10**: Former Concrete Plant

Table 1 from the Phase I ESA report, which identifies and describes each of the APECS, potential contaminants of concern and recommendations is presented in Appendix C, for reference. A figure from the Phase I ESA report that shows the locations of each of the APECS is also included in Appendix C, for reference.
Based on a review of the Phase I ESA report, it was noted that the former underground petroleum storage tanks were discussed but were not specifically identified or located in the report (either on the figures or in any of the supporting documents).

5.0 Scope of Work

The following presents a summary of the scope of work for the limited file search/review and the Phase II ESA.

Limited File Search/Review

As indicated above, the location of the former underground petroleum storage tanks around the Former Highways Depot Building were not specifically identified/located in the Phase I ESA report. To conduct a proper Phase II ESA, specifically assessing areas where the former underground petroleum storage tanks were located, PEI DTI authorized ALL-TECH to obtain any necessary information to locate the underground storage tanks.

Phase II ESA

The scope of work for the Phase II ESA consisted of:

- Advancing twenty-seven (27) boreholes,
- Installing twenty-two (22) monitoring wells,
- Manually excavating twenty-three (23) shallow test holes.
- Analyzing one hundred and six (106) soil samples, eight blind field duplicate soil samples and 7 laboratory duplicate soil sample for metals, petroleum hydrocarbons (BTEX/Modified TPH), polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs) and/or volatile organic compounds (VOC) analysis.
- Analyzing thirty-seven (37) shallow soil samples, six blind field duplicate shallow soil samples and three laboratory duplicate shallow soil samples for metals, petroleum hydrocarbons (BTEX/Modified TPH) and PAHs analysis.
- Analyzing fifty-nine (59) groundwater samples, eight blind field duplicate groundwater samples and three laboratory duplicate groundwater samples for metals, petroleum hydrocarbons (BTEX/Modified TPH), PAHs, PCBs and/or VOC analysis.

The following, presents a break down of the scope of work, including the number of samples that were analyzed for each APEC.

Table 5-2: Phase II ESA Scope of Work By Apec

APECs	Sample Locations			Soil/Groundwater Samples				
	Boreholes	Monitoring Wells	Shallow Soil Samples	BTEX/TPH	Metals	PAHs	PCBs	VOCs
APEC #1 & #5	23	6	0	26/6	0/0	0/0	0/0	14/6
APEC #2	0	0	23	12/0	12/0	12/0	0/0	0/0
APEC #3	2	3	0	5/3	5/3	5/3	5/3	5/3
APEC #4	0	4	0	4/4	0/0	4/4	0/0	4/4
APEC #6	2	3	0	4/3	4/3	4/3	1/0	0/0
APEC #7	0	2	0	2/2	0/0	0/0	0/0	2/2
APEC #8	0	1	0	1/1	0/0	1/1	0/0	0/0
APEC #9	0	1	0	1/1	0/0	0/0	0/0	0/0
APEC #10	0	2	0	2/2	0/0	0/0	0/0	2/2
Total	**27**	**22**	**12**	**57/22**	**21/6**	**26/11**	**6/3**	**27/17**

6.0 Regulatory Framework, Guidelines and Site Classification

The Prince Edward Island Department of Environment, Energy and Climate Action manage petroleum hydrocarbon impacted sites in accordance with the Prince Edward Island, Environmental Protection Act, Petroleum Hydrocarbon Remediation Regulations (PHRR, Updated September 19, 2015), herein referred to as the "Regulations". The Regulations have generally adopted the Atlantic RBCA (Risk-Based Corrective Action) approach for managing petroleum impacted sites.

The Regulations have both Risk-Based Screening Levels (RBSLs) and Pathway Specific Screening Levels (PSSLs), which are used to assess the soil and groundwater quality at the Site. The RBSLs and PSSLs that are considered to be applicable to this Site are as follows:

- Tier I Risk-Based Screening Levels (RBSLs) for Petroleum Impacted Soil and Groundwater;
- Tier II Pathway Specific Screening Levels (PSSLs) for Petroleum Impacted Soil and Groundwater;
- Tier I Soil Ecological Screening Levels (SESL) for the Protection of Plants and Soil Invertebrates (Direct Soil Contact);
- Tier I Groundwater Ecological Screening Levels for Plant and Invertebrate (Direct Contact with Shallow Groundwater); and
- Tier I Surface Water and Groundwater Ecological Screening Levels for the Protection of Freshwater and Marine Aquatic Life.

The use of the applicable Tier I and Tier II screening levels is based on land use (agricultural, residential/parkland, commercial or industrial), groundwater use (potable or non -potable) and soil type (fine-grained or course-grained). Based on the land use (including potential future land use considerations), groundwater use and soil type (discussed throughout the report), the southwestern portion of the Site, specifically The Joseph A. Ghiz Memorial Park, is classified as parkland/non-potable/coarse-grained and the Former Highways Depot, specifically the northeastern portion of the Site, is classified as residential and/or commercial/non-potable/coarse-grained.

The Regulations do not include other contaminants (i.e., metals, PAHs, PCBs, VOCs, etc.). The Prince Edward Island Department of Environment, Energy and Climate Action manage these contaminants in accordance with the Canadian Council of Ministers of the Environment (CCME) Canadian Environmental Quality Guidelines (CEQGs), specifically:

- Canadian Soil Quality Guidelines (CSQG) for the Protection of Environmental and Human Health;
- Canadian Water Quality Guidelines (CWQG) for the Protection of Aquatic Life (Freshwater/Marine).

Because the Hillsborough River is located approximately 140 m (within 200m) of the Site, the soil and groundwater results were also compared to the applicable PHHR and CCME ecological screening levels.

The analytical results, specifically any exceedances, were also compared to the PHRR Tier II PSSLs or the CCME CSQG/CWQG check values to further assess the human and environmental health risks, as appropriate.

As previously indicated in the Site Description (Section 3.0), the manmade ditch that borders a portion of the eastern boundary of the Park is considered to be part of a surface water drainage system and not a

sensitive aquatic and/or ecological environment. For this reason, the groundwater quality was only compared to the CCME Canadian Water Quality Guidelines for the Protection of Aquatic Life (Marine).

7.0 Methodology

The following presents a brief summary of the methodology used to conduct the Phase II ESA.

7.1 Limited File Search/Review

ALL-TECH contacted the Prince Edward Island Department of Environment, Land and Environment and requested copies of any petroleum storage registrations for the property. ALL-TECH also requested any available Fire Insurance Plans or Insurance Reports for the property from OPTA Information Intelligence. Selected historical aerial photographs (1958, 1974, 1990 and 2000) were also obtained from OPTA Information Intelligence.

7.2 Underground Utility Locates/Clearances

Prior to any intrusive assessment activities, ALL-TECH contacted Bell Aliant, City of Charlottetown (Water and Sewer), Enwave, Maritime Electric and Utility Corridor to locate and mark (i.e., paint on the surface) any underground utilities and clear the proposed borehole and/or monitoring well locations. The underground utilities were marked and/or clearances were obtained from all of the above utility companies.

ALL-TECH also retained Brunswick Engineering, who conducted a site visit on July 18, 2023 and completed a ground penetrating radar (GPR) scan at each of the proposed borehole and/or monitoring well locations. An ALL-TECH representative accompanied the Brunswick Engineering representative at all of the proposed borehole and/or monitoring well locations. The proposed locations were “cleared”, if there were no indication of any underground utilities in the immediate vicinity. However, if there was an underground utility or unknown structure(s) in the immediate vicinity of the proposed borehole and/or monitoring well location, then the location was moved to a nearby area which was “cleared”.

7.3 Advancing Boreholes and Installing Monitoring Wells

In total, twenty-seven (27) boreholes (BH23-1 to BH23-27) were advanced and twenty-two (22) monitoring wells (MW23–1 to MW23-22) were installed between July 18 and 25, 2023 by Meg Drilling Services Inc. using a track-mounted environmental/geotechnical drill rig. The depth of the boreholes ranged from 1.83 to 5.18 meters below ground surface (mbgs) and the depth of the monitoring wells ranged from 2.43 to 4.57 mbgs. The location of the boreholes and the monitoring wells are presented in Figures 3 and 4, Appendix A.

While advancing each of the boreholes, the stratigraphy was continuously logged. Soil type, colour, moisture content, debris and any indication of impacts or free product using olfactory methods (i.e., visual staining or odour) were documented.

At a minimum, the boreholes were advanced approximately 1 m into the groundwater. Once the desired depth was achieved and the soil samples collected (discussed further in the section below), the borehole was backfilled with the original drill cuttings. The backfilled material was then compacted near the surface using the drill rig to reduce the potential of future settling in the borehole.

Selected boreholes were completed with a monitoring well installation. The monitor wells were constructed using 50 mm diameter Schedule 40 PVC casing, screen and an end cap. The annulus between the screened PVC pipe and soil was backfilled with clean silica sand, up approximately 0.3 m above the screened PVC pipe. A bentonite seal was placed and hydrated to provide a watertight seal for the well. The monitor wells were then secured with a compression plug and a bolt down, flush-mounted steel cover.

Excess drill cuttings were placed and secured in 45 gallon drums on-site.

GPS coordinates were obtained for each borehole/monitoring well location. Each of the monitoring wells were surveyed using a standard level and rod to calculate relative monitoring well and groundwater elevations.

7.4 Soil Sampling

Soil samples were continuously collected when drilling the borehole and/or monitoring wells. The soil samples were collected, where possible, using a split spoon sampler at 0.6 m intervals. When soil recovery was sufficient, samples were collected in duplicate, with a portion of the sample placed in clean laboratory supplied vials/bottles and the remaining portion of sample placed in a heavy duty ziplock bag. Immediately after collection, the soil-filled laboratory vials/bottles were placed in a cooler and kept on ice until delivered to the laboratory. A chain of custody was also completed and submitted with the soil samples.

The split spoon samplers were cleaned between each sample in a clean bucket with water and a mild environmentally friendly detergent. A new pair of nitrile gloves was used when collecting each soil sample.

A portable RKI Eagle 2 was used to screen the soil samples in the ziplock bags for volatiles organic compounds (VOCs), which includes petroleum hydrocarbons. Readings were measured from the samples placed in the ziplock bags after the samples equilibrated to room temperature. Although vapor readings cannot be used to correlate contaminant concentrations in soil, they can be helpful in identifying which sample from each borehole/monitoring well has the highest potential for impact to be present.

7.5 Shallow Soil Sampling

Shallow test holes were manually dug using a pick and shovel to a depth ranging between 0.38 to 0.80 mbgs. The shallow soil samples were collected using a stainless steel trowel and/or by hand. The shallow soil samples were placed in clean laboratory supplied vials/bottles. Immediately after collection, the soil-filled laboratory vials/bottles were placed in a cooler and kept on ice until delivered to the laboratory. A chain of custody was also completed and submitted with the soil samples. After the soil sample was collected, the shallow test hole was backfilled with the original excavated material and was compacted with a manual tamper.

A new pair of nitrile gloves was used to collect each shallow soil sample. The stainless steel trowel was cleaned between each sample in a clean bucket with water and a mild environmentally friendly detergent.

7.6 Groundwater Monitoring and Sampling

After installation, the monitoring wells were allowed to stabilize for a minimum of seven days. The monitor wells that were being sampled for PAHS, were developed and sampled using low flow sampling techniques. Monitoring wells that were not being sampled for PAHS were developed and sampled using standard sampling techniques (i.e., dedicated waterra tubing and a foot valve). A brief description of the two types of developing and sampling methods are summarized as follows:

Low Flow Sampling

These monitoring wells were developed using a Peri Pump, rented from Pine Environmental. The pump was set to pump between 100 – 200 mls/min. The water was pumped into a flow-through cell, where the water quality was monitored every three to five minutes for pH, temperature, specific conductance, oxidation reduction potential, dissolved oxygen (DO) and turbidity using a Horiba U52-2M Multimeter and a U-50 Display. The water quality was monitored until a minimum of three of the parameters stabilized over three consecutive monitoring intervals. The successive readings must be within ± 0.1 for pH, ± 3% for conductivity, ± 10 mv for redox potential, and ± 10% for turbidity and DO to be considered stabilized. Once the groundwater quality stabilized, the flow-through cell was removed from the pumping system and the groundwater samples were placed directly into clean laboratory supplied vials/bottles. Immediately after collection, the water-filled laboratory vials/bottles were placed in a cooler and kept on ice until delivered to the laboratory. A new pair of nitrile gloves was used to collect each groundwater sample.

New KURI-TEC clear PVC tubing and geotech silicone tubing were used when developing and collecting groundwater samples from each of the monitoring wells.

Standard Sampling (Using Waterra Tubing and a Foot Valve)

New waterra tubing (Waterra Polyethylene Tubing) and a foot valve were installed and dedicated in each of these monitoring wells. A minimum of three well volumes was purged from each monitoring well, or the well was developed dry three times, to remove any standing water and ensure that the samples were

representative of the surrounding groundwater. At a minimum, the groundwater was allowed to recover to approximately 80% of its original static. The groundwater samples were placed directly into clean laboratory supplied vials/bottles. Immediately after collection, the water-filled laboratory vials/bottles were placed in a cooler and kept on ice until delivered to the laboratory. A chain of custody was also completed and submitted with the groundwater samples. A new pair of nitrile gloves was used to develop and collect each groundwater sample.

7.7 Quality Assurance and Quality Control (QA/QC)

During fieldwork, various Quality Assurance/Quality Control (QA/QC) measures were implemented for the Phase II ESA:

- Cleaning the spilt spoon samplers between soil samples, and rinsing off the augers between each borehole/monitoring well location;
- Restricted use of petroleum-based lubricants on tools and equipment;
- Maintaining a clean work area for sample handling/logging;
- Using disposable nitrile gloves when handling samples;
- Using clean laboratory-supplied containers for soil and groundwater samples;
- Maintaining well materials in factory-supplied packaging until placed in the borehole;
- Using dedicated watera tubing and foot valves or new KURI-TEC clear PVC tubing and geotech silicone tubing when developing and sampling each monitoring well;
- Keeping samples in cool storage in a secure location and maintaining direct custody of samples until delivery to the laboratory.

RPC is accredited with the Standards Council of Canada (SCC) and conforms to the requirements of ISO/IEC 17025 (Testing and Calibration Laboratories Accreditation Program – Environmental Testing). RPC has an internal QA program that consists of analyzing matrix spike, spiked blank, certified reference materials and reference blanks. The results of these analyses are compared to established control limits to assess the quality of the laboratory analytical results. These QA processes and results were reviewed and are discussed within the ESA sections of the report.

8.0 Results

8.1 Limited File Search/Review

The following presents a summary of the documents that were obtained and reviewed to determine the location of the former underground petroleum storage tanks around the Former Highways Depot Building:

Schedule A: Underground Petroleum Storage Tank Application for Registration Form
This form has several diagrams that identified the following information:

Page 1: A figure shows a tank and a pump island, presumably on the east side of the Former Highways Depot Building.

Page 2: A figure shows a tank (presumably the underground 22,730 liter furnace fuel (fuel oil) tank) on the north side of the Former Highways Depot. A tank (presumably an underground gasoline or diesel tank) is also present on the east side of the Former Highways Depot.

Page 3: A figure identifies the following petroleum storage tanks around the Former Highways Building: :

- A 22,730 liter Furnace Fuel (Fuel Oil) tank on the north side of the building;
- A 8,900 liter gasoline tank on the east side of the building;
- A 13,000 liter gasoline tank on the east side of the building;
- A 22,730 liter diesel tank on the east side of the building.

Page 4: A figure identified the following petroleum storage tanks around the building:

- A 5,000 gallon storage tank (presumably the former fuel oil tank) on the north side of the building;
- A 2,000 gallon gasoline tank on the east side of the building;
- A 2,000 gallon gasoline tank on the east side of the building;
- A 2,000 gallon diesel tank on the east side of the building; and
- A pump island immediate east of the above underground storage tanks.

A copy of this document is presented in Appendix D, for reference.

Fire Insurance Maps

Several Fire Insurance maps for the general area were obtained for 1956 and 1963, which provided the following information:

1956: The Provincial Government Garage is shown in the plans. However, no former petroleum storage tanks are shown around the building.

1963: The Provincial Government Garage is shown in the plans. However, no former petroleum storage tanks are shown around the building.

A copy of the Opta Report with the Fire Insurance Plans is presented in Appendix D, for reference.

Historical Aerial Photographs

1958: The aerial photograph is similar to the 1956 Fire Insurance Plan. There are no obvious storage tanks around the garage (the photograph is blurry).

1974: The Provincial Government Garage and the Administration Building are visible in the photograph. The quality of the photograph is generally blurry, and distinguishing smaller features such as petroleum storage tanks is not possible.

1990: Similar to the above aerial photograph.

2000: Similar to the above aerial photograph.

Copies of the Historical Aerial Photographs are presented in Appendix D, for reference.

City of Charlottetown (Water and Sewer)

The representative from the City of Charlottetown (Water and Sewer), who was on-site to locate and clear the proposed borehole and monitoring well locations, had a plan that showed "storage tanks" to the west of the Highways Depot Building, southwest of the more recent former above ground petroleum storage tank. Based on a review of this plan, it was concluded this was an older unidentified above ground storage tank (which had not been identified in the Phase I ESA report).

It is also worth noting that this same plan shows the former train tracks were along the western side of the fence of the Former Highways Depot portion of the property. Based on a field calculations and measurements, this fence is considered to be the same as the current fence line).

A copy of this plan is presented in Appendix D, for reference.

1935 Aerial Photograph

Although the 1935 Aerial Photograph was presented in the Phase I ESA, it did not provide any indication where the shoreline was compared to the current Site layout. A figure that shows the approximate location of the 1995 shoreline is presented in Appendix D, for reference.

Historical 1880 Atlas

One of the security guards at the Site had an 1880 Atlas for PEI, which included detailed mapping in the vicinity of the Site. Based on a map of Charlottetown, a notable portion of the Park (approximately 50% of the area) and a smaller portion of the Former Highways Depot (approximately 20%) was historically a swamp which was infilled. A copy of the 1880 Map, in the vicinity of the Site is presented in Appendix D, for reference. A figure that shows the approximate location of the 1880 shoreline and the swamp is presented in Appendix D, for reference.

Based on a review of the above documents, ALL-TECH was confident that the tanks identified in these documents were the ones referenced in the Phase I ESA report. Based on this, proposed boreholes and/or monitoring wells were placed within or downgradient of these location as part of the Phase II ESA.

8.2 Topography

The Site is situated in a relatively flat area of Charlottetown with an elevation ranging from 1-3 m above sea level. Based on topographical mapping (Toporama), the gradient of the general area is approximately 0.006% down toward Hillsborough River.

8.3 Surficial Geology

The surficial geology in the vicinity of the Site is mapped as clay and clay-silt till, characterized as ground moraine. The matrix is predominantly composed of clay to clay-silt, with varying stone content. The till is compact in nature and displays varying thickness, ranging from a few centimeters to 5 meters in most areas. However, along coastal regions, it can attain thicknesses of 9 to 10 meters. The transitions between this till unit and other till units are typically gradual.

Soil stratigraphy observed during the assessment generally consisted of reddish-brown silt/clayey silt and some fine-grained sands with traces of gravel.

As previously noted, portions of the site have been infilled in the past to reclaim land, specifically along the eastern portion of the property where the shoreline was infilled to construct Riverside Drive and the Irving Oil Bulk Plant/gasoline retail outlet. A large portion of The Joseph A. Ghiz Memorial Park was originally a swamp with a small brook, which was also infilled. As a result of this infilling at these locations, the nature of the fill material would be different than the surrounding native soil.

8.4 Bedrock Geology

The bedrock geology in the vicinity of the Site is mapped as reddish-brown sandstone, siltstone and claystone breccia. Bedrock was not encountered during the assessment.

8.5 Hydrogeology

Based on topographical mapping (Toporama) in the vicinity of the Site, the groundwater flow direction is anticipated to be to the southeast towards the Hillsborough River, which is located approximately 140 m east to southeast of the Site.
Free product was not measured in any of the monitoring wells.

The Joseph A. Ghiz Memorial Park

The depth to groundwater at the Park ranged from 0.67 to 1.18 m below ground surface, with a groundwater elevational low of 98.05 m at MW23-02 and a groundwater elevational high of 98.30 m at MW23-01. Because the monitoring wells within the Park are generally located in a straight line, the groundwater flow direction cannot be calculated. Based on the topography of the area, it is anticipated that the groundwater flow direction is to the southeast towards the manmade ditch. The anticipated groundwater flow direction is presented in Figure 3, Appendix A.

Former Highways Depot

The depth to groundwater at the Former Highways Depot ranged from 1.64 to 2.29 m below ground surface, with a groundwater elevational low of 97.77 m at MW23-19 and a groundwater elevational high of 98.54 m at MW23-18. The groundwater flow direction at the Site was calculated to be to the southeast with an average hydraulic gradient of 0.001. It is worth noting that the depth to groundwater and the calculated groundwater elevation for MW23-09 (0.20 and 99.75 m, respectively) are considered to be an anomaly which is assumed to be the result from the sand fill (i.e., the bathtub effect) that was observed at this location. The calculated groundwater flow direction is presented in Figure 4, Appendix A.

The depth to groundwater and the groundwater elevations are presented in Table 1, Appendix F.

8.6 Field Observations

The following section presents a brief summary of notable field observations during the Phase II ESA field program. To better discuss the analytical results and interpretations in the subsequent sections, the Former Highways Depot was broken out into two different areas, which are identified as the Former Highways Depot and the Administration Building and the Emergency Shelters.

Slag Material (Along the Former Railway Tracks)

Slag material was observed in eleven (11) of the twenty-three (23) shallow test holes that were excavated along the former CNR Railway tracks. The depth of the slag ranged from 0.15 to 0.61 m below surface, and the thickness ranged from 0.05 to 0.29 m (with an average thickness of 0.14 m). It is assumed the slag layer was the original railway bed at one time. The shallow test hole logs are presented in Appendix E, for reference.

Petroleum Hydrocarbon Impacts (Petroleum Storage Tanks)

Petroleum hydrocarbon impacts were observed at three distinct locations around the Former Highways Depot Building, the former underground fuel oil tank location along the north side of the building; the aboveground fuel oil tanks located along the north side of the building; and the former underground petroleum storage tanks and pump island along the east side of the building. The following lists the boreholes and/or monitoring wells where petroleum hydrocarbons were observed at these locations:

Former Underground Fuel Oil Tank (North Side of Building): MW23-13.
Existing Aboveground Fuel Oil Tanks (North Side of Building): BH23-26.
Former Underground Storage Tanks/Pump Island (East Side of Building): BH23-05, BH23-06, BH23-07, BH23-10, BH23-13 and BH23-19.

No obvious indications of petroleum hydrocarbon impacts were observed in any of the other boreholes and/or monitoring wells.

Miscellaneous Debris

Miscellaneous debris was observed in the soil at the following locations:

The Joseph A. Ghiz Memorial Park

- BH23-02: glass shards, and construction debris
- MW23-02: Glass shards and construction debris

Former Highways Depot

- MW23-13: Construction debris

The Administration Building and Emergency Shelters

- MW23-14: Minor wood debris (possibly an individual piece of wood)
- MW23-19: Construction debris, wood debris, plastic, glass

8.7 Shallow Soil Analytical Results (Along the Former CNR Railway Tracks)

Because of the high number of samples submitted for analysis as part of the Phase II ESA, the following sections focus only on exceedances. The analytical results are presented in Tables 2 to 17, Appendix F, and the Certificates of Analysis are presented in Appendix G, for reference.

8.7.1 Metals

Arsenic concentrations exceeded the CCME CSQG concentration in the shallow soil samples SS-01, SS-01 LD, SS-04, SS-05, SS-06, SS-07 and SS-08.

Copper concentrations exceeded the CCME CSQG concentration in the shallow soil samples SS-01, SS-01 LD, SS-04, SS-05, SS-06, SS-07, SS-08 and SS-09.

Lead concentrations exceeded the CCME CSQG concentration in the shallow soil samples SS-01, SS-01 LD, SS-04, SS-05, SS-06, SS-09, SS-18 (BFD (blind field duplicate) of SS-17) and SS-19 (BFD of SS-09).

Selenium concentrations exceeded the CCME CSQG concentration in the shallow soil samples SS-01, SS-01 LD and SS-06.

Zinc concentrations exceeded the CCME CSQG concentration in the shallow soil samples SS-06, SS-09 and SS-19.

The complete analytical results are presented in Table 2, Appendix E. The extent of impacts are presented in Figures 5 and 6, Appendix F.

8.7.2 Petroleum Hydrocarbons

Benzene concentrations exceeded the Tier I RBSLs in the shallow soil samples SS-01, SS-04, SS-05, SS-06, SS-07, SS-08, SS-09, SS-17, SS-18 (BFD of SS-17) and SS-19 (BFD of SS-09).

Modified TPH concentrations exceeded the Tier I RBSLs in the shallow soil samples SS-01, SS-04, SS-05, SS-06, SS-07, SS-08, SS-09, SS-18 (BFD of SS-17) and SS-19 (BFD of SS-09). The Modified TPH concentrations, based on the carbon fraction distributions, resemble a gasoline or fuel oil.

The petroleum hydrocarbon concentrations were also compared to the Tier II Pathway Specific Screening Level (PSSLs) for Ingestion (i.e., direct contact/ingestion). As previously indicated, there are no plans to expand or redevelop The Joseph A. Ghiz Memorial Park. As such the Tier II PSSLs for Indoor Air and Soil Leaching (for the protection of potable water) are not considered to be applicable for this portion of the property. The BTEX/Modified TPH concentrations in the shallow soil samples are below the Tier II PSSLs.

The complete analytical results are presented in Table 3, Appendix F. The extent of impacts are presented in Figures 5 and 6, Appendix A.

8.7.3 Polycyclic Aromatic Hydrocarbons

One to three PAH parameters (naphthalene, benz[a]anthracene, benzo(b+j)fluoranthene and/or indeno(1,2,3-c,d)pyrene) had concentrations that exceed the CCME CSQG in the shallow soil samples SS-01, SS-05, SS-06, SS-07 and SS-08. Unlike the other shallow soil samples, most of the PAH parameters in the shallow soil sample SS-16 had concentrations that exceeded the CCME CSQG concentration. The Benzo[a]pyrene Total Potency Equivalent (B[a]P TPE) concentration for this sample also exceeded the CCME CSQG concentration.

The complete analytical results are presented in Table 4, Appendix E. The extent of impacts are presented in Figures 5 and 6, Appendix A.

8.8 Soil Analytical Results

8.8.1 Metals

The Joseph A. Ghiz Memorial Park

Arsenic, copper, lead, tin and zinc concentrations exceeded the CCME CSQG concentration in the soil sample BH23-02.

Arsenic and selenium concentrations exceeded the CCME CSQG concentration in the soil sample MW23-02.

Administration Building and the Emergency Shelters

Selenium concentrations exceeded the CCME CSQG concentration in the soil samples BH23-22 and MW23-18.

Zinc concentrations exceeded the CCME CSQG concentration in the soil sample MW23-19.

The complete analytical results are presented in Table 5, Appendix F. The extent of impacts are presented in Figures 5 and 6, Appendix A.

8.8.2 Petroleum Hydrocarbons (Tier I RBSLs)

The Joseph A. Ghiz Memorial Park

The benzene concentration exceeded the CCME CSQG concentration in the soil sample MW23-02.

Former Highways Depot

Former Fuel Oil Tank (north side of building): Modified TPH concentration (represented as a fuel oil) exceeded the Tier I RBSLs in the soil sample MW23-13.

Existing Above Ground Fuel Oil Tanks (north side of building): Modified TPH concentrations (represented as a fuel oil) exceeded the Tier I RBSLs in the soil sample BH23-26.

Former Underground Storage Tanks/Pump Island (east side of building): Benzene, ethylbenzene, xylenes and/or Modified TPH concentrations (represented as a gasoline) exceeded the Tier I RBSLs in the soil samples BH23-06 and BH23-07. Benzene, ethylbenzene, xylenes and/or Modified TPH concentrations (represented as a fuel oil) exceeded the Tier I RBSLs in the soil samples BH23-10, BH23-13, BH23-19 and MW23-11.

Administration Building and the Emergency Shelters

MW23-19: The Modified TPH concentrations (represented as a fuel oil) exceeded the Tier I RBSL concentration.

The complete analytical results are presented in Table 6, Appendix F. The extent of impacts are presented in Figures 5 and 6, Appendix A.

8.8.3 Petroleum Hydrocarbons (Tier I SESLs – Plants /Invertebrates)

Excluding the shallow soil samples along the former railway tracks, the BTEX/F1-F4 fractions for the surface soil samples (<1.5 m) were below the PHRR Tier I SESLs (Plants/Invertebrates) with the exception of the F3 (C16-C32) concentration detected in the soil sample BH23-26.

The complete analytical results are presented in Table 7, Appendix E. The extent of impact is presented in Figure 6, Appendix A.

8.8.4 Polycyclic Aromatic Hydrocarbons

Administration Building and the Emergency Shelters

The benzo(b+j)fluoranthene concentration exceeded the CCME CSQG in the soil sample MW23-19.

The complete analytical results are presented in Table 8, Appendix F. The extent of impact is presented in Figure 6, Appendix A.

8.8.5 Polychlorinated Biphenyls

Administration Building and the Emergency Shelters

PCB concentrations were not detected in the analyzed soil samples.

The complete analytical results are presented in Table 9, Appendix F.

8.8.6 Volatile Organic Compounds

Former Highways Depot

Former Underground Storage Tanks/Pump Island (East Side of Building): Benzene, ethylbenzene and/or toluene concentrations exceed the CCME CSQG concentrations in the soil samples BH23-10 and MW23-11.

Administration Building and Emergency Shelters

The benzene concentration exceeded the CCME CSQG concentration in the soil sample MW23-19.

Although VOC parameters were detected in the above soil samples, the VOC exceedances are sourced from petroleum hydrocarbons and are carried forward as such.

The complete analytical results are presented in Table 10, Appendix F. The extent of impacts are presented in Figure 6, Appendix A.

8.9 Groundwater Analytical Results

8.9.1 Metals

The Joseph A. Ghiz Memorial Park

The only metal exceedance in groundwater was a single cadmium concentration that exceeded the CCME CWQG (Marine) concentration in MW23-02.

The complete analytical results are presented in Table 11, Appendix F.

8.9.2 Petroleum Hydrocarbons (Tier I RBSLs)

BTEX concentrations were detected in the groundwater samples MW23-02, MW23-04, MW23-11 and MW23-12. However, the concentrations were below the PHRR Tier I RBSLs.

Modified TPH concentrations were detected in fourteen (14) of the analyzed groundwater samples. However, the concentrations are below the PHHR Tier I RBSLs.

The complete analytical results are presented in Table 12, Appendix F.

8.9.3 Petroleum Hydrocarbons (Tier I GESL – Freshwater/Marine Aquatic Life)

Petroleum hydrocarbons detected in the analyzed groundwater samples were below the PHRR Tier I Groundwater Ecological Screening Levels for the Protection of Freshwater and Marine Aquatic Life.

The complete analytical results are presented in Table 13, Appendix F.

8.9.4 Polycyclic Aromatic Hydrocarbons

PAH concentrations were detected in the groundwater samples MW23-03, MW23-14, MW23-19 and MW23-20. However, the concentrations are below the CCME CWQG (Protection of Aquatic Life, Marine).

The complete analytical results are presented in Table 14, Appendix F.

8.9.5 Polychlorinated Biphenyls in Groundwater

PCB concentrations were not detected in any of the analyzed groundwater samples.

The complete analytical results are presented in Table 15, Appendix F.

8.9.6 Volatile Organic Compounds in Groundwater (CWQG – Aquatic Life, Marine)

The ethylbenzene concentrations detected in the groundwater samples MW23-11 and MW23-12 exceeded the CCME CWQG (Protection of Aquatic Life, Marine).

The complete analytical results are presented in Table 16, Appendix F.

8.9.7 Volatile Organic Compounds in Groundwater (Atlantic RBCA – Tier II PSSL)

Because several VOC concentrations were detected in the groundwater around the administrative building that are considered to be associated with the former asphalt testing lab, the analytical results were compared to the Atlantic Tier II PSSL (Indoor Air) pathway. Although VOC concentrations were detected in the groundwater samples MW23-14, MW23-15, MW23-21 and MW23-22, the concentrations are below the Tier II PSSL (Indoor Air) concentrations.

The complete analytical results are presented in Table 17, Appendix F.

9.0 Quality Assurance Discussions

The Quality Assurance Reports provided by RPC indicated the matrix spike, the spiked blank, the certified reference materials and the reference blank samples are within acceptable quality control (QC) limits. The reports confirm the analytical results are within established tolerances and the data is considered to be representative. The QA reports are presented with the certificates of analysis, Appendix G.

The calculated RPD values for the original and blind field duplicate samples ranged between 0 to 39% for the soil samples and 0 to 25% for the groundwater samples, both of which are within acceptable limits.

Based on the Quality Assurance reports and the calculated RPD values, the analytical data is considered to be representative.

10.0 Phase II ESA Summary and Interpretations

The following present a brief summary of the Phase II ESA findings/results and interpretations.

10.1 The Joseph A. Ghiz Memorial Park

Slag material was observed in eleven (11) of the twenty-three (23) shallow test holes that were excavated along the former CNR Railway tracks. The slag is assumed to have been the former rail bed material at one time.

Miscellaneous fill materials were observed in BH23-02 and MW23-02, both of which are located within the historical infilled swamp area.

Metal, Petroleum Hydrocarbons and PAH Exceedances in Shallow Soil (Along the Former CNR Rail Tracks): The metal (specifically arsenic, copper, arsenic, copper, lead, selenium and zinc), petroleum hydrocarbon and PAH exceedances along the former CNR railway tracks are typical of bedding materials along former railway tracks with creosote railway ties.

Based on the current site classification (i.e., Parkland/non-potable/coarse grained), the primary risk driver for these impacts is direct contact (i.e., ingestion/soil contact). There is a minimum of 0.15 m of compacted gravel and/or asphalt over the slag material which acts as a physical barrier that prevents a potential human receptor from coming into contact with the slag material. Because there is no pathway that links a human receptor to the slag, there is no risk. A physical barrier is an “engineering control” that is accepted by the regulators to manage risks. This approach will require a basic risk/soil management plan to be implemented and conducted (and documented) on a regular basis to inspect the barrier and ensure it is maintained in good condition.

Because the gravel and/or asphalt is maintained on the Confederation Trail and the walking trail, where the slag is located (primarily within the footprint of the former train tracks), this area is not considered to be a suitable or prime habitat for ecological receptors. As such, the potential of any ecological receptors coming into contact with the slag, and the associated risk, is considered to be low.

Metals at BH23-02 and MW23-02: Metal exceedances (specifically arsenic, copper, arsenic, copper, lead, selenium and zinc) at BH23-02 and MW23-02 are considered to be sourced from the miscellaneous debris that was used to infill the former swamp at this location. Similar to the above, this area of the Park is covered with a minimum of 0.12 m of topsoil and grass, which acts as a physical barrier that prevents a potential receptor from coming into contact with the metal impacted soil at these two locations. Because

these sample locations are located in a grass field, which is not considered to be a sensitive ecological environment, the potential ecological risks is considered to be low.

Benzene Exceedance at MW23-02 (0.75 mg/kg): The Tier RBSL (Residential) for benzene (0.099 mg/kg) is based on indoor air quality, which assumes there is a building located nearby on the property. However, this exposure pathway is not considered to be applicable to the Park, as there are no permanent buildings. The Tier II PSSL for soil ingestion (the second most conservative risk driver) is 66 mg/kg. As such, the detected benzene concentration does not pose a human health risk. The benzene concentration is also below the Tier I SESLs (Plants/Invertebrates – Direct Soil Contact) of 31 mg/kg. Based on this, the benzene concentration detected in the soil sample MW23-02 does not represent a human and/or environmental health risk.

Cadmium in Groundwater at MW23-02: The cadmium exceedance in groundwater at MW23-02 is considered to the sourced from the miscellaneous fill materials that were used when the swamp at this locations was historically infilled. Confirmatory and surface water sampling from the manmade ditch would be recommended to demonstrate there is no risk to the Hillsborough River.

10.2 Former Highways Depot

Miscellaneous debris was observed in the soil at MW23-13 (construction debris).

Metal and Petroleum Hydrocarbons Exceedances in Shallow Soil (Along the Former CNR Rail Tracks)
Metals (lead in SS-18 (a BFD of SS-17) and petroleum hydrocarbon (in SS-17 and SS-18 (BFD of SS-17) only) exceedances in the shallow soil samples are considered to have been sourced from the slag (or the original bedding material and creosote ties associated with the former railway tracks in this general area). The risk driver for these shallow soil impacts at this Site is direct contact (i.e., dermal contact/ingestion and/or inhalation). There is approximately 0.32 m of clean soil over the slag material which acts as a physical barrier that prevents a potential receptor from coming into contact with the slag material. Because there is no pathway that links a human receptor to the slag, there is no risk. As indicated previously, having a physical barrier to prevent a receptor from coming into contact with a contaminant is an acceptable approach to managing the human health risks.

Because SS-17 is located in a gravel/asphalt area within a commercial area (between the Former Highways Depot facility and the Tim Hortons and Wendy's facilities to the south), this area is not considered to be suitable or prime habitat for ecological receptors. As such, the potential risk of any ecological receptors coming into contact with the slag, and the associated ecological risk, is considered to be low.

Based on the above, the current metal and petroleum hydrocarbon exceedances are not considered to represent a human health and/or environmental health risk. The slag at this location, as well as, in other areas of this portion of the Site can be easily managed as part of the planned redevelopment. In general, these soil must not be exposed at surface, and must have a physical barrier over them (i.e., asphalt,

concrete, clean soil and/or clean topsoil) that prevents any receptors from coming into direct contact with the slag material. These soils can be easily managed with a soil management plan, which can be incorporated into the redevelopment plan.

Petroleum Hydrocarbon Exceedances Around the Former Highways Depot Building

Petroleum hydrocarbon exceedances were identified at three different locations around the Former Highways Depot Building, specifically at the above ground fuel oil tanks (north side of building); the former underground fuel oil tank (north side of building); and the former underground storage tanks/pump island (east side of building).

The petroleum hydrocarbons associated with the former underground fuel oil tank (north side of Building) and the existing above ground fuel oil tanks (north side of building) only exceed the Tier I RBSLs for residential land use, where as, the petroleum hydrocarbon concentrations associated with the former underground storage tanks/pump island (east side of building) exceed both the Tier I RBSLs for both residential and commercial land use (see Figure 6, Appendix A).

It is worth noting that the contaminated plume associated with the underground storage tanks/pump island (east side of building, which extends within the footprint of the building), consists of two different types of petroleum hydrocarbons. The portion of the impacted plume within the footprint of the building (specifically at BH23-10, BH23-13 and BH23-19) is characterized as a fuel oil, whereas, the portion of the impacted plume on the exterior of the building is characterized as a gasoline. The source of the gasoline impacts is considered to be the former underground storage tanks/pump island (east side of building). However, the source of the fuel oil impacts which appear to originate in the vicinity of BH23-13 is unknown.

It is noted that the impacted plume presented in Figure 6, Appendix A, is considered to be an upset limit. Because of the high petroleum hydrocarbon concentration detected at BH23-13 (36,000 mg/kg) and non-detected petroleum hydrocarbon concentrations in the adjacent boreholes (i.e., BH23-14, BH23-15 and BH23-21), a linear decrease of the concentrations from BH23-13 to the Tier I RBSLs toward these adjacent boreholes, effectively puts the concentration for the Tier I RBSLs for residential and/or commercial land use very close to the adjacent borehole locations. Additional delineation is recommended in this area to more accurately delineate and quantify the volume of impacted soil at this location.

Although there were VOC exceedances (benzene, toluene and ethylbenzene) at BH23-10 and MW23-11, these parameters are associated with the petroleum hydrocarbon impacts at these locations and are carried forward and addressed as such.

Given the extent of the contamination and the fact that the petroleum hydrocarbon exceedances represent a potential human health risk to indoor air, remediation and/or risk management should be

considered as part of the planned redevelopment of this portion of the Site. Both options can achieve regulatory closure (either unconditional or conditional closure) for the petroleum hydrocarbon impacts.

10.3 Administration Building and Emergency Shelters

Miscellaneous debris was observed in the soil at MW23-14 (possibly a single piece of wood debris) and MW23-19 (construction debris, wood debris, plastic and glass). It is worth noting that MW23-19 is located in an area that was infilled, based on the shoreline presented in the 1935 aerial photograph.

Metals at BH23-22, MW23-18 and MW23-19: Metal exceedances (specifically selenium and zinc) at BH23-22, MW23-18 and MW23-19 are considered to be sourced, in part, from the miscellaneous debris that was used to infill the former shoreline. Infilling in this area included most of Riverside Drive and the adjacent Irving Oil Bulk Plant and gasoline retail outlet.

Both the selenium and zinc concentrations only exceed the CCME CSQG for residential land use and are below the commercial land use guidelines. The selenium concentration at these sample locations are below the CCME Limited Pathway for SQGHH (soil ingestion) of 80 mg/kg. As such, the selenium concentrations do not pose a human health risk.

The CCME CSQG for selenium is an environmental guideline (soil contact) which is not considered to be applicable for this portion of the Site, based on the fact that this area is currently covered with exposed soil/gravel which is not considered to be suitable or prime ecological habitat. It is also understood that this portion of the Site is being considered for additional emergency shelters and/or a safe injection site.

Based on the above, the selenium and zinc concentrations do not represent a human and/or ecological health risk based on the current site characteristics and planned future development of the Site. These impacts can be managed easily as part of the planned redevelopment of the property as previously indicated (i.e., no exposed soil at surface, develop and implement and soil management plan).

Modified TPH Exceedance at MW23-19: The Modified TPH concentration of 320 mg/kg (fuel oil) exceeds the PHHR Tier I RBSL of 270 mg/kg, for residential land use. It is noted that the PHHR Tier I RBSL for fuel oil is based on the Atlantic RBCA Version 3 Tier I RBSL. The Version 4 (July 30, 2021) Tier I RBSL for fuel oil at a residential site is currently 320 mg/kg (equal to the Modified TPH concentration detected in the soil sample MW23-19). Based on this, the Modified TPH concentration of 320 mg/kg detected in the soil sample MW23-19, does not present a human or environmental health risk.

PAHs at SS-16: Although PAH exceedances were common in the shallow soil samples along the former railway tracks, the PAH concentrations in the shallow soil sample SS-16 were notably higher (i.e., by an order of magnitude). Field observations did not indicate any obvious heavy hydrocarbons in the shallow test hole. As such, the source of the higher PAH concentrations is unknown. Confirmatory and additional sampling is recommended to further assess this PAH exceedance.

The Atlantic RBCA process typically requires any contaminants (any exceedances) to be delineated to the Tier I RBSLs or CCME CSQG. Although the full delineation of the petroleum hydrocarbon impacted plumes around the Former Highways Building are recommended, the full delineation of the isolated metal and/or PAH exceedances is not recommended. These impacts, most of which are somewhat widespread (i.e., within the footprint of the former rail ways, or associated with infilled areas of the site) generally do not represent a human health and environmental risk. Thess impacts can be easily managed with an appropriate soil management plan, which can be included as part of the redevelopment of the property.

11.0 Conclusions

The following presents a summary of the Phase II ESA findings and results.

1. APEC #1: Former Queens County Highways Depot

Metal and petroleum hydrocarbon exceedances identified the shallow soil samples SS-17 and SS-18 (BFD of SS-17) do not represent a human and/or environmental health risk. The slag at this location, as well as, in other areas of this portion of the Site can be easily managed as part of the planned redevelopment (i.e., a soil management plan).

Petroleum hydrocarbon exceedances were identified at three different locations around the Former Highways Depot Building, specifically at the above ground fuel oil tanks (north side of building); the former fuel oil tank (north side of building); and the former underground storage tanks/pump island (east side of building). Additional delineation is recommended to better delineate and quantify the volume of impacted soil associated with the former underground storage tanks and pump island. Remediation and/or risk management should be considered as part of the planned redevelopment for this portion of the Site.

2. APEC #2: Former Rail Lines Throughout the Property

Metal, petroleum hydrocarbon and PAH exceedances were identified at eleven (11) of the shallow soil sample locations. However, these exceedances do not represent a human health risk with the presence of an existing physical barrier, and the potential ecological risks are considered to be low. A soil management plan would be required to manage potential risks associated with this material.

3. APEC #3: Former Infilled Area/Dump Location

Although miscellaneous debris was encountered at this location and there were a few individual metal and PAH exceedances in the soil, these concentrations do not represent a human or environmental health risk. These exceedances can be easily managed with a soil management plan for the Site.

4. APEC #4: Administration Building (Former Asphalt Testing Lab)

Although tetrachloroethylene (also referred to as tetrachloroethene) was detected in the groundwater sample around the administrative building, the concentrations were below the Tier II PSSL (Indoor Air). No Further assessment or remediation is recommended.

5. APEC #5: Irving Oil Bulk Plant and Gasoline Retail Outlet

There was no indication of any contamination at the Site associated with the Irving Oil Bulk Plant and Gasoline Retail Outlet. No further assessment or remediation is recommended.

6. APEC #6: Former Imperial Oil Bulk Plant

There was no indication of any significant contamination at the Site associated with past operations at the Former Imperial Oil Bulk Plant. Although there was a marginal benzene exceedance in soil at MW23-02, no other petroleum hydrocarbon concentrations were detected in MW23-02, MW23-03 and MW23-04. Based on this, it is assumed the benzene was more likely sourced from the fill material that was observed at this sample location. No Further soil assessment or remediation is recommended.

The cadmium exceedance in groundwater at MW23-02 is considered to the sourced from the miscellaneous fill materials that were used when the swamp at this location was historically infilled. Confirmatory and surface water sampling in the manmade ditch would is recommended to demonstrate there is no risk to the Hillsborough River.

7. APEC #7: Former Asphalt Plant

There were no indications of any impacts (i.e., field observations or analytical results) to the Site associated with the past operations at the former asphalt plant adjacent to the Site. No further assessment or remediation is recommended.

8. APEC #8: Former Coal Shed and Yard Storage

There were no indications of any impacts to the Site associated with the former adjacent coal storage shed/yard. No further assessment or remediation is recommended.

9. APEC #9: 377 Kent Street (Major Residential Fuel Oil Release)

There were no indications of any fuel oil impacts detected in soil or groundwater at MW23-01 (downgradient of the release property). No further assessment or remediation is recommended.

10. APEC #10: Former Concrete Plant

Although elevated PAHs were detected in SS-16, it is unlikely that the exceedances are associated with the former asphalt plant. It is recommended that confirmatory soil sample be conducted at SS-16 (to confirm the original results) and additional shallow soil samples be collected to delineate the horizontal and vertical extent of impacts.

12.0 Limitations

This report has been completed for the exclusive use of PEI DTI. Any other person or entity may not rely on this report without the express written consent of ALL-TECH. Any use which a third party makes of this report, or any reliance on decisions made based on it, are the responsibility of such third parties. ALL-TECH accepts no responsibility for damages, decisions made or actions taken, if any, suffered by any third party as a result of the unauthorized reuse, redistribution of, or reliance on this report. No portion of this report may be used as a separate entity; it is to be read in its entirety and shall include all supporting drawings and appendices.

The evaluation and conclusions contained in this report are based upon conditions at the time the work was conducted. In evaluating the Site, ALL-TECH has relied in good faith on representation and written/verbal information provided by The Client and by other individuals, parties or entities identified in this report. ALL-TECH has made reasonable attempts, wherever possible, to obtain a minimum of two confirmatory sources of information for verification purposes. In instances where more than one source of information was not available, ALL-TECH has assumed the information provided by others is factual and accurate; and as a result, has not independently verified, and accordingly shall have no responsibility for, the accuracy, completeness, workmanship or any other aspect of the information described above. Furthermore, ALL-TECH accepts no responsibility for any deficiency, misstatement or inaccuracy contained in this report as a result of omissions, misinterpretations or fraudulent acts of persons interviewed or contacted.

ALL-TECH makes no other representations, and no warranties or representations of any kind, either expressed or implied, including those concerning the legal significance of its findings, or as to other legal matters touched on in this report, including, but not limited to, ownership of any property, or the application of any law to the facts set forth herein. With respect to regulatory compliance issues, regulatory statutes are subject to interpretation and change. Such interpretations and regulatory changes should be reviewed with legal counsel.

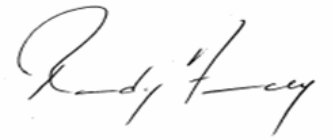
The conclusions and recommendations presented represent the best judgement of trained professional and technical staff at ALL-TECH based on the data obtained during the assessment, and in accordance with generally accepted engineering and scientific practices current at the time the work was performed. Due to the nature of assessment and the limited data available, ALL-TECH cannot warrant undiscovered environmental liabilities. Conclusions and recommendations presented in this report should not be construed as legal advice.

Should additional information become available which differs significantly from our understanding of the conditions presented in this report, we request that this information be brought to our attention so that we may reassess the conclusions provided herein.

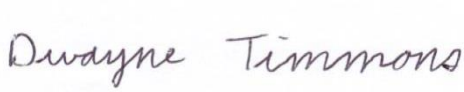
13.0 Closing

We trust this report is sufficient for your purposes at this time. However, if you have any questions or concerns, please do not hesitate to contact either of the undersigned at your convenience.

Respectively Submitted,



Randy Fancey, CET
Senior Environmental Consultant



Dwayne Timmons, B.SC., P.Eng.
Environmental Engineer (Site Professional)

References

Atlantic Risk-Based Corrective Action (RBCA). 2012. Atlantic Risk-Based Corrective Action (RBCA) for Petroleum Impacted Sites in Atlantic Canada (Version 4) User Guidance. July, 2012 (Updated January 2021).

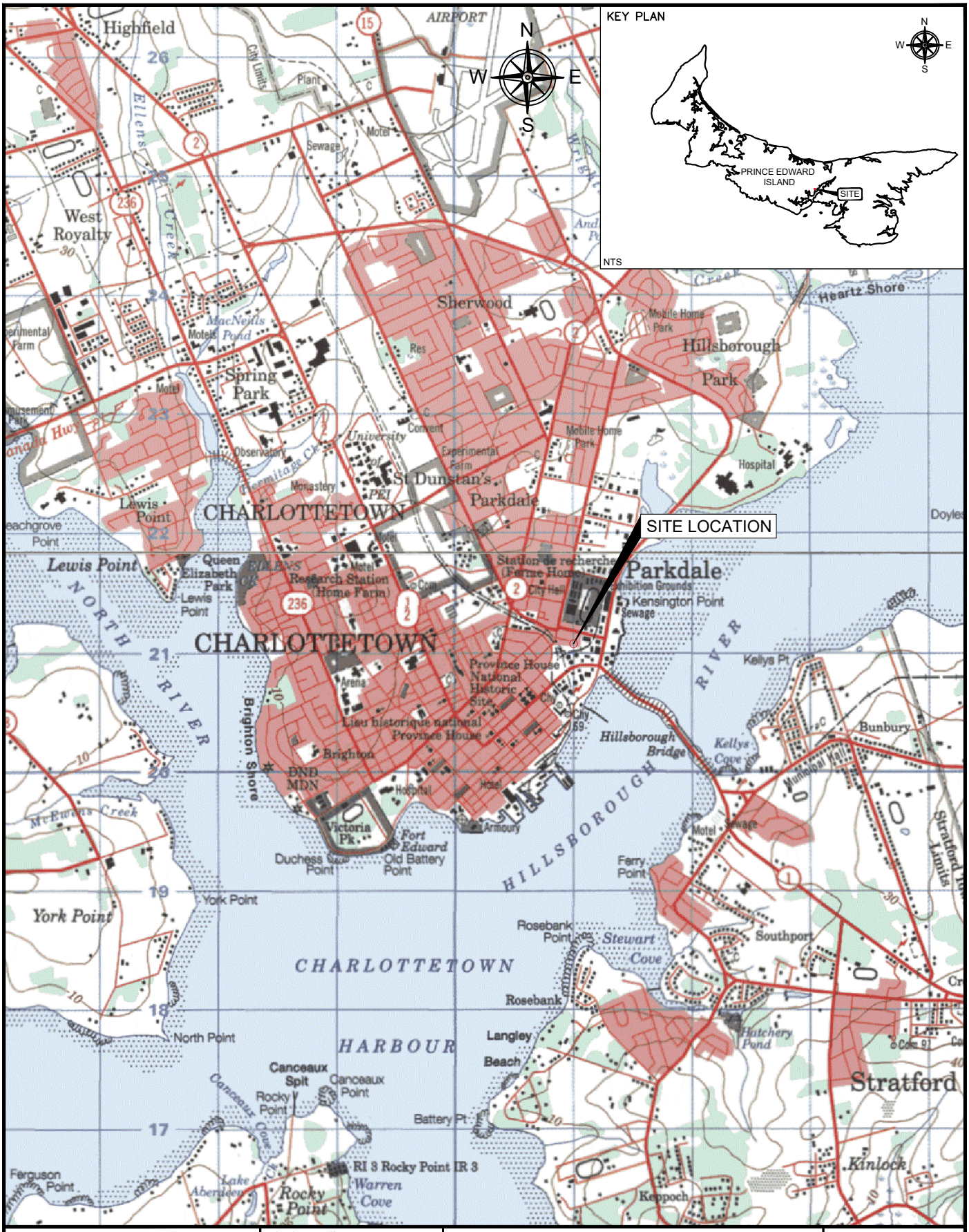
Canadian Council of Ministers of the Environment (CCME). 2016. Guidance Manual for Environmental Site Characterization in Support of Environmental and Human Health Risk Assessment – Volume 1 Guidance Manual. PN 1551, ISBN 978-1-77202-026-7.

Prince Edward Island Surficial Geology, Canadian Geoscience Map 345, Scale 1:50, 000

Prince Edward Island Bedrock Geology, Department of Mines and Technical Surveys, Map 34-1961

Phase I Environmental Site Assessment, Queens County Highway Depot, Charlottetown, PE (Stantec, December 2020)
Prince Edward Island, Environmental Protection Act (Chapter E-9). Updated September 2015. Petroleum Hydrocarbon Remediation Regulations

Appendix A Figures



ALL-TECH ENVIRONMENTAL SERVICES LIMITED	TOPO MAP # : 11L03	PROJECT: PHASE II ENVIRONMENTAL SITE ASSESSMENT FORMER QUEEN'S COUNTY HIGHWAYS DEPOT CHARLOTTETOWN, PEI	DATE: OCTOBER 2023
	SCALE : NTS		PROJECT #: PE23251
	DRAWN BY : SA	DRAWING TITLE: **SITE LOCATION MAP**	FIGURE #: 1
CLIENT: PEI TRANSPORTATION AND INFRASTRUCTURE	CHECKED BY : RF		

ALL-TECH
ENVIRONMENTAL SERVICES LIMITED

LEGEND:

- APPROXIMATE SITE BOUNDARY
- PID BOUNDARY
- FENCELINE
- APPROXIMATE MANMADE DITCH
- PID XXXXXX PID NUMBER

DRAWING TITLE:

SITE AND SURROUNDING AREAS

CLIENT:

PEI TRANSPORTATION AND INFRASTRUCTURE

PROJECT:

PHASE II ENVIRONMENTAL SITE ASSESSMENT
QUEEN'S COUNTY HIGHWAY DEPOT
CHARLOTTETOWN, PEI

DATE:	PROJECT #:
OCTOBER 2023	PE23251
SCALE: 1:2,000	FIGURE #: 2
DRAWN BY: SA	
CHECKED BY: RF	

ALL-TECH
ENVIRONMENTAL SERVICES LIMITED

LEGEND:

- APPROXIMATE SITE BOUNDARY
- PID BOUNDARY
- FENCELINE
- APPROXIMATE MANMADE DITCH
- BHXX-XX BOREHOLE LOCATION
- SS-XX SHALLOW SOIL SAMPLE LOCATION
- MWXX-XX MONITORING WELL LOCATION

DRAWING TITLE:

SAMPLE LOCATIONS - JOSEPH A. GHIZ MEMORIAL PARK

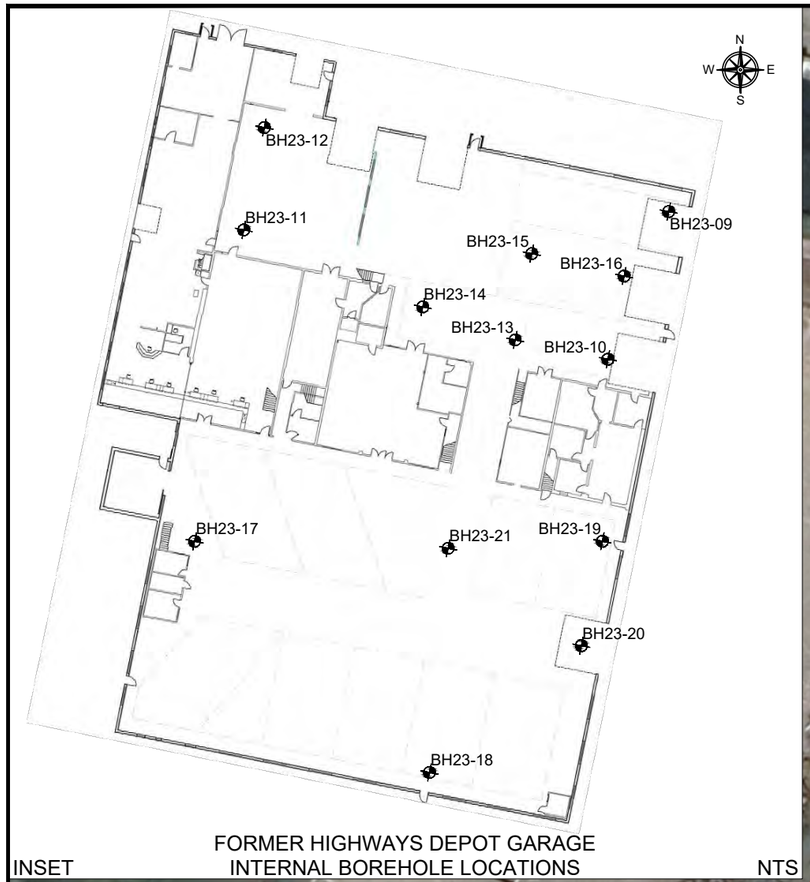
CLIENT:

PEI TRANSPORTATION AND INFRASTRUCTURE

PROJECT:

PHASE II ENVIRONMENTAL SITE ASSESSMENT
QUEEN'S COUNTY HIGHWAY DEPOT
CHARLOTTETOWN, PEI

DATE:	PROJECT #:
OCTOBER 2023	PE23251
SCALE: 1:2,000	FIGURE #: 3
DRAWN BY: SA	
CHECKED BY: RF	



INSET FORMER HIGHWAYS DEPOT GARAGE INTERNAL BOREHOLE LOCATIONS NTS

ALL-TECH
ENVIRONMENTAL SERVICES LIMITED

LEGEND:

- APPROXIMATE SITE BOUNDARY
- PID BOUNDARY
- FENCELINE
- APPROXIMATE MANMADE DITCH
- BHXX-XX BOREHOLE LOCATION
- SS-XX SHALLOW SOIL SAMPLE LOCATION
- MWXX-XX MONITORING WELL LOCATION

DRAWING TITLE:
SAMPLE LOCATIONS - FORMER HIGHWAYS DEPOT GARAGE, ADMINISTRATIVE BUILDING AND EMERGENCY SHELTER(S)

CLIENT:
PEI TRANSPORTATION AND INFRASTRUCTURE

PROJECT:
PHASE II ENVIRONMENTAL SITE ASSESSMENT
QUEEN'S COUNTY HIGHWAY DEPOT
CHARTLOTTETOWN, PEI

DATE:	PROJECT #:
OCTOBER 2023	PE23251
SCALE: 1:1,000	FIGURE #: 4
DRAWN BY: SA	
CHECKED BY: RF	

ALL-TECH
ENVIRONMENTAL SERVICES LIMITED

LEGEND:

- APPROXIMATE SITE BOUNDARY
- PID BOUNDARY
- FENCELINE
- APPROXIMATE MANMADE DITCH
- METAL, PAH, AND PETROLEUM HYDROCARBON EXCEEDANCES IN SHALLOW SOIL
- METAL EXCEEDANCES IN SOIL
- METAL AND PETROLEUM HYDROCARBON EXCEEDANCES IN SOIL
- BHXX-XX — BOREHOLE LOCATION
- SS-XX — SHALLOW SOIL SAMPLE LOCATION
- MWXX-XX — MONITORING WELL LOCATION

DRAWING TITLE:

IMPACTED AREAS - JOSEPH A. GHIZ MEMORIAL PARK

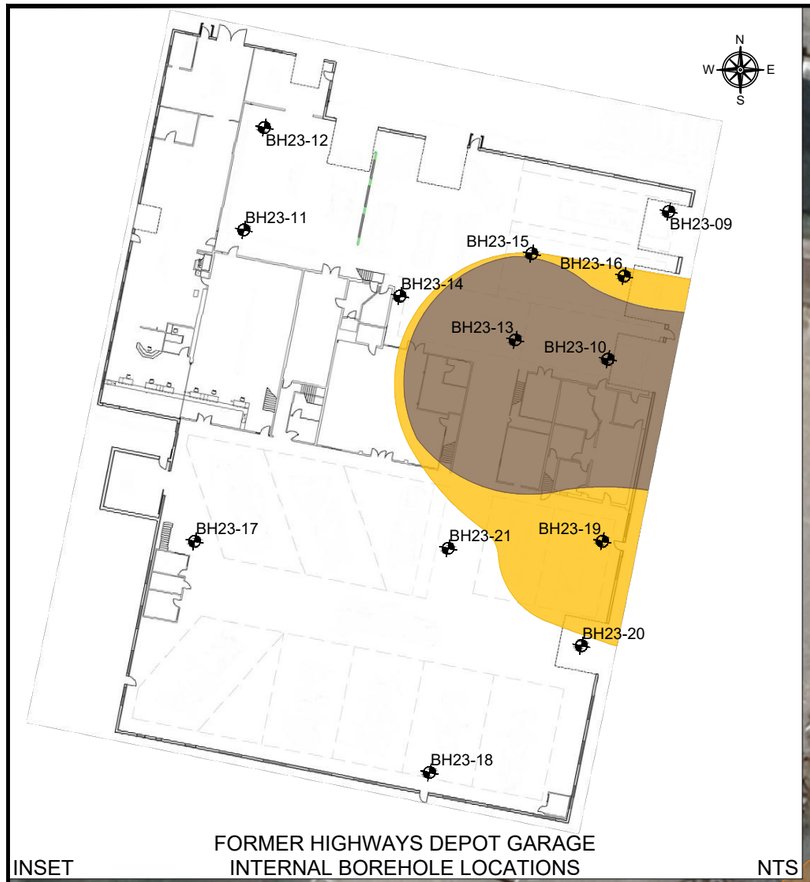
CLIENT:

PEI TRANSPORTATION AND INFRASTRUCTURE

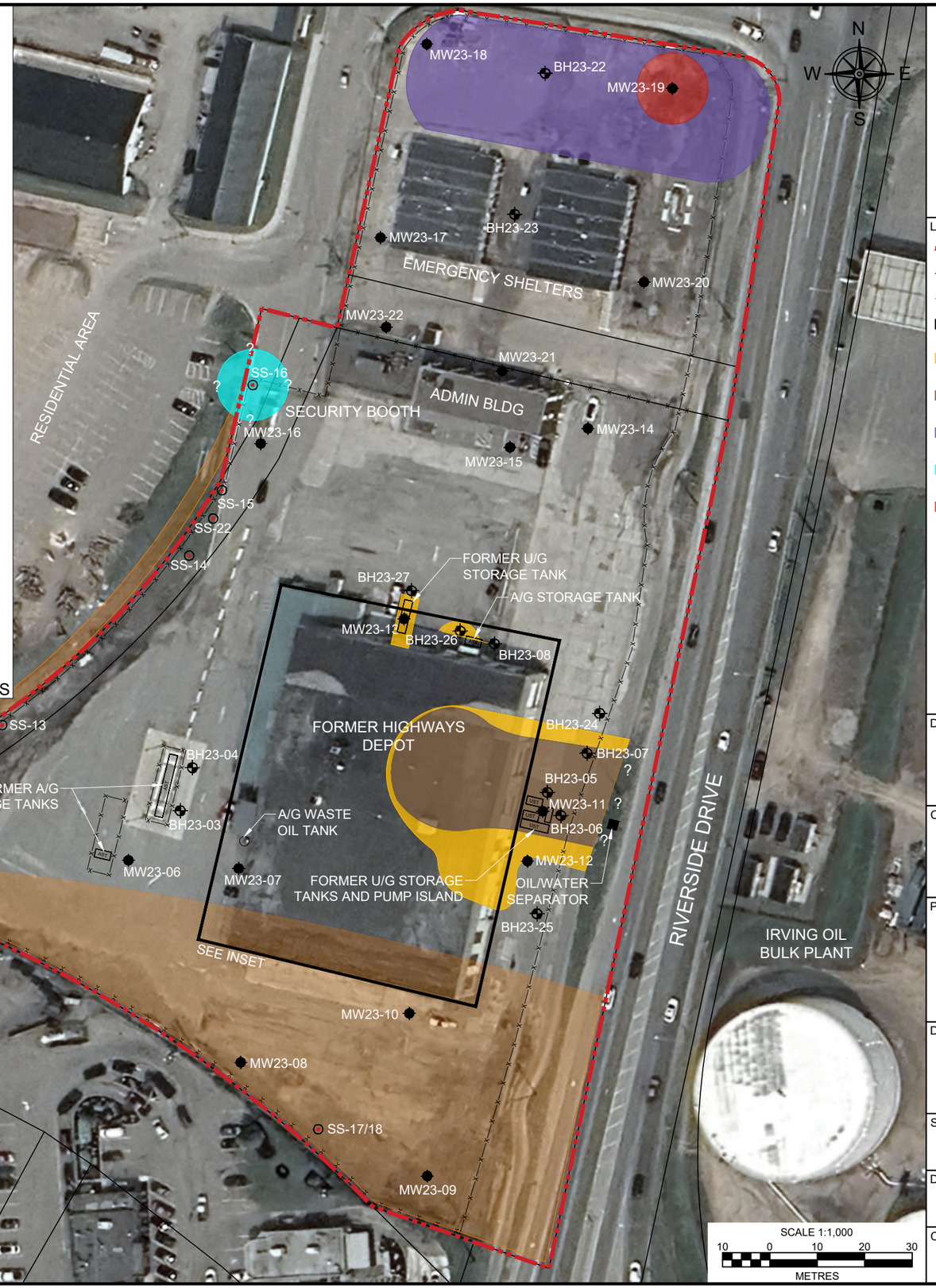
PROJECT:

PHASE II ENVIRONMENTAL SITE ASSESSMENT
QUEEN'S COUNTY HIGHWAY DEPOT
CHARTLOTTETOWN, PEI

DATE:	PROJECT #:
OCTOBER 2023	PE23251
SCALE: 1:2,000	FIGURE #: 5
DRAWN BY: SA	
CHECKED BY: RF	



INSET FORMER HIGHWAYS DEPOT GARAGE INTERNAL BOREHOLE LOCATIONS NTS



ALL-TECH
ENVIRONMENTAL SERVICES LIMITED

LEGEND:

- APPROXIMATE SITE BOUNDARY
- PID BOUNDARY
- FENCELINE
- APPROXIMATE MANMADE DITCH
- PHC EXCEEDANCES IN SOIL (RESIDENTIAL)
- PHC EXCEEDANCES IN SOIL (COMMERCIAL)
- METAL EXCEEDANCES IN SOIL (RESIDENTIAL)
- PAH EXCEEDANCES IN SOIL (RESIDENTIAL AND COMMERCIAL)
- METAL AND PAH EXCEEDANCES IN SOIL
- BHXX-XX BOREHOLE LOCATION
- SS-XX SHALLOW SOIL SAMPLE LOCATION
- MWXX-XX MONITORING WELL LOCATION

DRAWING TITLE:

IMPACTED AREAS - FORMER HIGHWAYS DEPOT GARAGE, ADMINISTRATIVE BUILDING AND EMERGENCY SHELTERS

CLIENT:

PEI TRANSPORTATION AND INFRASTRUCTURE

PROJECT:

PHASE II ENVIRONMENTAL SITE ASSESSMENT
QUEEN'S COUNTY HIGHWAY DEPOT
CHARTLOTTETOWN, PEI

DATE:	PROJECT #:
OCTOBER 2023	PE23251
SCALE: 1:1,000	FIGURE #: 6
DRAWN BY: SA	
CHECKED BY: RF	

Appendix B Photographs

1. Looking southwest towards the government garage building.

2. Looking southeast towards the government garage building.

3. Looking east towards the government garage building.

4. Looking southeast towards the government garage building and former tank farm.

5. Looking north towards the former tank farm.

6. Looking north towards the south side of the government garage building.

7. Looking north towards the east side of the government garage building.

8. Looking northwest towards MW23-12, active AST, and former pump island location.

9. Two ASTs located adjacent to the northeast side of the government garage.

10. Looking west towards the interior of the government garage.

11. Looking east across the interior garage bay area.

12. Looking west towards BH23-17

13. Looking north towards the administrative building.

14. Looking northeast towards the administrative building.

15. Looking east towards the area between the temporary housing and administrative building.

16. Looking west towards the area behind the temporary housing units.

13. Looking west along the recreation trail (former rail line).

14. Looking east across the southwest portion of the Site.

15. Looking towards MW23-01.

16. Looking towards MW23-05.

13. Black slag material in SS-05.

14. Black slag material in SS-07.

15. Black slag material in SS-08

16. Black slag material in SS-18

13. Black fill material from BH23-02.

14. High amounts of organic material observed in MW23-03.

15. Grey stain soil observed in MW23-11.

16. Very saturated soil from MW23-12.

Appendix C Phase I ESA – APEC Summaries

Table ES1.1 Areas of Potential Environmental Concern

APEC #	Source/Location	Drawing # (Appendix A)	Report Section Reference	APEC	Description	PCOC	Recommendations
APEC #1	Northeast portion of the site PID #365593	Drawing #4	6.1.1 6.1.4	Historical and current use of the site as a government garage including the storage, maintenance, fuelling and repair of equipment, vehicles, and materials used to maintain transportation systems including storage and use of petroleum products	• Site has been occupied by a government garage for ~70 years (1950-current) • Storage, maintenance, and repair of vehicles on site including the use and storage of petroleum and chemical products • Presence of seven ASTs containing gasoline, heating fuel, diesel, and waste oil, some without secondary containment • Presence of an OWS in the maintenance garage • PEI EWCC records of two active ASTs and seven removed USTs between 1962 and 2017 • PEI EWCC records of two spills of gasoline and heating oil	PHCs, VOCs	Conduct a detailed Phase II ESA including the installation of groundwater monitoring wells and the collection of soil and groundwater samples.
APEC #2	West and southwestern portions of the site PID #365593 and 336537	Drawing #4	6.1.1	Historical presence and operation of former rail lines that traversed the borders of the site	• Former rail lines were present to the west of the northeastern portion of the site and to the north and south of the southwestern portion of the site between <1903-1990	Metals, PAHs, PHCs	Phase II ESA - conduct shallow soil sampling in the areas surrounding the former rail lines to confirm or refute the presence of PCOC.
APEC #3	Northeastern portion of the site PID #365593	Drawing #4	7.5.2	Former use of the site for dumping of waste and importation of fill materials of unknown origin on the northeastern portion of the site	• It was reported that fill materials of unknown origin were imported to the site to extend the lands to the east. The area surrounding the maintenance and administrative buildings was referred to as a landfilled area suggesting waste was historically dumped or imported on the north portion of the site. It was reported that the fill material below surface was black with waste tires, timber, and bottles observed.	Metals, PHCs, VOCs, PAHs, PCBs	Conduct a detailed Phase II ESA including the installation of groundwater monitoring wells and the collection of soil and groundwater samples.
APEC #4	Northeastern portion of the site PID #365593	Drawing #4	8.0	Former asphalt materials testing laboratory operations in the Administrative building	• It was reported that there was a former asphalt lab operating in the administrative building on site. Based on the approximate age of the building and operations, there's a potential for the former use of Perchloroethylene, a chlorinated solvent.	PHCs, VOCs, PAHs	Conduct a detailed Phase II ESA including the installation of groundwater monitoring wells and the collection of soil and groundwater samples.
APEC #5	Off-site ~20 m to the east of the northeastern portion of the site PID #776658	Drawing #4	6.1.1	Historical and current operation of a bulk storage plant and service station owned by Irving Oil Co. located in close proximity to the site	• Bulk storage of petroleum products on the property located ~ 20 m to the east of the site • Irving Oil Co. plant and service station operated on the property from <1956 to current day • Six large storage tanks of petroleum products are present on the property • PEI EWCC records of 11 ASTs on the property, one removal of a UST in 2011 • PEI EWCC records of 25 releases of petroleum products to the property between 1997 and 2012 resulting in ~70,000 L released	PHCs, PAHs, Metals	Conduct a detailed Phase II ESA including the installation of groundwater monitoring wells and the collection of soil and groundwater samples.
APEC #6	Off-site South adjacent to the southwestern portion of the site PID #365668 and 825943	Drawing #4	6.1.1 6.1.4	Historical operation of a bulk storage plant owned by Imperial Oil Limited located adjacent to the site	• Bulk storage of petroleum products on the property located adjacent to the south of the southwestern portion of the site • Five large storage tanks were present containing furnace oil, stove oil, diesel oil, and gasoline • PEI EWCC records of 18 former USTs between 1955 and 2002, some unsupervised removals? • PEI EWCC record of a 50,000 L spill of gasoline with follow-up environmental assessments • Property listed on the Contaminated Sites Registry	PHCs, PAHs, Metals	Conduct a detailed Phase II ESA including the installation of groundwater monitoring wells and the collection of soil and groundwater samples.

Table ES1.1 Areas of Potential Environmental Concern

APEC #	Source/Location	Drawing # (Appendix A)	Report Section Reference	APEC	Description	PCOC	Recommendations
APEC #7	Off-site South adjacent to the northeastern portion of the site PID #365643	Drawing #4	6.1.1	Historical operation of an asphalt manufacturer, Corporation Asphalt, with the former presence of an underground storage tank adjacent to the site	• Presence of an asphalt plant, identified on a FIP in 1956 • An underground storage tank was identified on the property	PHCs, VOCs	Conduct a detailed Phase II ESA including the installation of groundwater monitoring wells and the collection of soil and groundwater samples.
APEC #8	Off-site South adjacent to the southwestern portion of the site PID #365619	Drawing #4	6.1.1 and 6.1.4	Historical storage of coal by H.B.Weeks Coal Yard located adjacent to the site and historical presence of four USTs with identified contaminated soil remaining.	• H.B. Weeks Coal Yard was identified on FIPs in 1956 and 1963. • Two large coal sheds were identified on the property • PEI EWCC records of removals of four USTs between 1950 and 1990 • PEI EWCC record of contaminated soil identified during a diesel tank removal with some remaining on the property	PAHs, PHCs	Conduct a detailed Phase II ESA including the installation of groundwater monitoring wells and the collection of soil and groundwater samples.
APEC #9	Off-site ~15 m west of the southwestern portion of the site PID #345488	Drawing #4	6.1.4	Current and historical presence of an AST on the property with a 'major spill' reported in 2001 by PEI EWCC located in close proximity and up-gradient to the site	• A 'major spill' of unreported quantity occurred on March 14, 2001 as a result of a corroded home heating oil tank. A remedial excavation was dug, and confirmatory samples were collected. Samples exceeded the Tier I criteria and a risk assessment was completed. The Department granted closure on December 30, 2003.	PHCs	Conduct a detailed Phase II ESA including the installation of groundwater monitoring wells and the collection of soil and groundwater samples.
APEC #10	Off-site ~50 m to the northwest of the northeastern portion of the site PID #365585	Drawing #4	6.1.1	Historical operation of a concrete plant owned by M.F. Schurman Co. Limited with the presence of a UST located in close proximity to the site	• A concrete plant owned by M.F. Schurman Co. Limited producing ready-mix concrete was identified in the 1953 and 1963 FIPs • A UST is indicated on the 1963 FIP next to two garages, one indicated as a repair garage.	PHCs, VOCs	Conduct a detailed Phase II ESA including the installation of groundwater monitoring wells and the collection of soil and groundwater samples.

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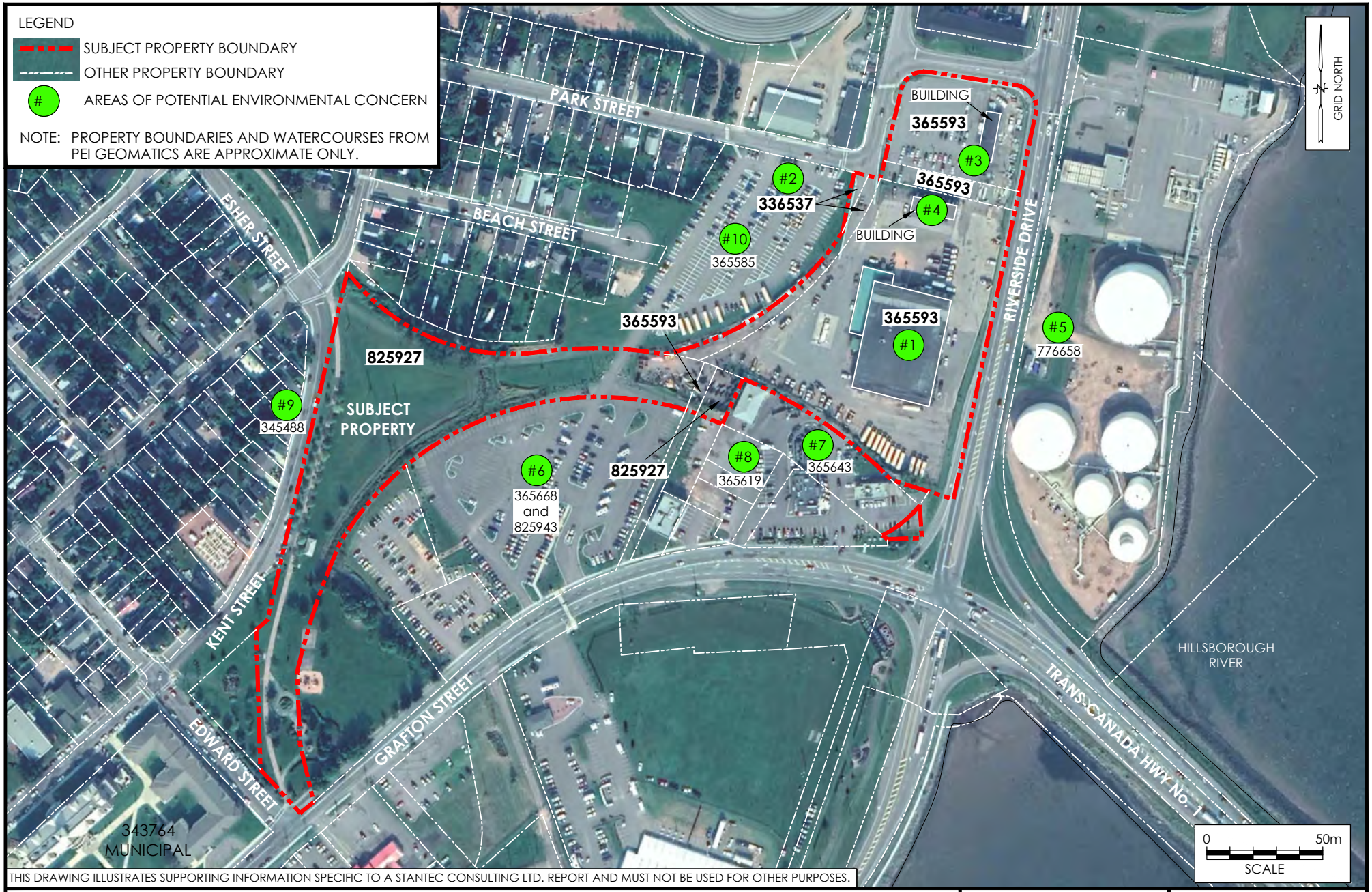


THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

AREAS OF POTENTIAL ENVIRONMENTAL CONCERN

PHASE I ENVIRONMENTAL SITE ASSESSMENT

QUEENS COUNTY HIGHWAY DEPOT, RIVERSIDE DRIVE, CHARLOTTETOWN, PEI

Client:	PEI DEPARTMENT OF TRANSPORTATION, INFRASTRUCTURE AND ENERGY

Job No.:	121431113
Scale:	1 : 2000
Date:	20-AUG-2020
Dwn. By:	WJD
App'd By:	SG

Dwg. No.: 4

Stantec

Appendix D Limited File Search/Review Documents

Form 1

Classification :
Map Number : 11 B

APPLICATION FOR STORAGE TANK REGISTRATION FORM
(For existing tanks, alterating existing tanks and installation of new tanks)

Under Subsection 2(4) of the Petroleum Storage Tanks Regulations made under the Environmental Protection Act R.S.P.E.I. 1988 Cap.E-9, all storage tank systems must be registered with the regulatory agency. All applicable sections of this form must be completed by the tank owner to qualify for tank registration.

Facility Information

1. Tank Ownership
Owner's Name : DEPT OF TRANSPORTATION & PW Telephone: 368-4771
Mailing Address : PO BOX 1600 CHARLOTTETOWN
Province : PEI Postal Code : C1A 7N8
Business Name : MECHANICAL BRANCH
Tank Location : CHARLOTTETOWN GARAGE Property Tax #:
Operator's Name (Retail Only) : Petroleum Supplier: ISLAND PET

TANK STATUS

☐ Above Ground ☑ Below Ground

☐ Existing Tank Registration (Proceed to # 2) ☑ Tank Alteration (Proceed to #3) ☐ New Installation Site (Proceed to #.4)

2. Existing Tank(s) Registration:

a. ☐ Year Round Operation ☐ Tank Alteration ☐ Permanently Out of Use

b. Estimated Year of Installation:
Tank No. 1____ 2____ 3____ 4____ 5____ 6____
(Proceed to # 5, Sketch or Map)

3. Tank Alteration:
a. Proposed Date Tank to be Altered: ____ / 06 / 1998
b. Existing Tank Registration Number(s):
Tank No. 1____ 2____ 3____ 4____ 5____ 6____

c. ☑ Year Round Operation ☐ Seasonal Operation ☐ Permanently Out of Use

(Proceed to # 5, Sketch or Map)

4. New Tank Installation Site:
a. Proposed Date Tank(s) to be Installed: ____ / ____ / ____

b. ☐ Year Round Operation ☐ Seasonal Operation

(Proceed to # 5, Sketch or Map)

5. Sketch or Map indicating the exact location of the tank system in relation to buildings, roads, wells, underground pipelines, streams and other features. Please number tanks the same as on other sections of this form.

RIVERSIDE DR

☐ - FUEL ISLAND

☒ TANK

6. Certification (Read and sign after completing # 7)

I certify that to the best of my knowledge the submitted information is true, accurate and complete.

Name and official title of owner or owner's authorized representative	Signature	Date Signed
SENIOR MANAGER MECHANICAL BRANCH		24 APR 98

1810-C-13T

Schedule A

Underground Petroleum Storage Tanks Application for Registration Form

) of the Petroleum Storage Tanks Regulations made under the ection Act R.S.P.E.I. 1974, Cap. E-8.1, all underground petroleum a capacity of 2000 litres or greater must be registered with the regulatory agency. All applicable sections of this form must be completed by the tank owner in order to qualify for tank registration.

1. Tank Ownership

Owner's Name: Province of P.E.I.

(Corporation, Individual, Public Agency or other entity)

Mailing Address: Transportation & Public Works PO Box 2000

Province: PEI Postal Code: C1A-7N8

Telephone number: 368-4758

RECEIVED MAY 11 1989 Dept. Of Community and Cultural Affairs

2. Type of Installation

Bulk Plant:☐ Service Station:☐ Marine:☐
Farm:☐ Residential:☐ Commercial:☐

Installation Description:
Proposed:☐ Replacement:☑ Existing:☐
Installer:

Number of Underground Tanks: 2

RECEIVED MAY 11 1989 Dept. Of Community and Cultural Affairs

3. Location of Tank(s)

Business Name: Gov't Garage

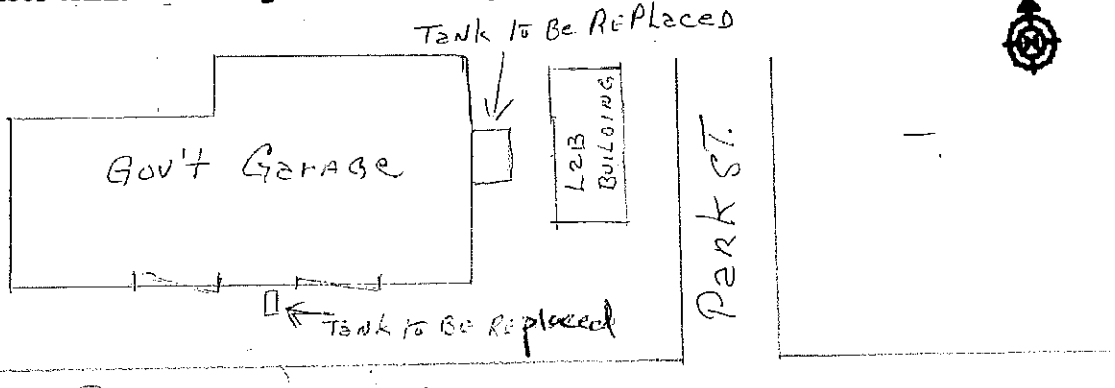
Street Address: Park St and Riverside Dr. Municipality:

(Street number, Route number or Name of Road)

Postal Code: P.E.I. Property Tax No. 365593

Operator's Name: (Retail Only) Petroleum Supplier: SHELL

4. Sketch or Map indicating the exact location of the tank system in relation to buildings, roads, wells, underground pipelines, streams and other features. Please number tanks according to information provided on reverse.



137

PRINCE EDWARD ISLAND
DEPARTMENT OF THE ENVIRONMENT
ID TAG PLACEMENT

Account Name: Government of P.E.I. (Government Garage).

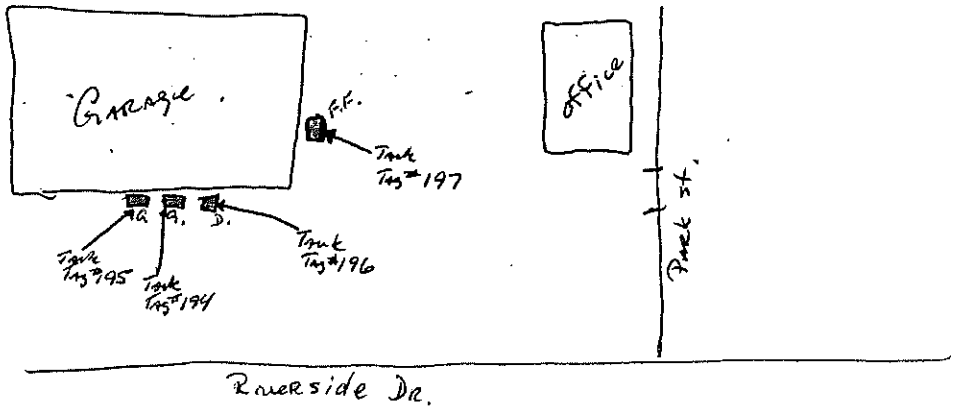
Tank Location: Riverside Dr. Ch'town.

Property Tax No. 365593

Site Type: Retail ☐ Commercial ☑ Marine ☐ Bulk Plant ☐

	Capacity	Product	Reg.#	Tag #
Tank #1	8900 l.	Gasoline	40599	0194
Tank #2	13000 l.	~~Diesel~~ Gasoline	40600 ~	0195
Tank #3	22730 l.	~~Gasoline~~ Diesel	41174 ~	0196
Tank #4	22730 l.	Furnace Fuel	41175 ~	0197
Tank #5				
Tank #6				

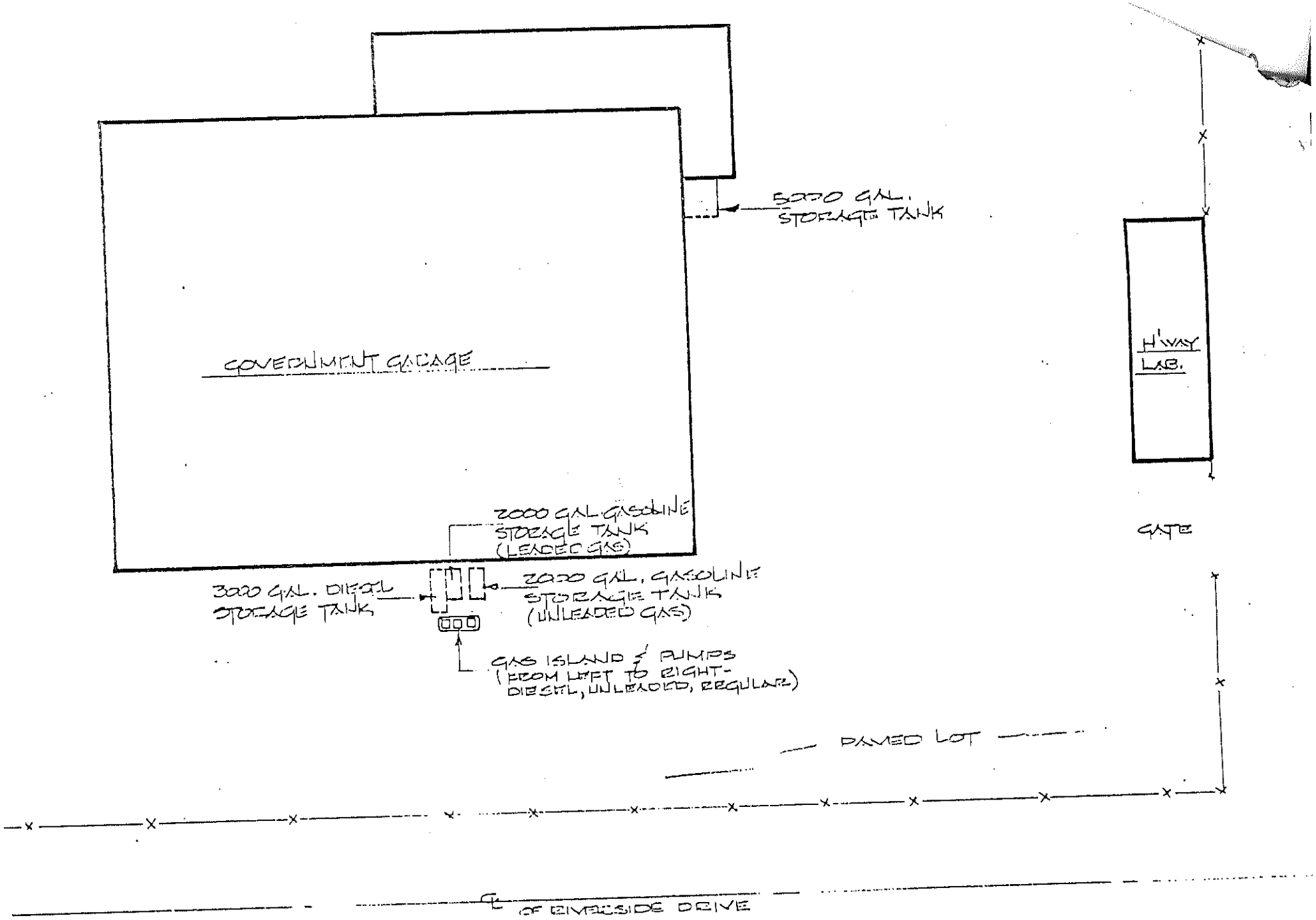
(Sketch Showing Tank Layout Including Tanks Number As Above)



Comments:

Dan Poirier — Inspector

May 17/90. — Date



GOVERNMENT GARAGE
FUEL STORAGE TANK(S) LOCATION

opta
INFORMATION INTELLIGENCE

enviroscan

An SCM Company

175 Commerce Valley Drive W
Markham, Ontario L3T 7Z3

T: 905-882-6300
W: www.optaintel.ca

Report Completed By:

Stephanie

Site Address:

Riverside Drive Charlottetown PE Canada

Project No:

PE23251

Opta Order ID:

129255

Requested by:

Vlad Trajkovic
ALLTECH Environmental Services

Date Completed:

6/21/2023 10:09:24 AM

Project Name: Phase II ESA
Former Highway Depot

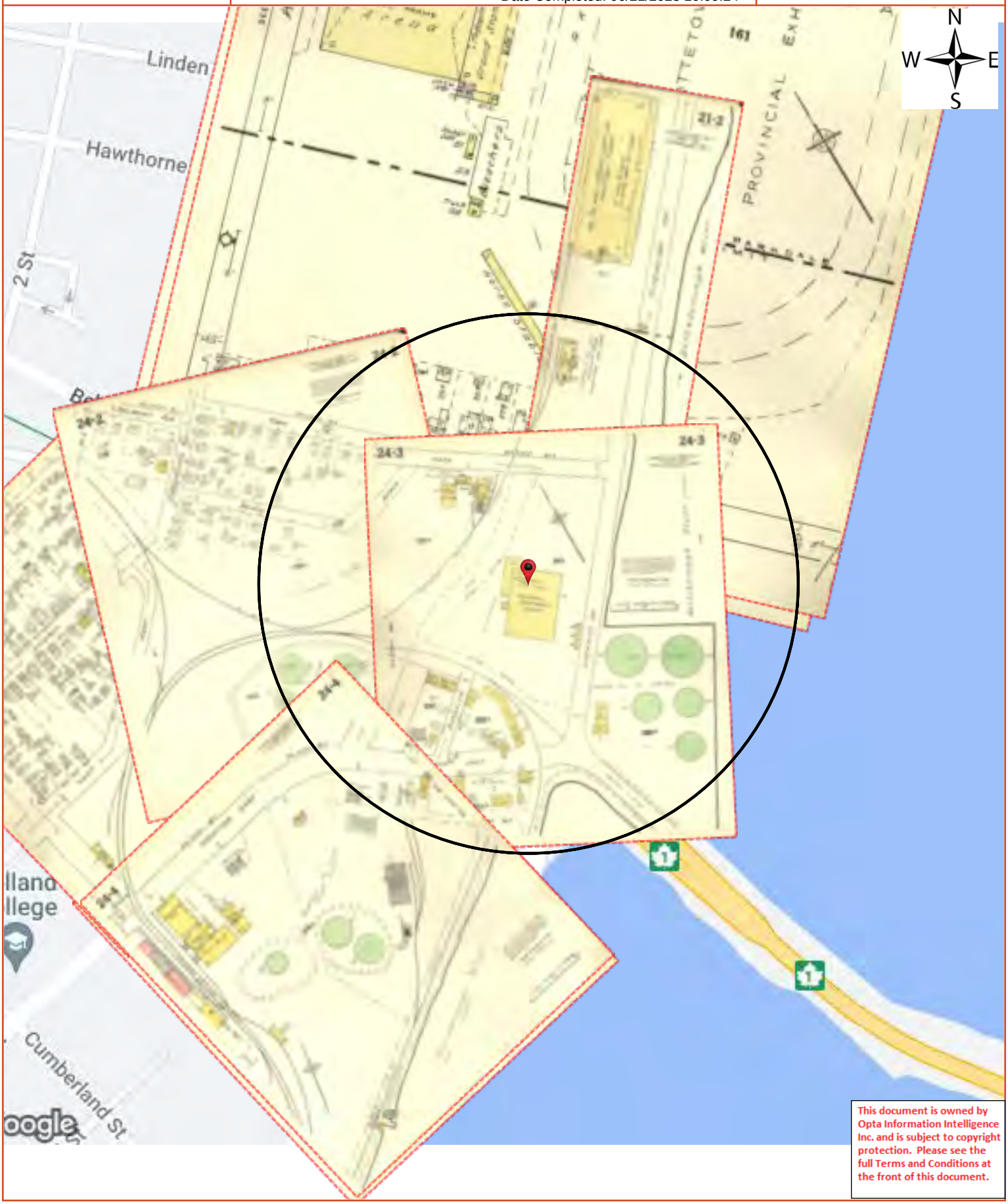
Project #: PE23251

ENVIROSCAN Report

Search Area: Riverside Drive Charlottetown PE Canada

Requested by:
Vlad Trajkovic
Date Completed: 06/21/2023 10:09:24

enviroscan
OPTA INFORMATION INTELLIGENCE



Opta Historical Environmental Services Enviroscan™ Terms and Conditions

Report

The documents (hereinafter referred to as the "Documents") to be released as part of the report (hereinafter referred to as the "Report") to be delivered to the purchaser as set out above are documents in Opta's records relating to the described property (hereinafter referred to as the "Property"). Opta makes no representations or warranties respecting the Documents whatsoever, including, without limitation, with respect to the completeness, accuracy or usefulness of the Documents, and does not represent or warrant that these are the only plans and reports prepared in association with the Property or in Opta's possession at the time of Report delivery to the purchaser. The Documents are current as of the date(s) indicated on them. Interpretation of the Documents, if any, is by inference based upon the information which is apparent and obvious on the face of the Documents only. Opta does not represent, warrant or guarantee that interpretations other than those referred to do not exist from other sources. The Report will be prepared for use by the purchaser of the services as shown above hereof only.

Disclaimer

Opta disclaims responsibility for any losses or damages of any kind whatsoever, whether consequential or other, however caused, incurred or suffered, arising directly or indirectly as a result of the services (which services include, but are not limited to, the preparation of the Report provided hereunder), including but not limited to, any losses or damages arising directly or indirectly from any breach of contract, fundamental or otherwise, from reliance on Opta Reports or from any tortious acts or omissions of Opta's agents, employees or representatives.

Entire Agreement

The parties hereto acknowledge and agree to be bound by the terms and conditions hereof. The request form constitutes the entire agreement between the parties pertaining to the subject matter hereof and supersedes all prior and contemporaneous agreements, negotiations and discussions, whether oral or written, and there are no representations or warranties, or other agreements between the parties in connection with the subject matter hereof except as specifically set forth herein. No supplement, modification, waiver, or termination of the request shall be binding, unless confirmed in writing by the parties hereto.

Governing Document

In the event of any conflicts or inconsistencies between the provisions hereof and the Reports, the rights and obligations of the parties shall be deemed to be governed by the request form, which shall be the paramount document.

Law

This agreement shall be governed by and construed in accordance with the laws of the Province of Ontario and the laws of Canada applicable therein.

ENVIROSCAN Report

Report Index

Requested by:
Vlad Trajkovic
Date Completed: 06/21/2023 10:09:24

OPTA INFORMATION INTELLIGENCE

Page	Report Title
6	(1956) Volume: Charlottetown Firemap: 21-2
8	(1956) Volume: Charlottetown Firemap: 21-2
10	(1956) Volume: Charlottetown Firemap: 24-1
12	(1956) Volume: Charlottetown Firemap: 24-2
14	(1956) Volume: Charlottetown Firemap: 24-3
16	(1956) Volume: Charlottetown Firemap: 24-4
18	(1963) Volume: Charlottetown Firemap: 21-2
20	(1963) Volume: Charlottetown Firemap: 21-2
22	(1963) Volume: Charlottetown Firemap: 24-1
24	(1963) Volume: Charlottetown Firemap: 24-2
26	(1963) Volume: Charlottetown Firemap: 24-3
28	(1963) Volume: Charlottetown Firemap: 24-4

Project Name: Phase II ESA
Former Highway Depot

Project #: PE23251

ENVIROSCAN Report

1956 Volume: Charlottetown Firemap: 21-2
Charlettetown Plan: 40 (1956)
Sheet: 21-2 (1956)

Requested by:
Vlad Trajkovic
Date Completed: 06/21/2023 10:09:24

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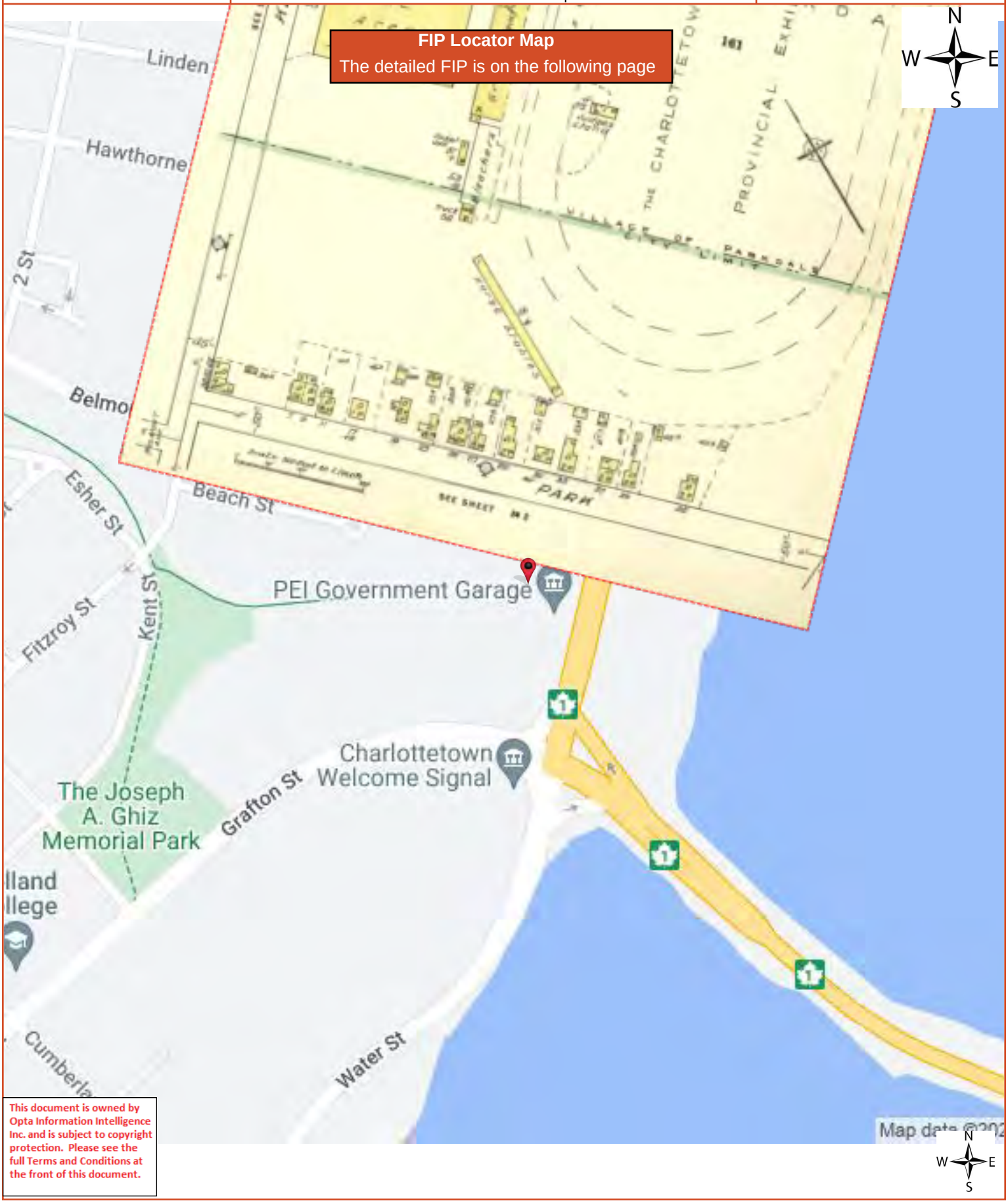
OPTA INFORMATION INTELLIGENCE

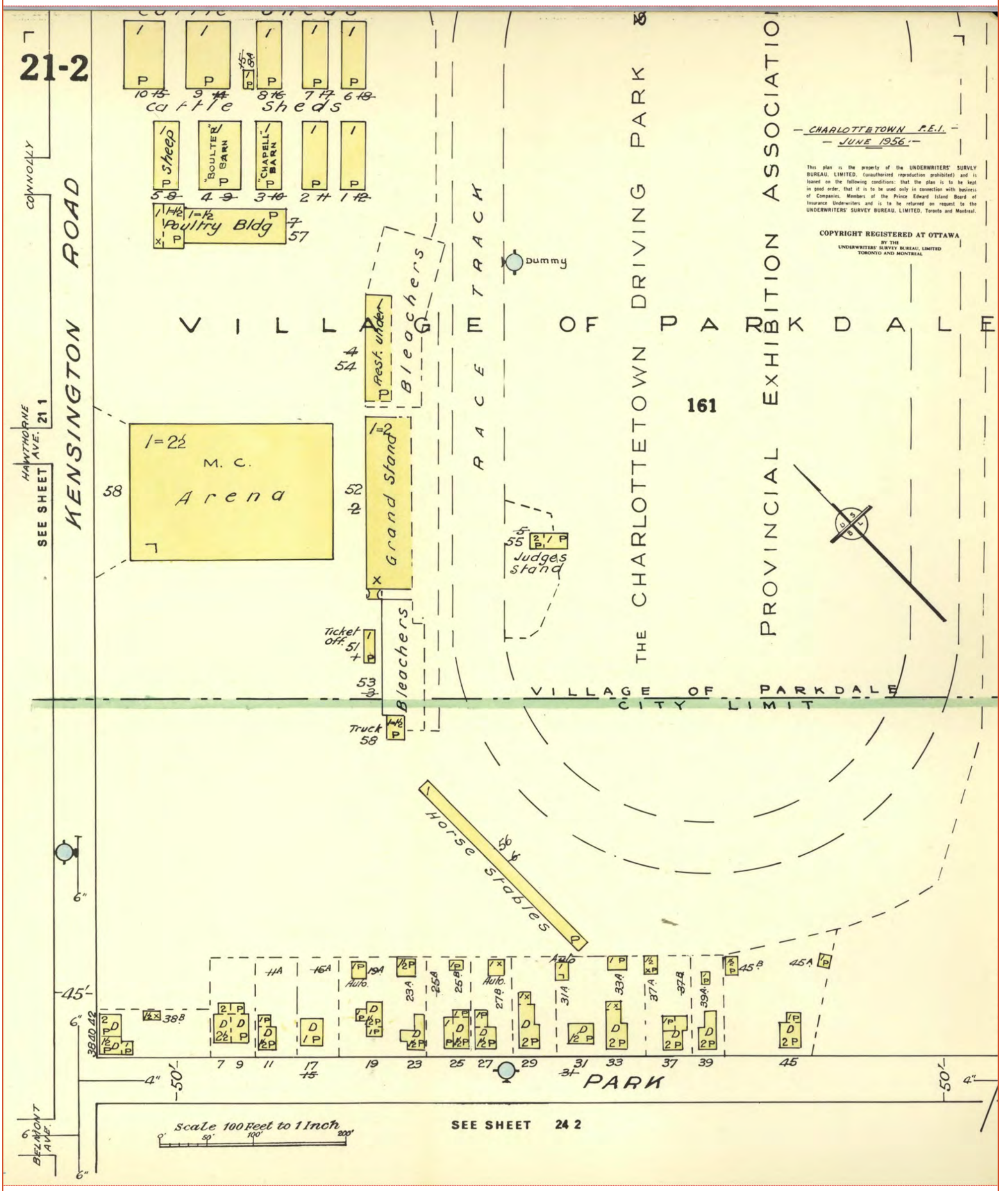
FIP Locator Map
The detailed FIP is on the following page



ENVIROSCAN Report

1956 Volume: Charlottetown Firemap: 21-2
Charlettetown Plan: 40 (1956)
Sheet: 21-2 (1956)

Requested by:
Vlad Trajkovic
Date Completed: 06/21/2023 10:09:24



Project Name: Phase II ESA
Former Highway Depot

Project #: PE23251

ENVIROSCAN Report

1956 Volume: Charlottetown Firemap: 21-2
Charlettetown Plan: 40 (1956)
Sheet: 21-2 (1956)

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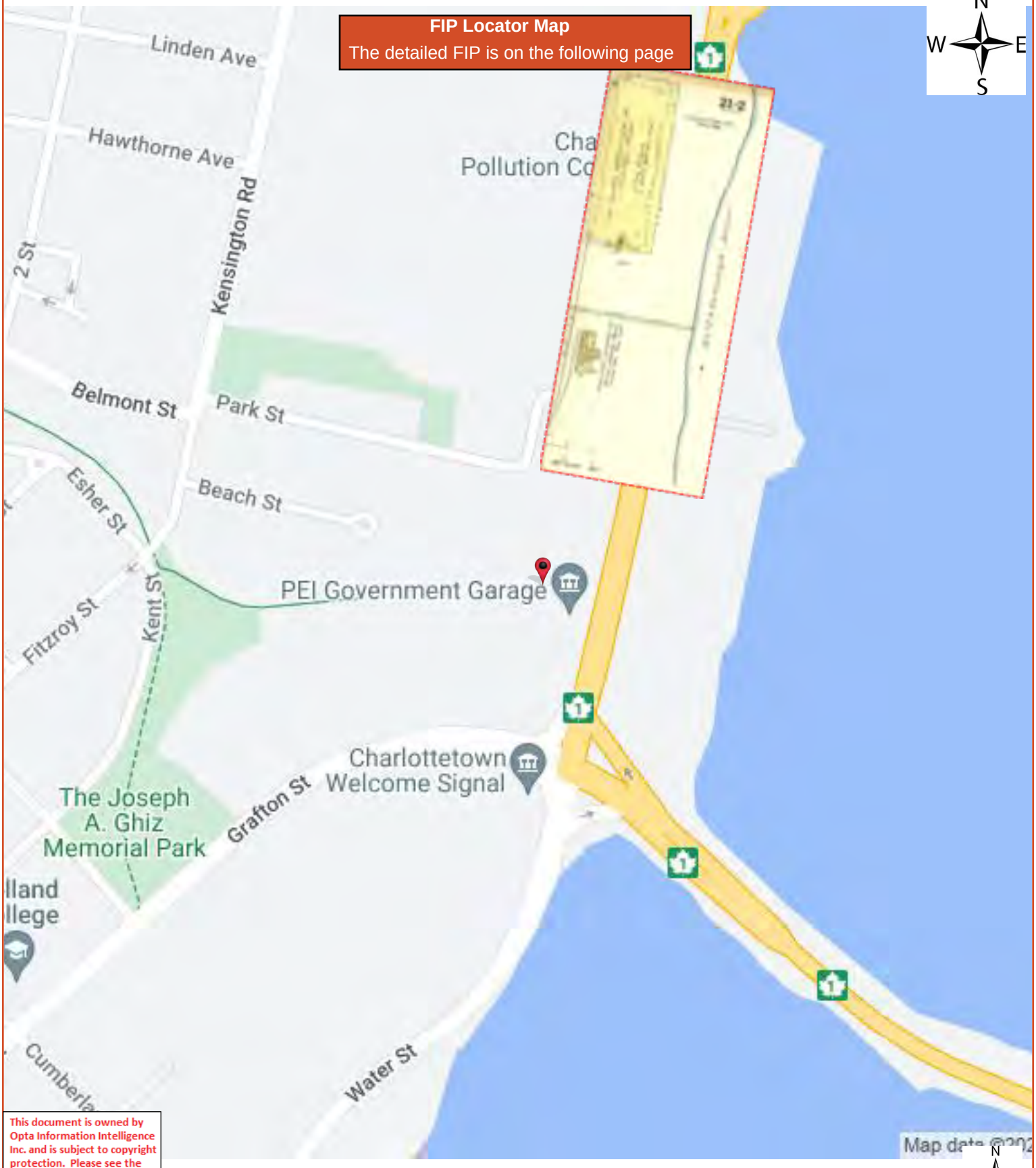
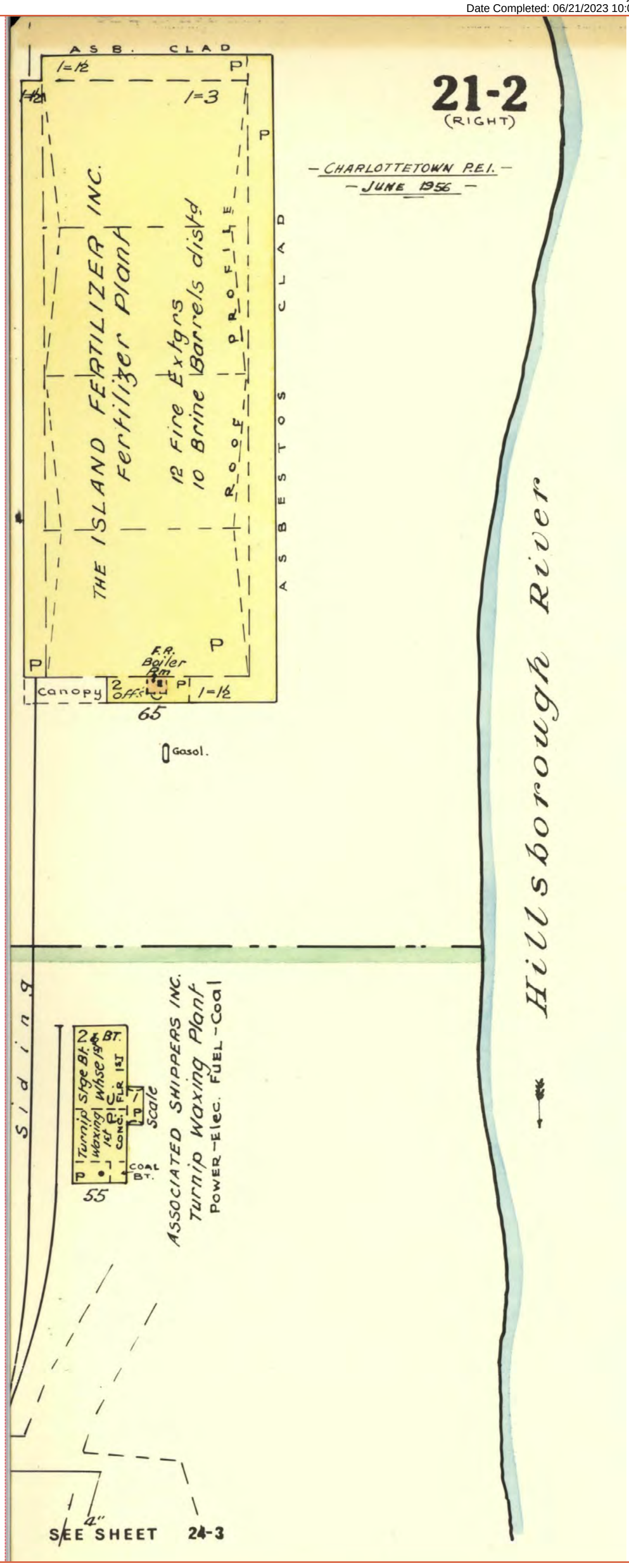


ENVIROSCAN Report

1956 Volume: Charlottetown Firemap: 21-2
Charlettetown Plan: 40 (1956)
Sheet: 21-2 (1956)

Requested by:
Vlad Trajkovic
Date Completed: 06/21/2023 10:09:24



ENVIROSCAN Report

1956 Volume: Charlottetown Firemap: 24-1
Charlettetown Plan: 40 (1956)
Sheet: 24-1 (1956)

Requested by:
Vlad Trajkovic
Date Completed: 06/21/2023 10:09:24

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OPTA INFORMATION INTELLIGENCE

FIP Locator Map
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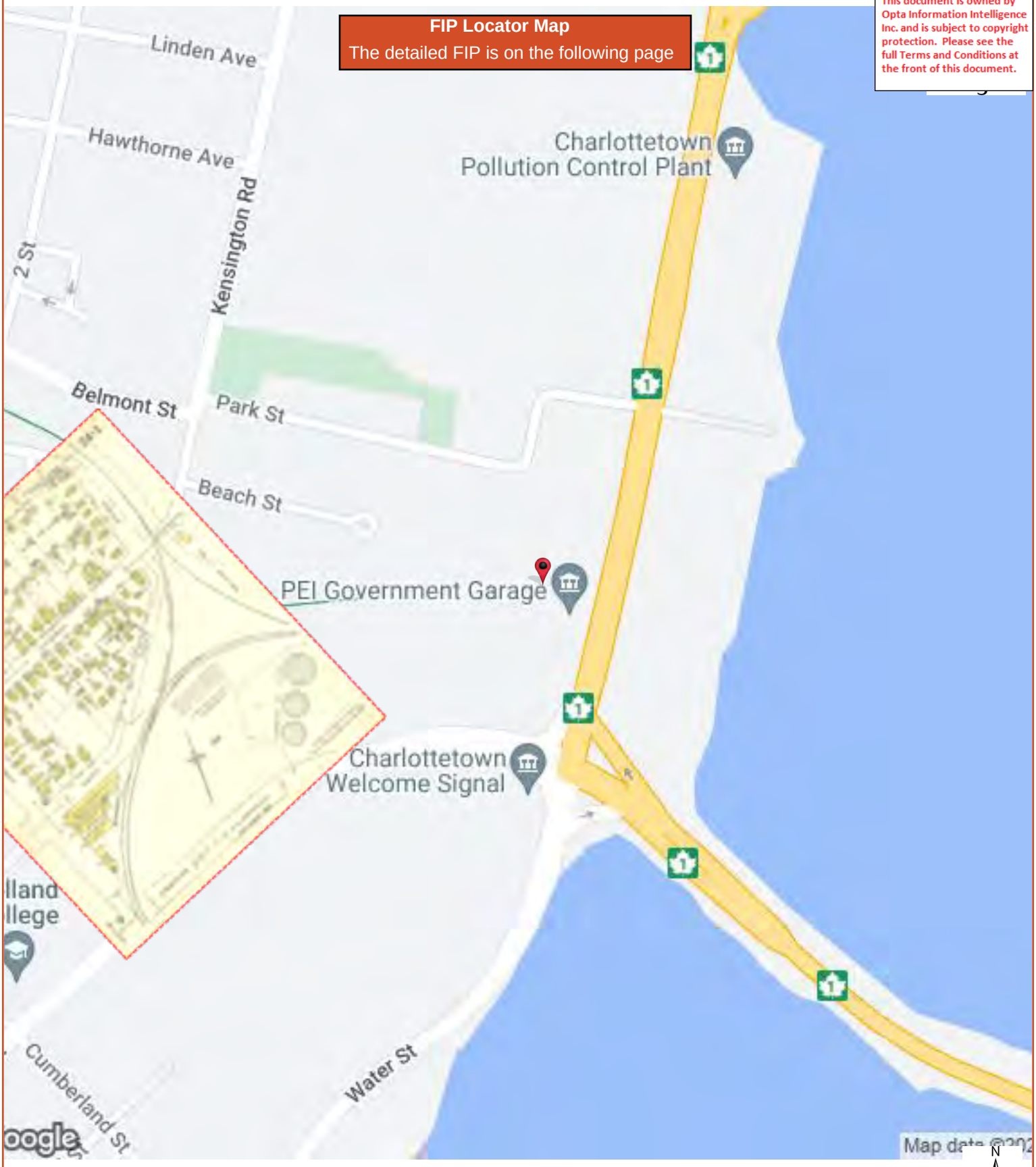
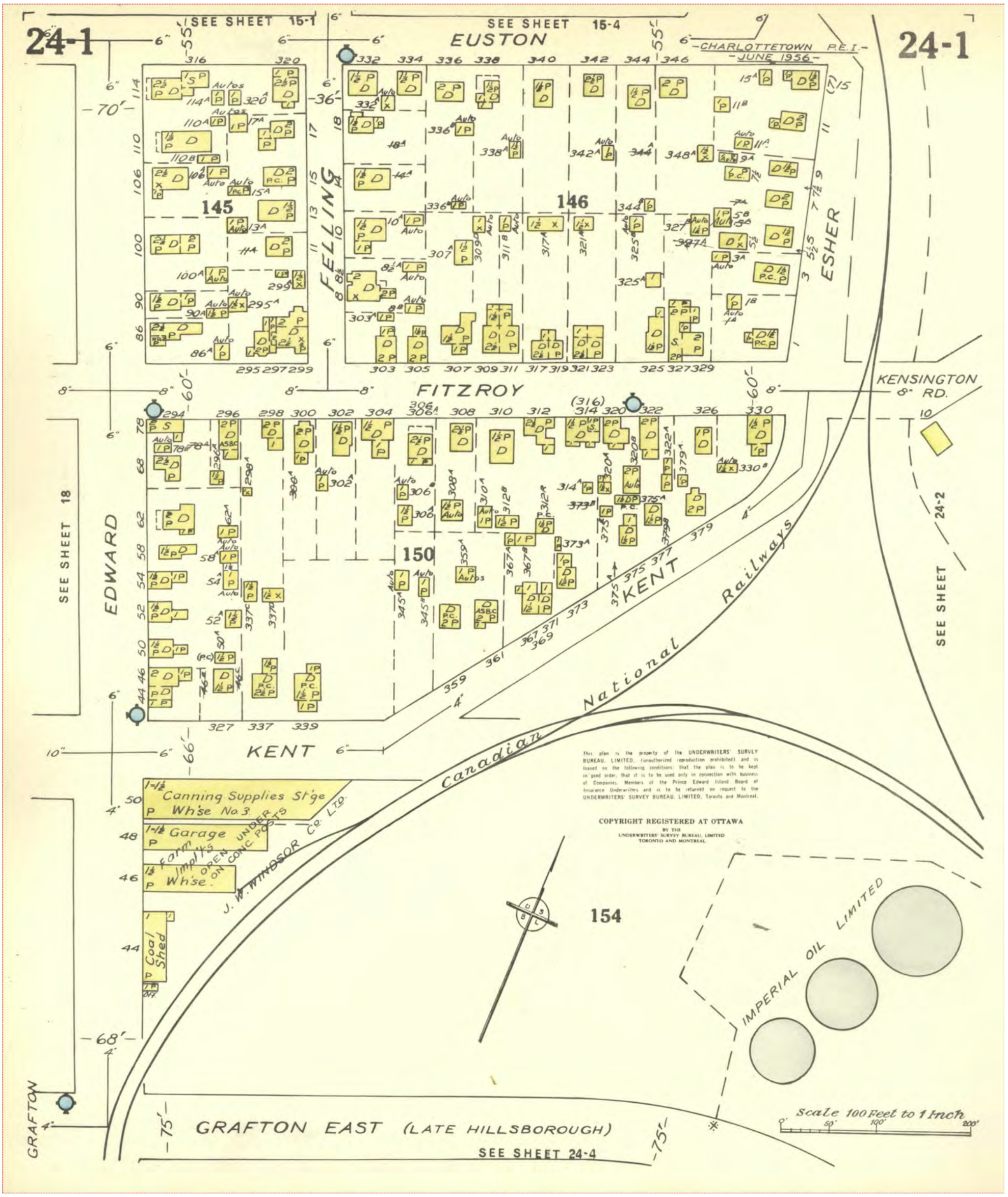


ENVIROSCAN Report

1956 Volume: Charlottetown Firemap: 24-1
Charlettetown Plan: 40 (1956)
Sheet: 24-1 (1956)

Requested by:
Vlad Trajkovic
Date Completed: 06/21/2023 10:09:24

OPTA INFORMATION INTELLIGENCE



ENVIROSCAN Report

1956 Volume: Charlottetown Firemap: 24-2
Charlettetown Plan: 40 (1956)
Sheet: 24-2 (1956)

Requested by:
Vlad Trajkovic
Date Completed: 06/21/2023 10:09:24

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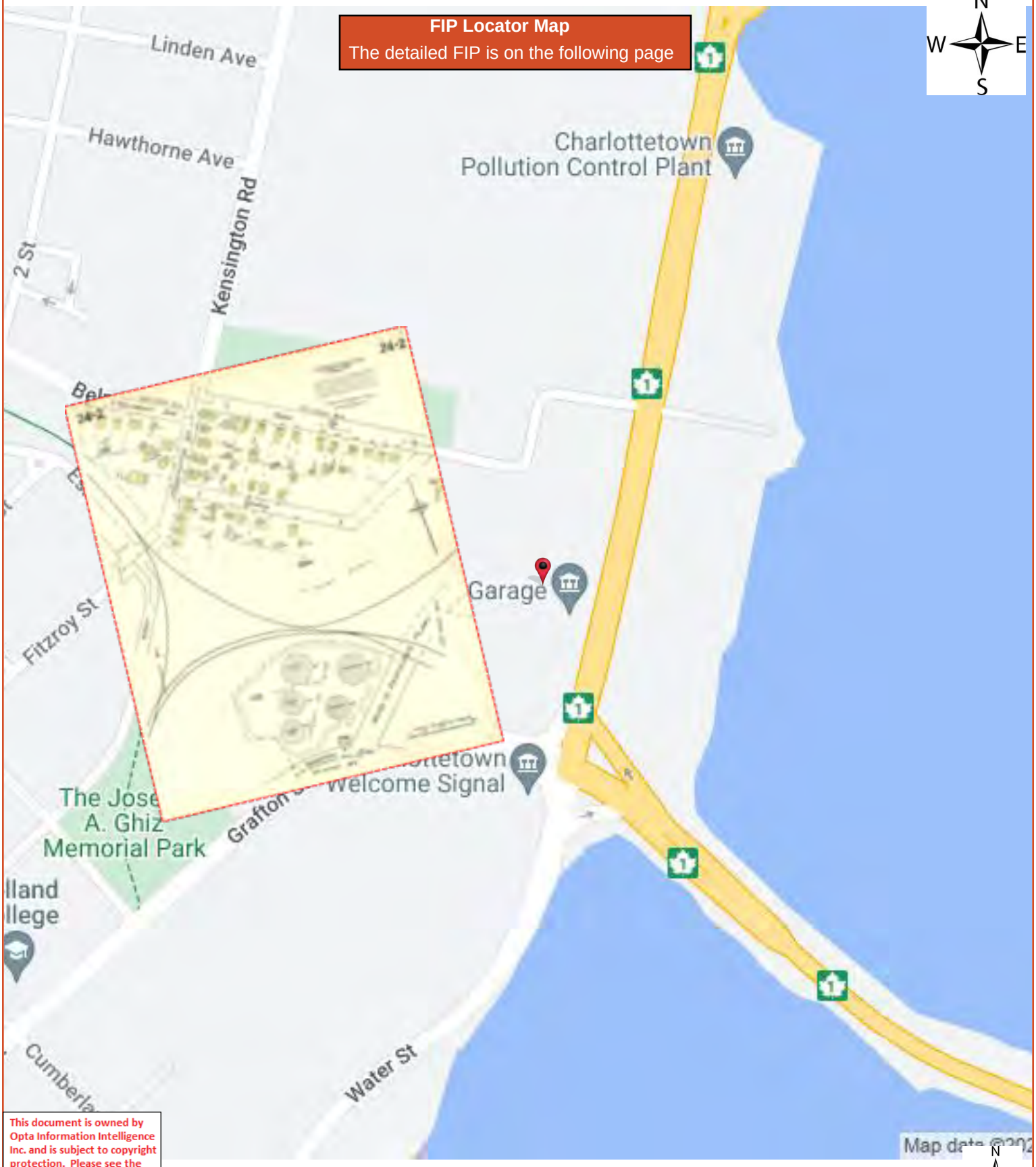
OPTA INFORMATION INTELLIGENCE

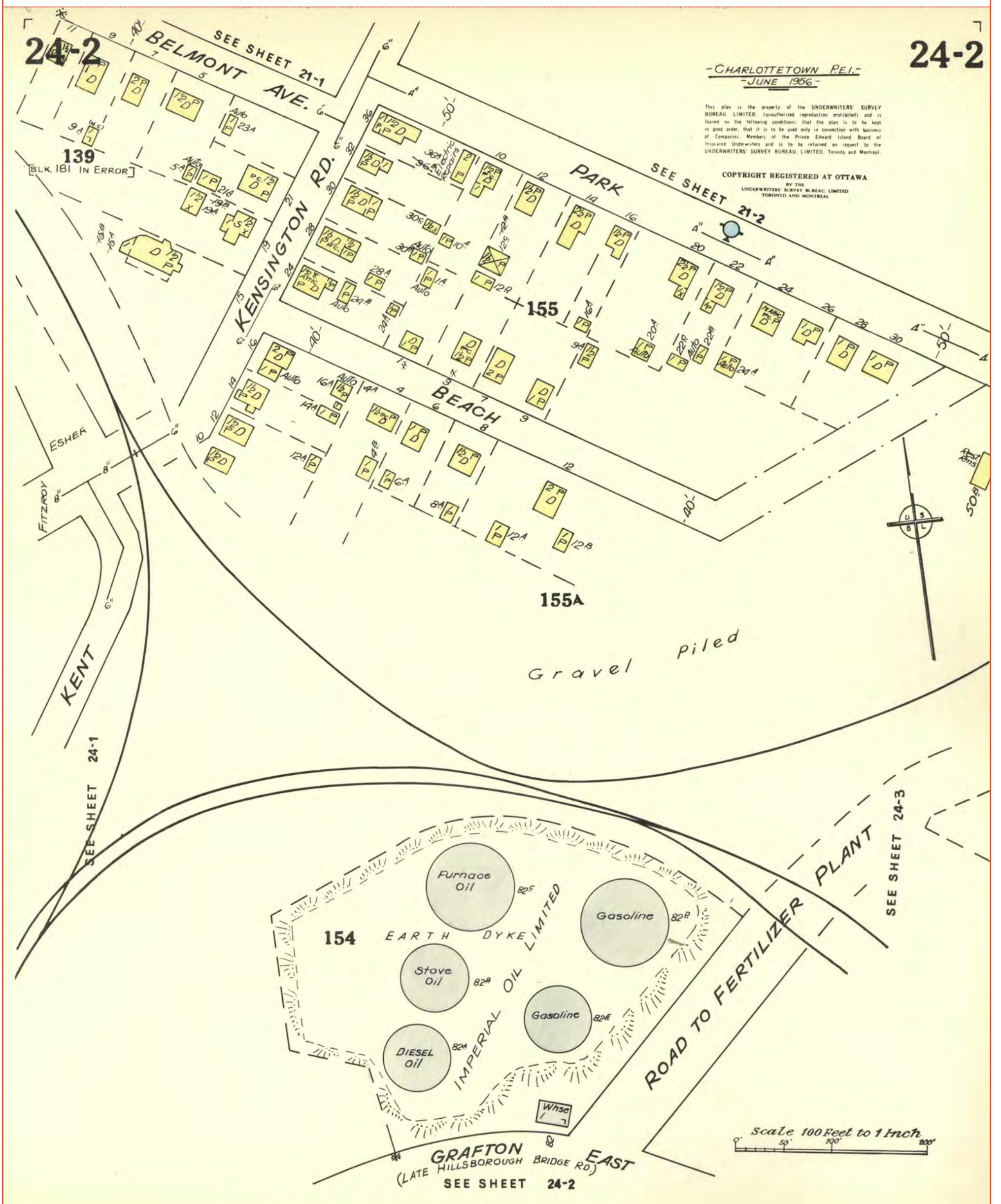
FIP Locator Map
The detailed FIP is on the following page



ENVIROSCAN Report

1956 Volume: Charlottetown Firemap: 24-2
Charlettetown Plan: 40 (1956)
Sheet: 24-2 (1956)

Requested by:
Vlad Trajkovic
Date Completed: 06/21/2023 10:09:24



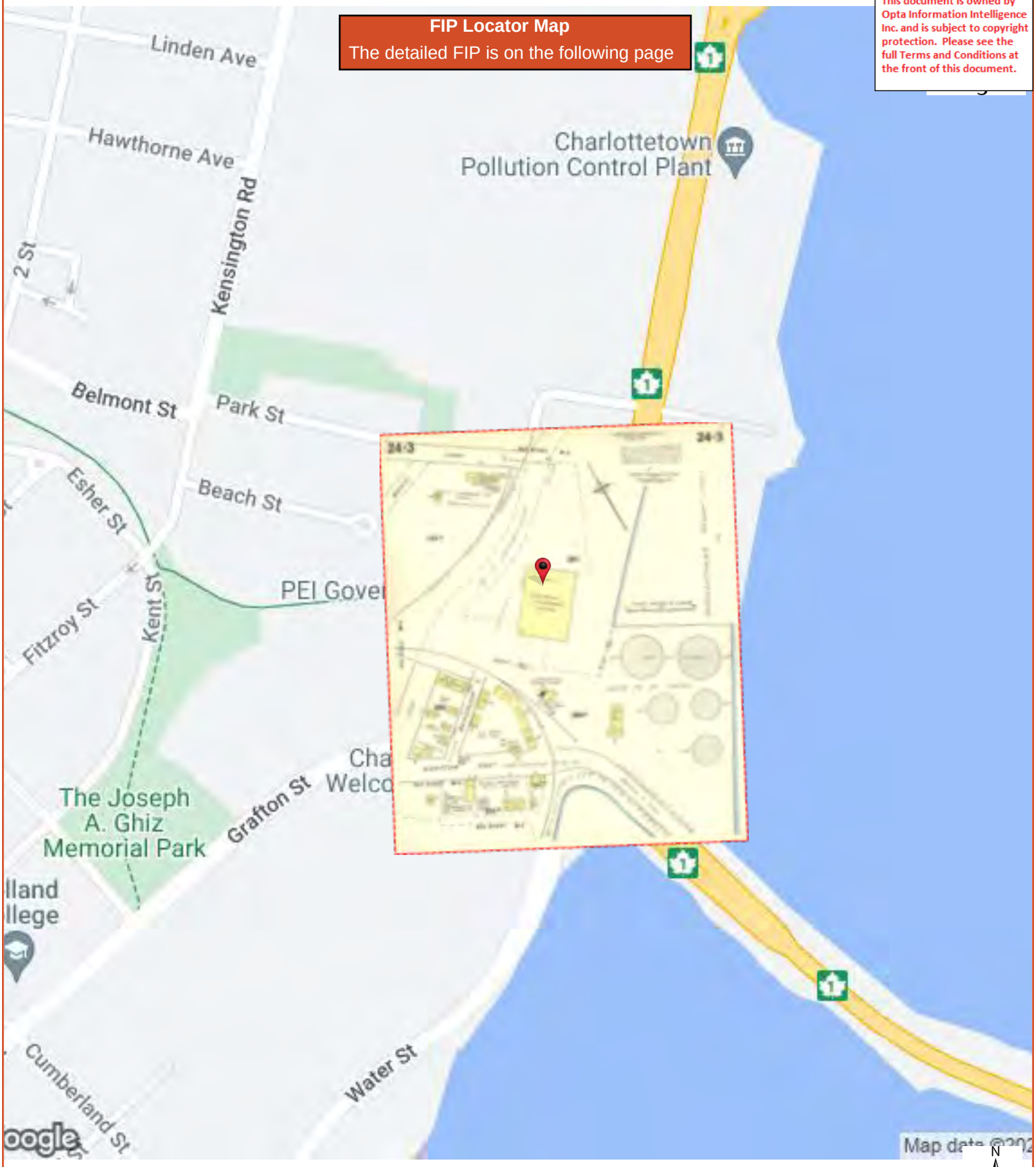
ENVIROSCAN Report

1956 Volume: Charlottetown Firemap: 24-3
Charlettetown Plan: 40 (1956)
Sheet: 24-3 (1956)

Requested by:
Vlad Trajkovic
Date Completed: 06/21/2023 10:09:24

enviroscan
OPTA INFORMATION INTELLIGENCE

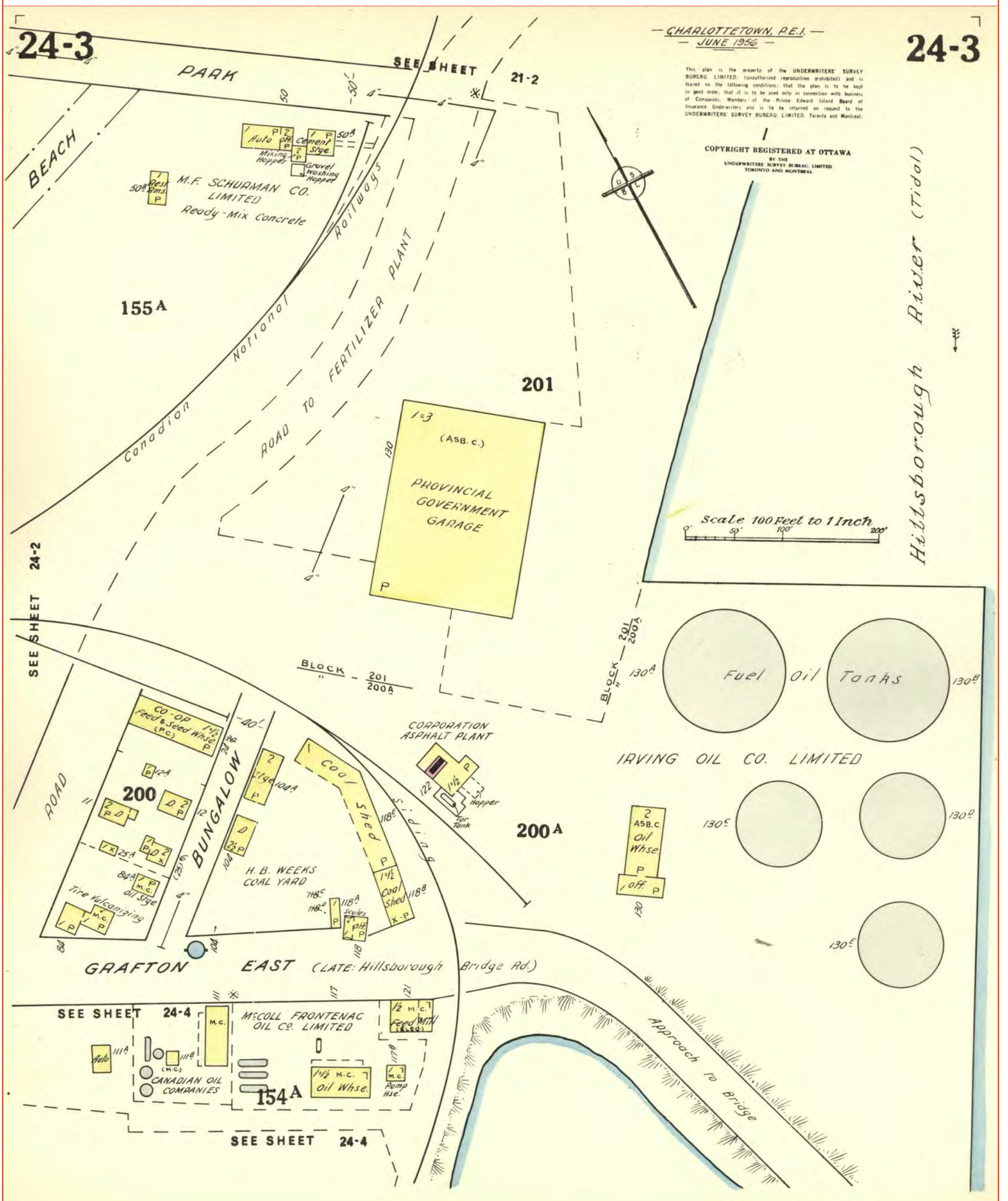
FIP Locator Map
The detailed FIP is on the following page



ENVIROSCAN Report

1956 Volume: Charlottetown Firemap: 24-3
Charlettetown Plan: 40 (1956)
Sheet: 24-3 (1956)

Requested by:
Vlad Trajkovic
Date Completed: 06/21/2023 10:09:24



Project Name: Phase II ESA
Former Highway Depot

Project #: PE23251

ENVIROSCAN Report

1956 Volume: Charlottetown Firemap: 24-4
Charlettetown Plan: 40 (1956)
Sheet: 24-4 (1956)

Requested by:
Vlad Trajkovic
Date Completed: 06/21/2023 10:09:24

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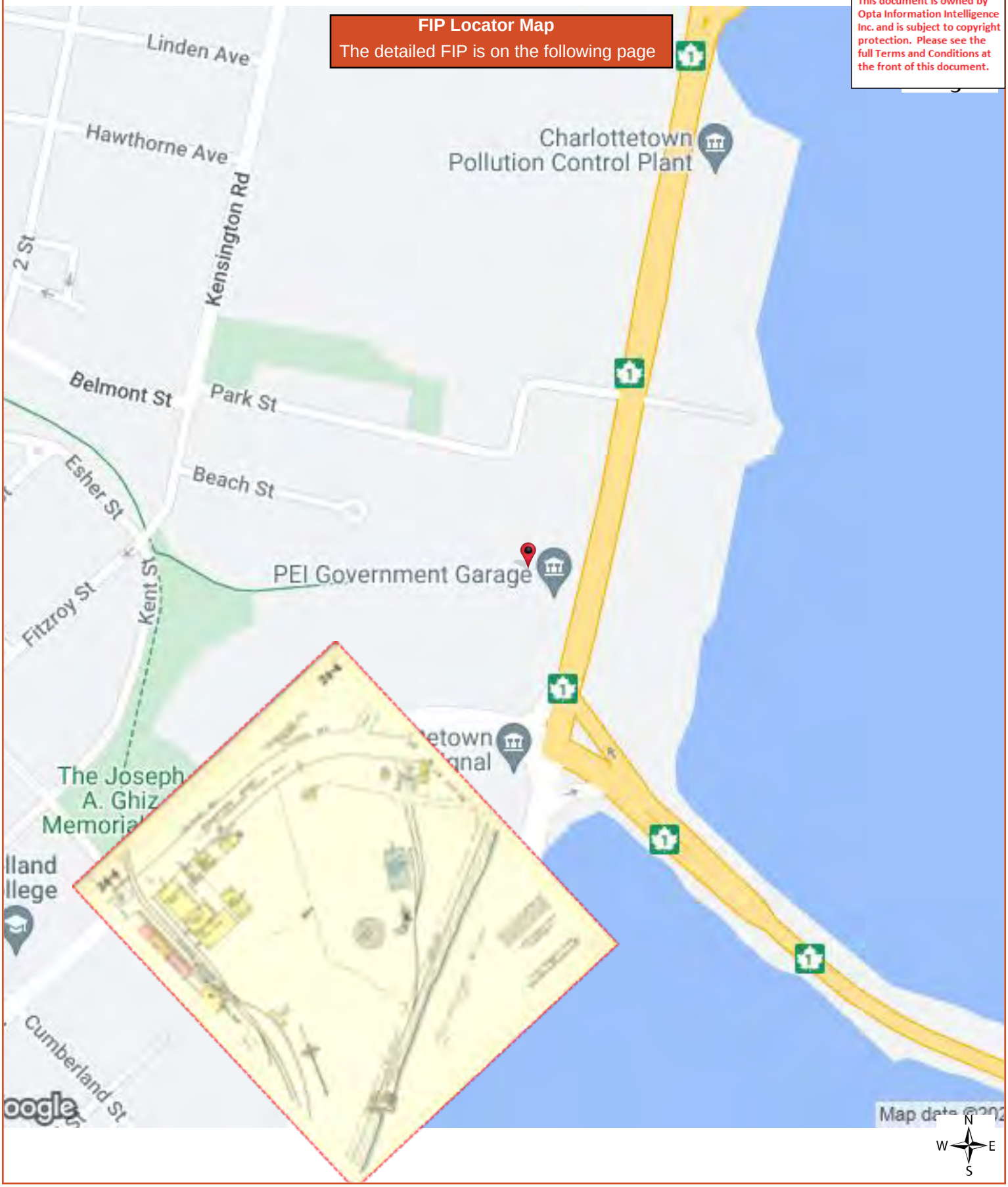
OPTA INFORMATION INTELLIGENCE

FIP Locator Map
The detailed FIP is on the following page



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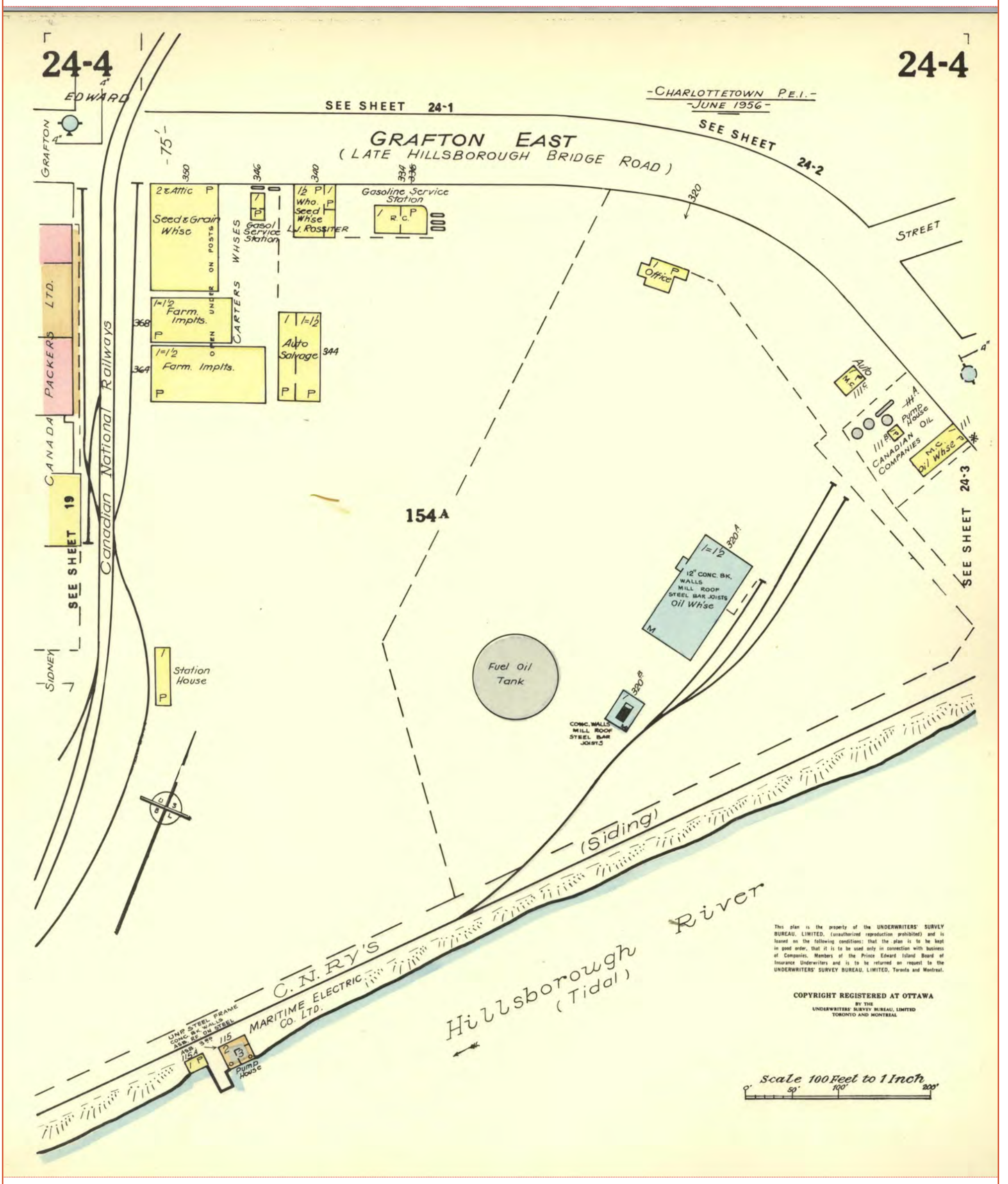
Charlettetown Plan: 40 (1956)
Sheet: 24-4 (1956)



ENVIROSCAN Report

1963 Volume: Charlottetown Firemap: 21-2
Charlettetown Plan: 42 (1956)
Sheet: 21-2 (1963)

Requested by:
Vlad Trajkovic
Date Completed: 06/21/2023 10:09:24

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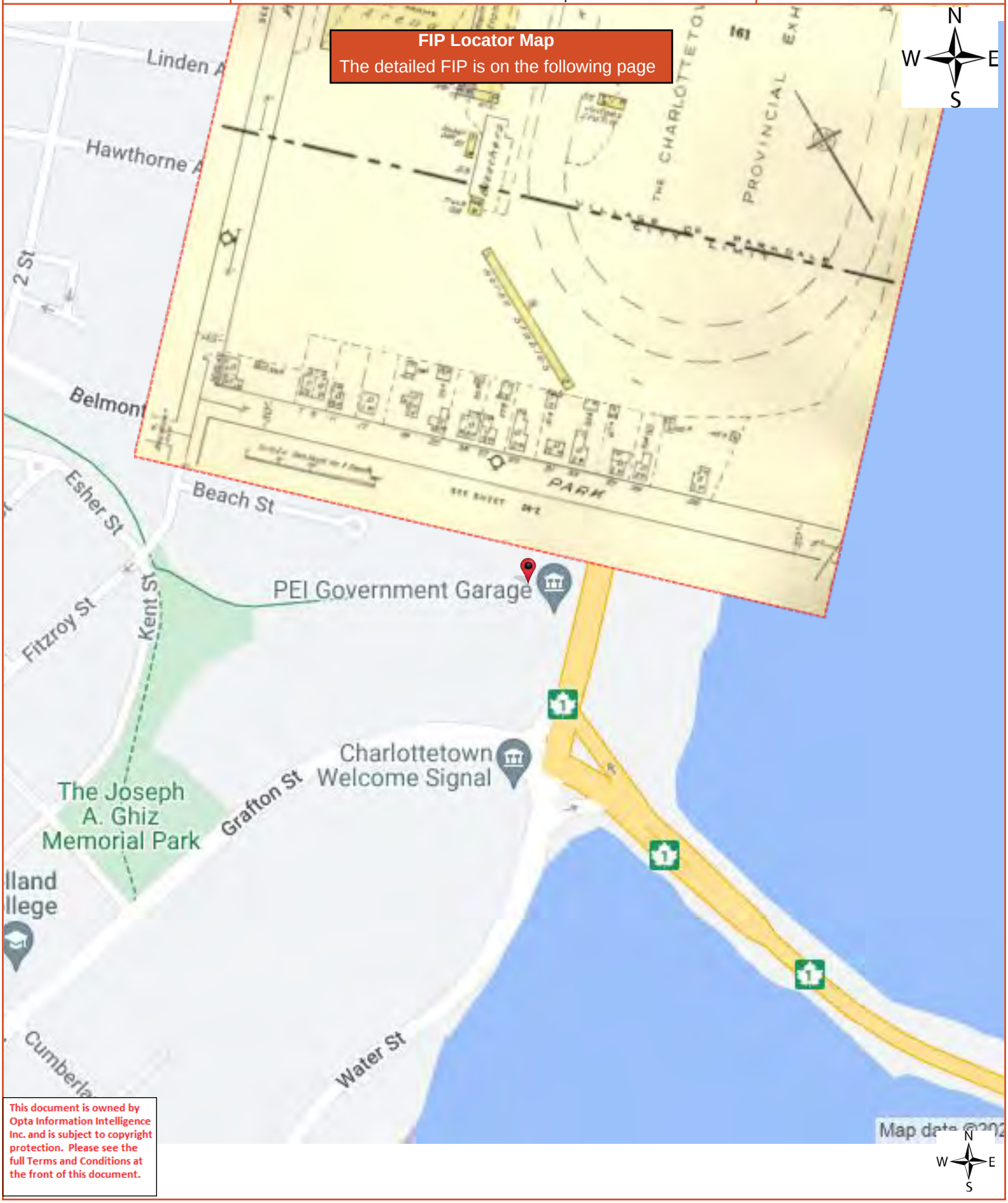
FIP Locator Map
The detailed FIP is on the following page



ENVIROSCAN Report

1963 Volume: Charlottetown Firemap: 21-2
Charlettetown Plan: 42 (1956)
Sheet: 21-2 (1963)

Requested by:
Vlad Trajkovic
Date Completed: 06/21/2023 10:09:24

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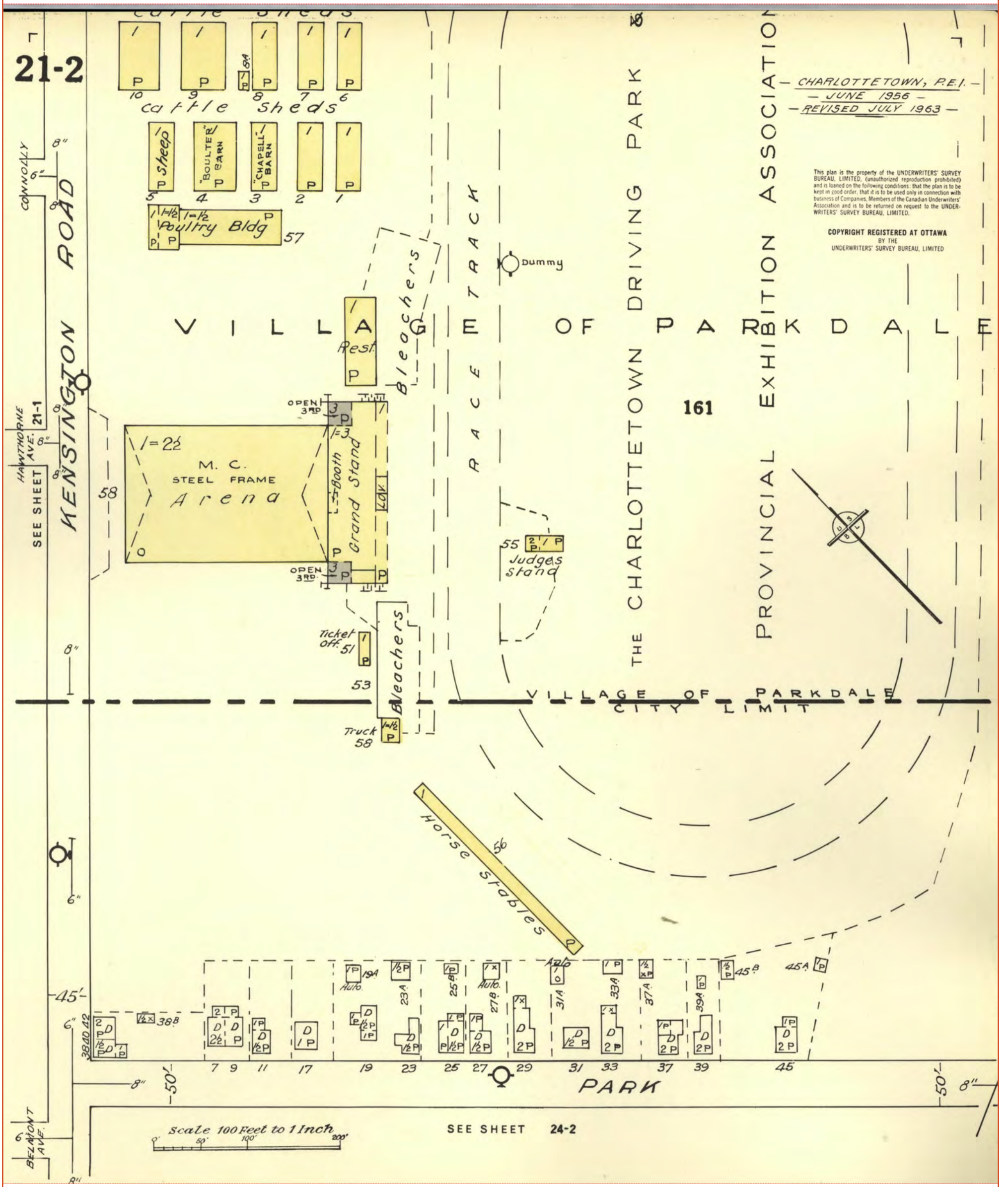
OPTA INFORMATION INTELLIGENCE



ENVIROSCAN Report

1963 Volume: Charlottetown Firemap: 21-2
Charlettetown Plan: 42 (1956)
Sheet: 21-2 (1963)

Requested by:
Vlad Trajkovic
Date Completed: 06/21/2023 10:09:24

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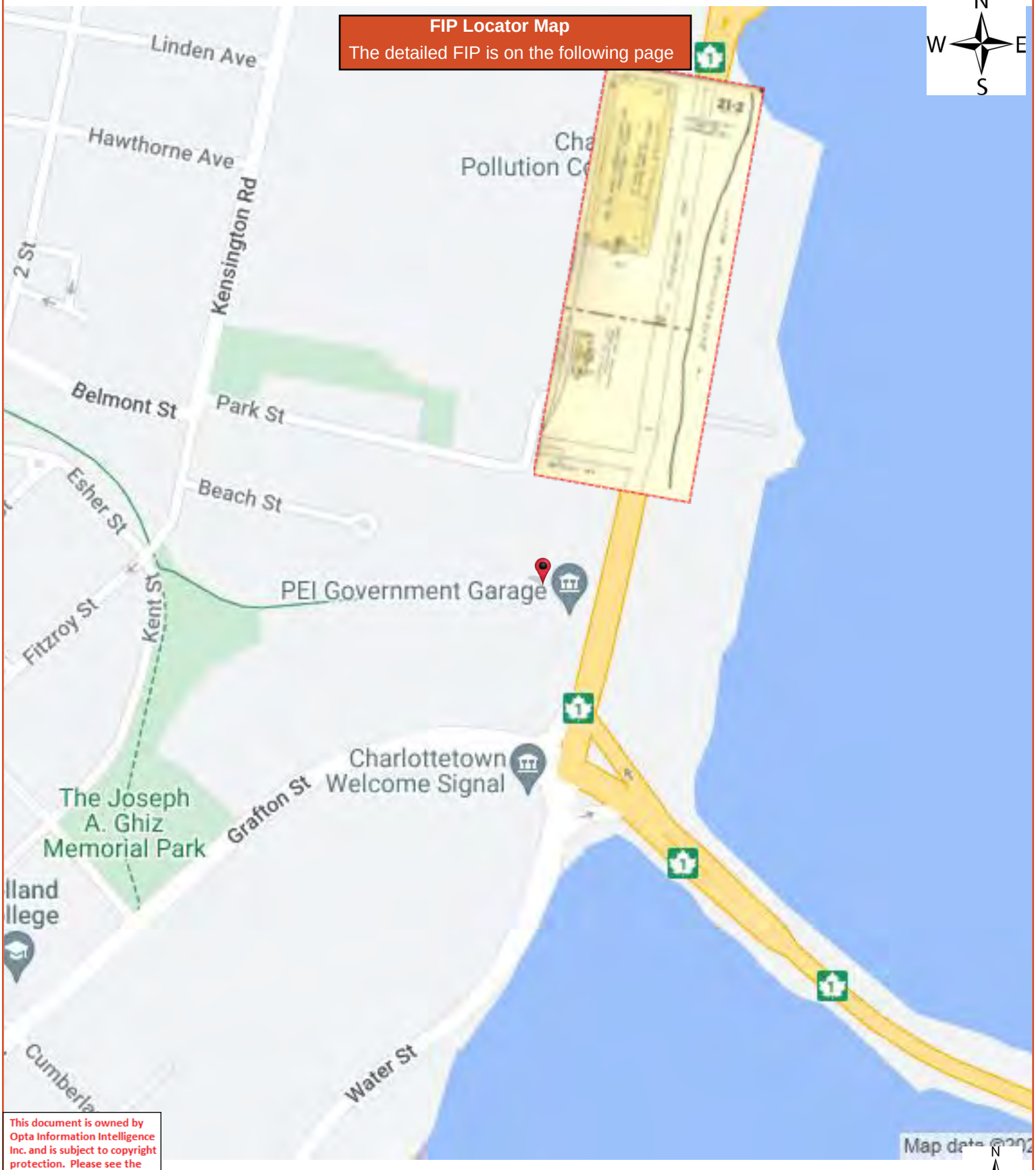
OPTA INFORMATION INTELLIGENCE

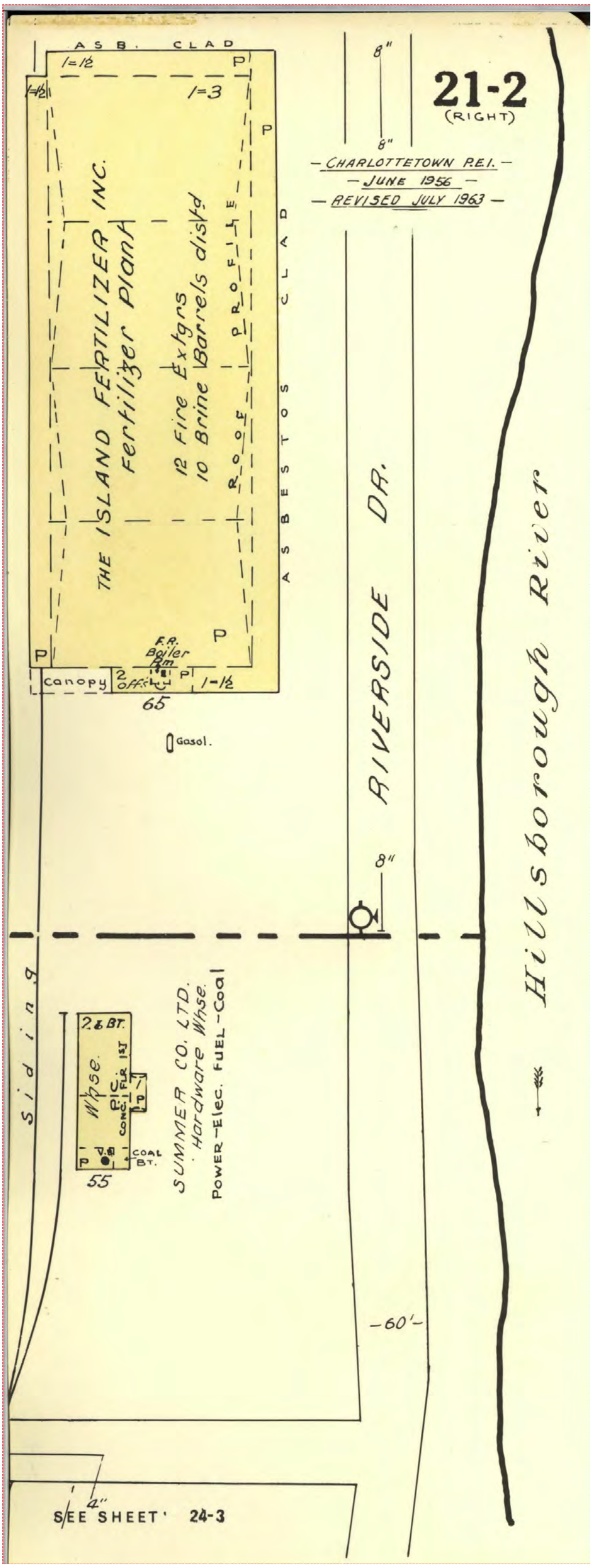
FIP Locator Map
The detailed FIP is on the following page



ENVIROSCAN Report

1963 Volume: Charlottetown Firemap: 21-2
Charlettetown Plan: 42 (1956)
Sheet: 21-2 (1963)

Requested by:
Vlad Trajkovic
Date Completed: 06/21/2023 10:09:24



ENVIROSCAN Report

1963 Volume: Charlottetown Firemap: 24-1
Charlettetown Plan: 42 (1956)
Sheet: 24-1 (1963)

Requested by:
Vlad Trajkovic
Date Completed: 06/21/2023 10:09:24

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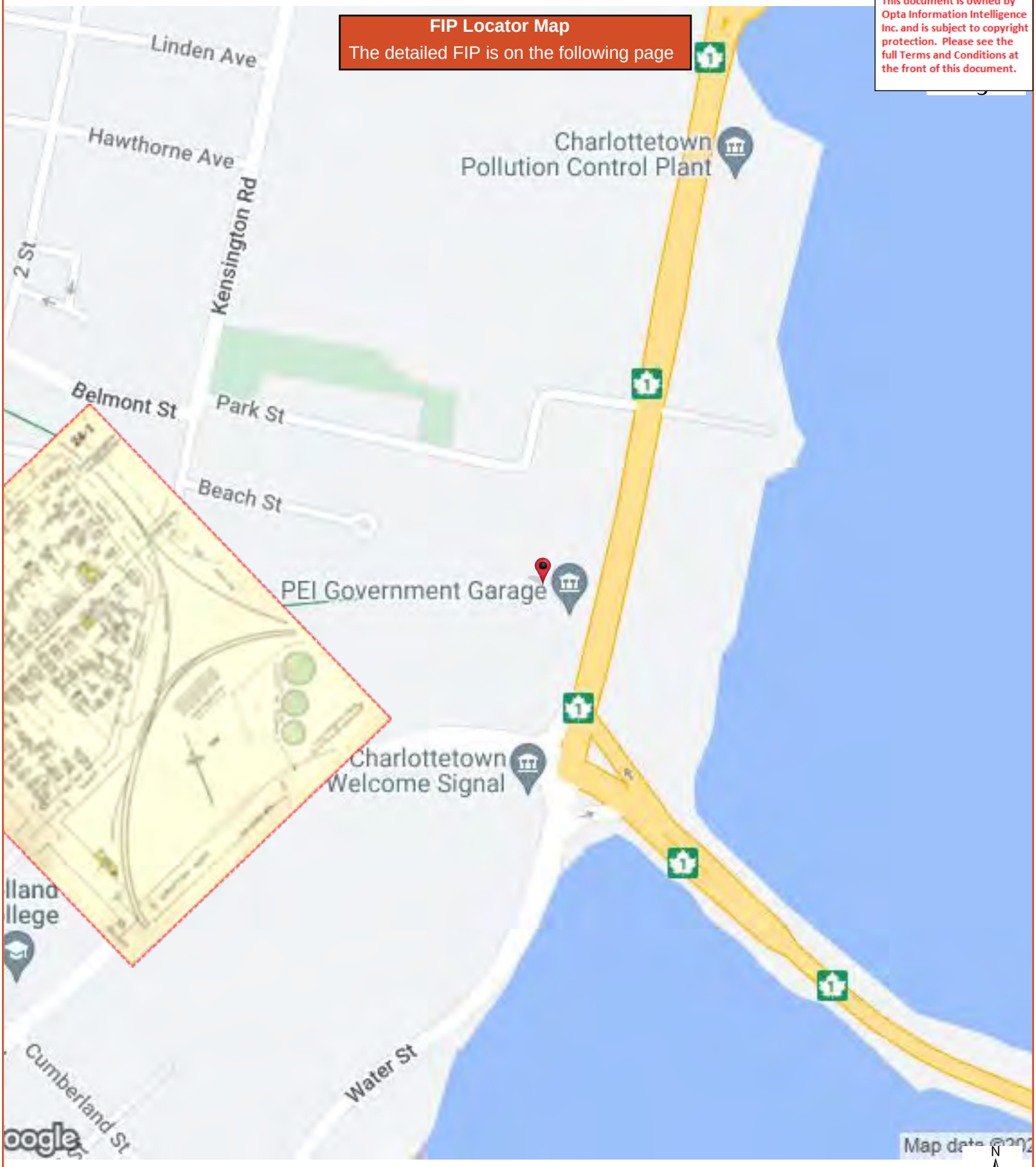
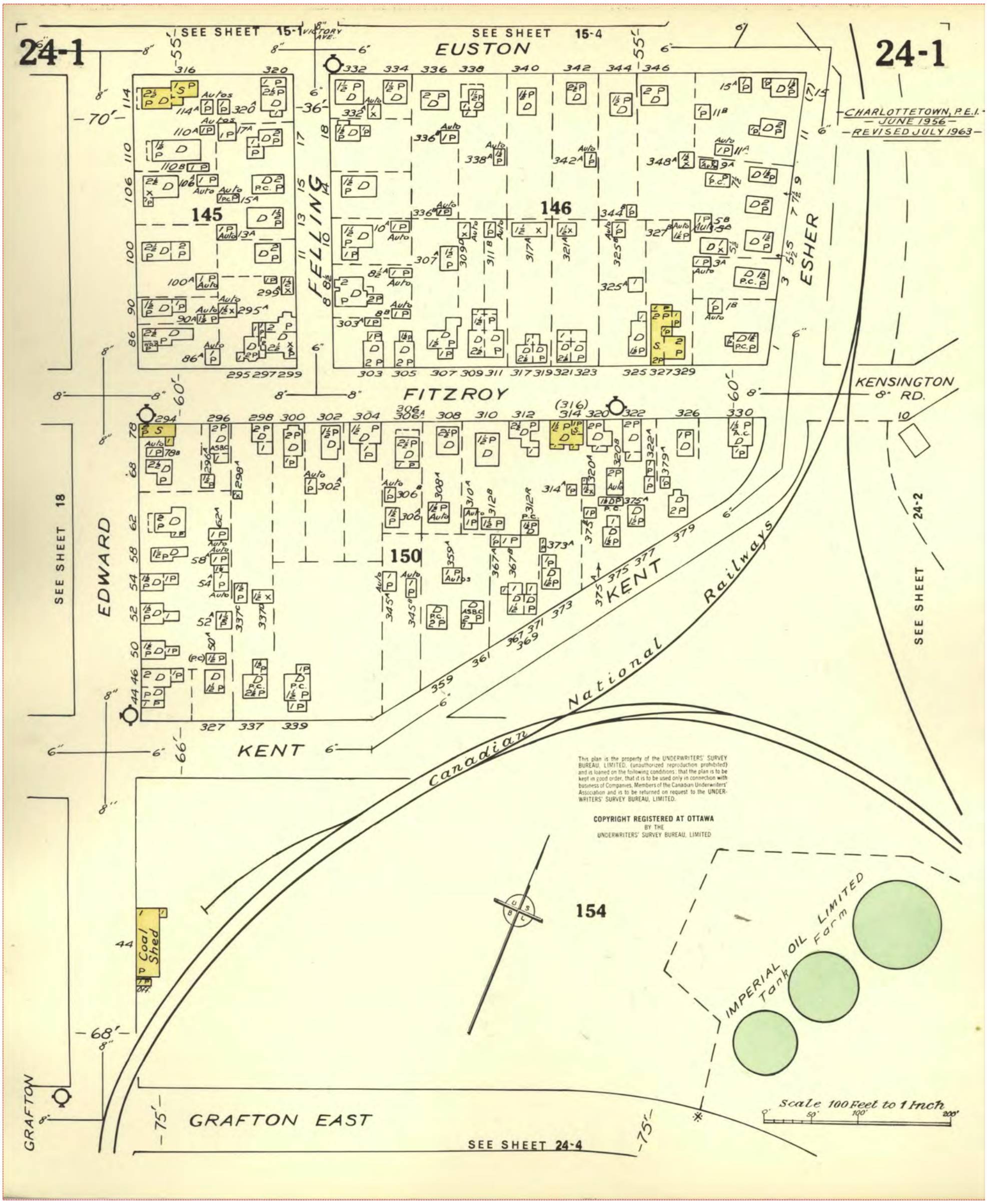
FIP Locator Map
The detailed FIP is on the following page



ENVIROSCAN Report

1963 Volume: Charlottetown Firemap: 24-1
Charlettetown Plan: 42 (1956)
Sheet: 24-1 (1963)

Requested by:
Vlad Trajkovic
Date Completed: 06/21/2023 10:09:24



ENVIROSCAN Report

1963 Volume: Charlottetown Firemap: 24-2
Charlettetown Plan: 42 (1956)
Sheet: 24-2 (1963)

Requested by:
Vlad Trajkovic
Date Completed: 06/21/2023 10:09:24

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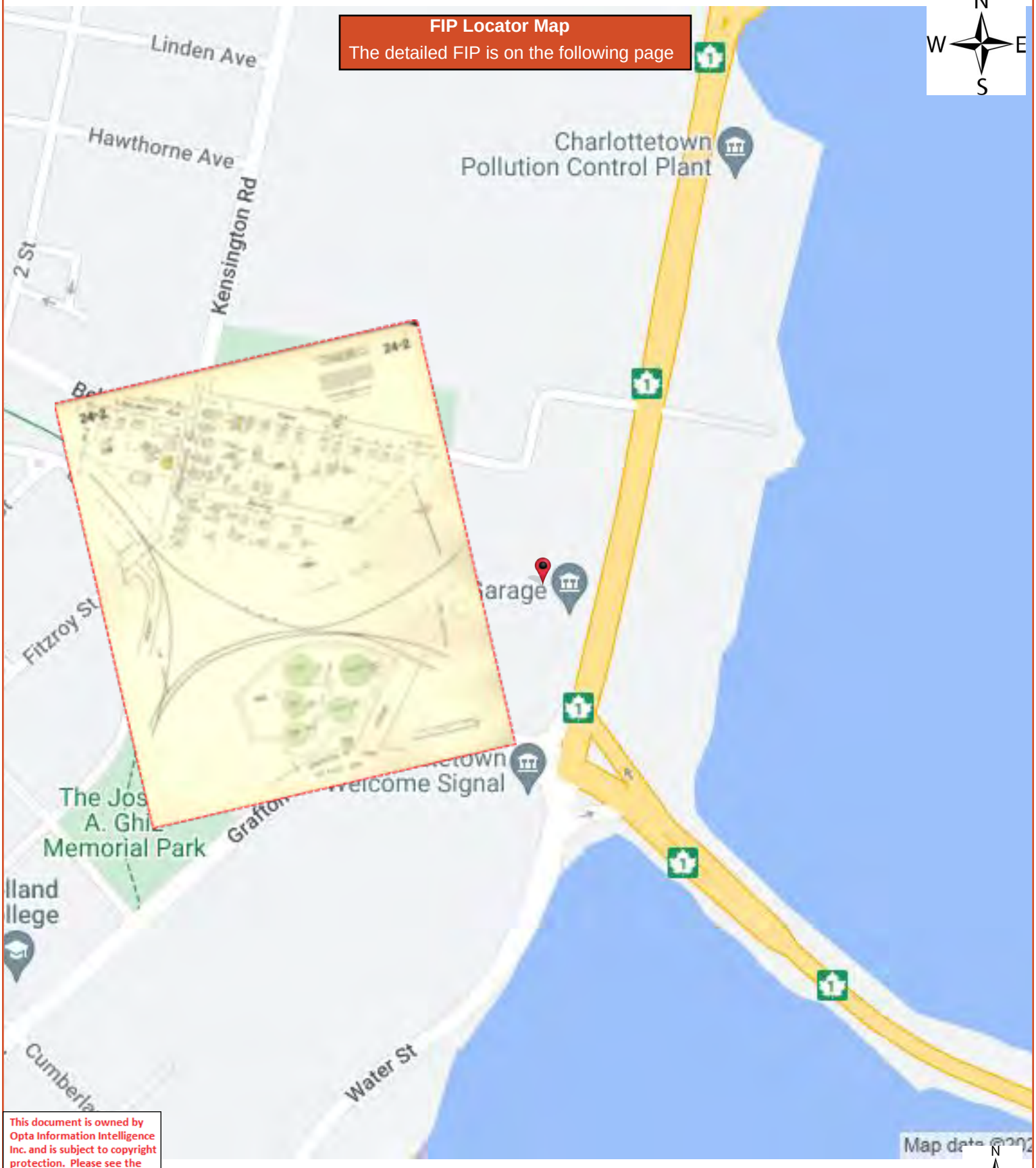
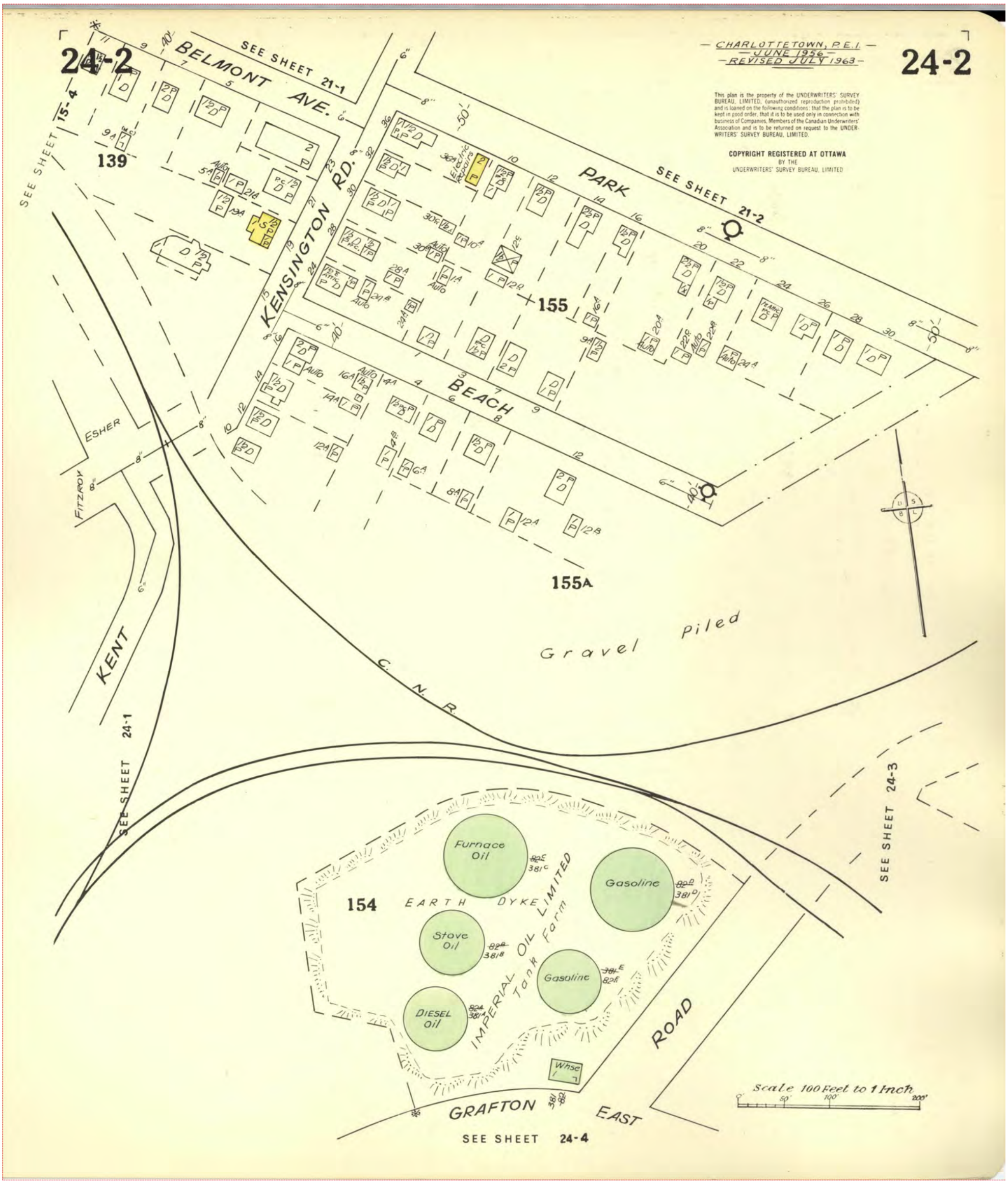


ENVIROSCAN Report

1963 Volume: Charlottetown Firemap: 24-2
Charlettetown Plan: 42 (1956)
Sheet: 24-2 (1963)

Requested by:
Vlad Trajkovic
Date Completed: 06/21/2023 10:09:24



ENVIROSCAN Report

1963 Volume: Charlottetown Firemap: 24-3
Charlettetown Plan: 42 (1956)
Sheet: 24-3 (1963)

Requested by:
Vlad Trajkovic
Date Completed: 06/21/2023 10:09:24

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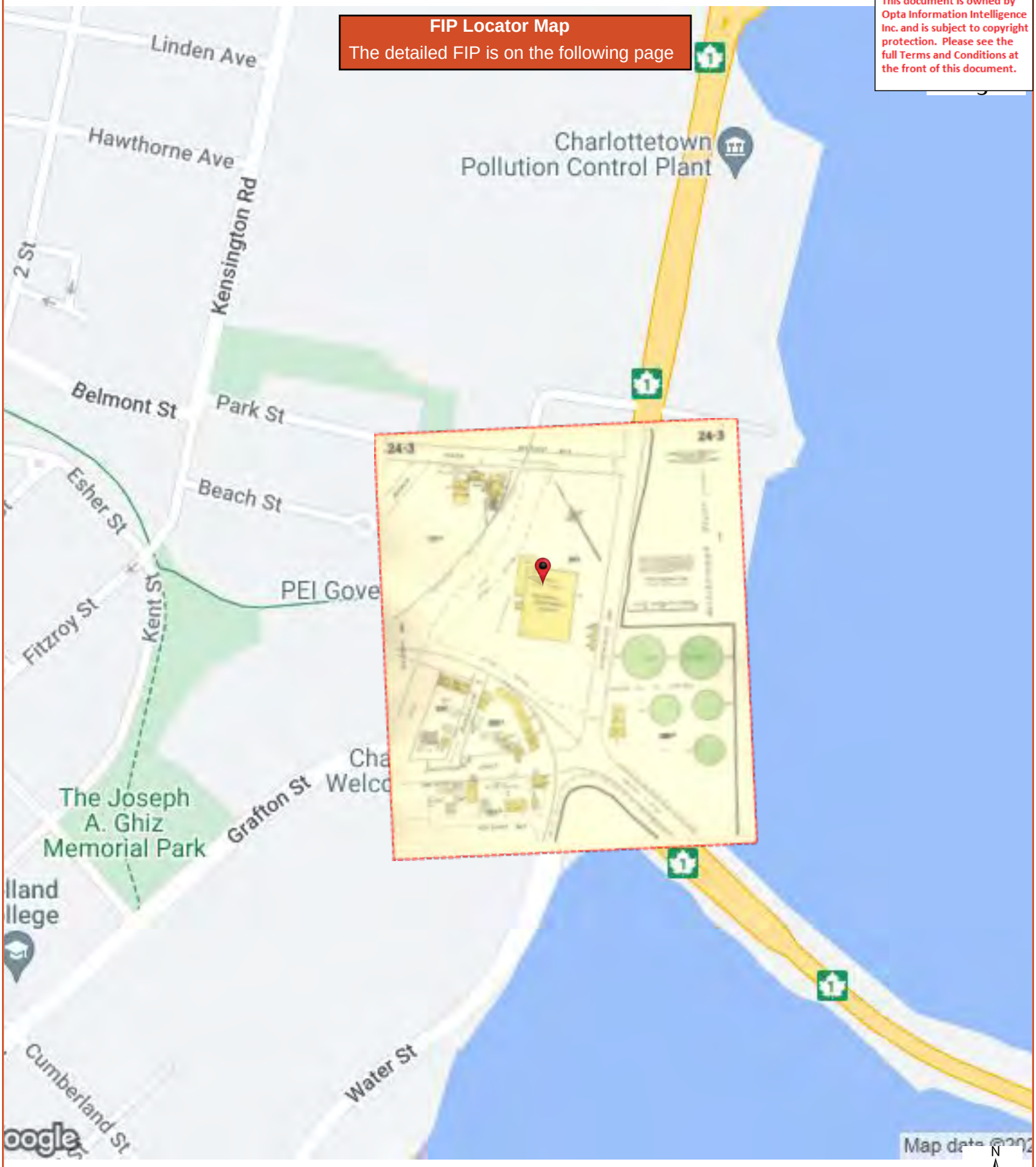
OPTA INFORMATION INTELLIGENCE

FIP Locator Map
The detailed FIP is on the following page

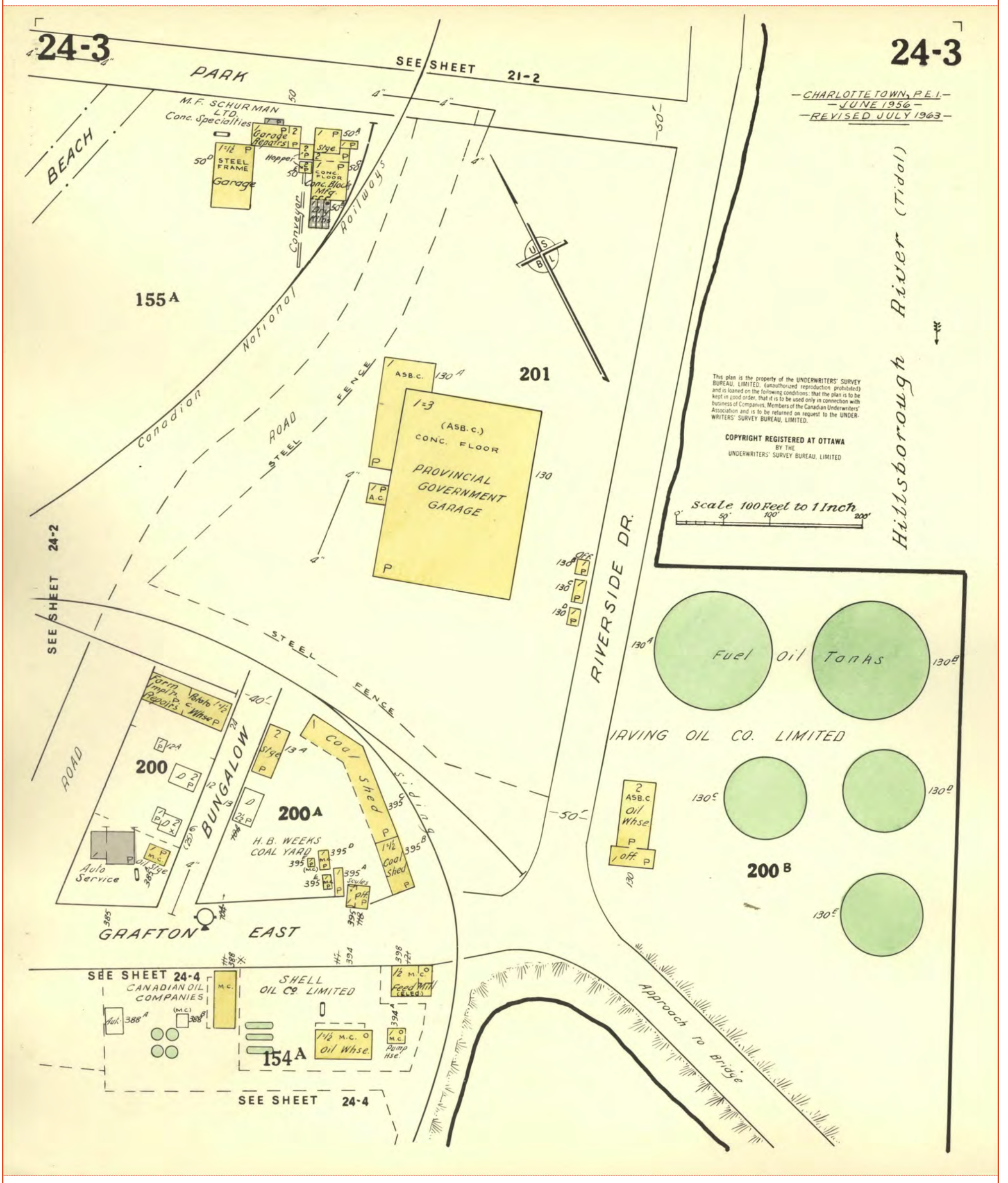


ENVIROSCAN Report

1963 Volume: Charlottetown Firemap: 24-3
Charlettetown Plan: 42 (1956)
Sheet: 24-3 (1963)

Requested by:
Vlad Trajkovic
Date Completed: 06/21/2023 10:09:24

OPTA INFORMATION INTELLIGENCE



ENVIROSCAN Report

1963 Volume: Charlottetown Firemap: 24-4
Charlettetown Plan: 42 (1956)
Sheet: 24-4 (1963)

Requested by:
Vlad Trajkovic
Date Completed: 06/21/2023 10:09:24

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OPTA INFORMATION INTELLIGENCE

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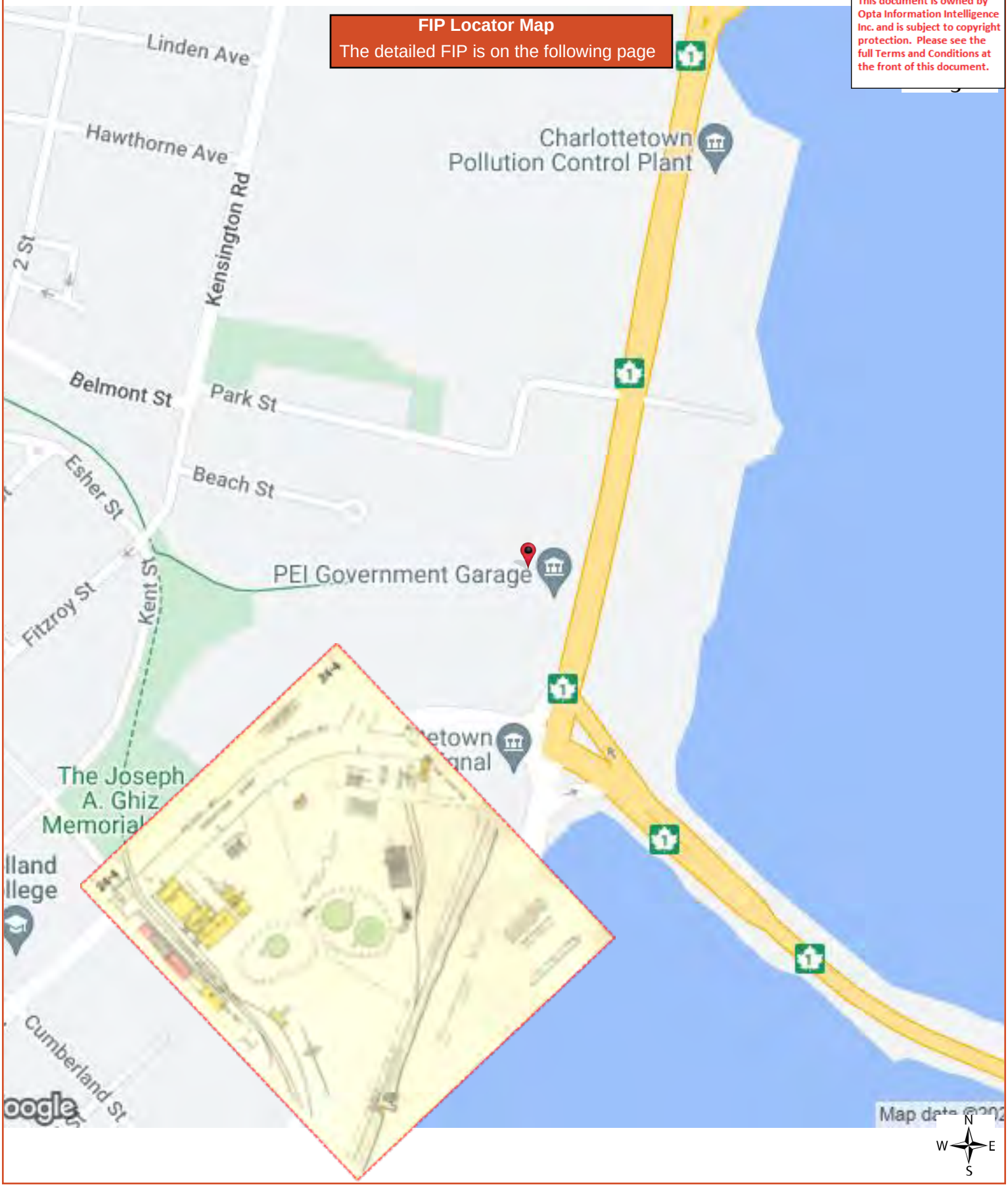

ENVIROSCAN Report

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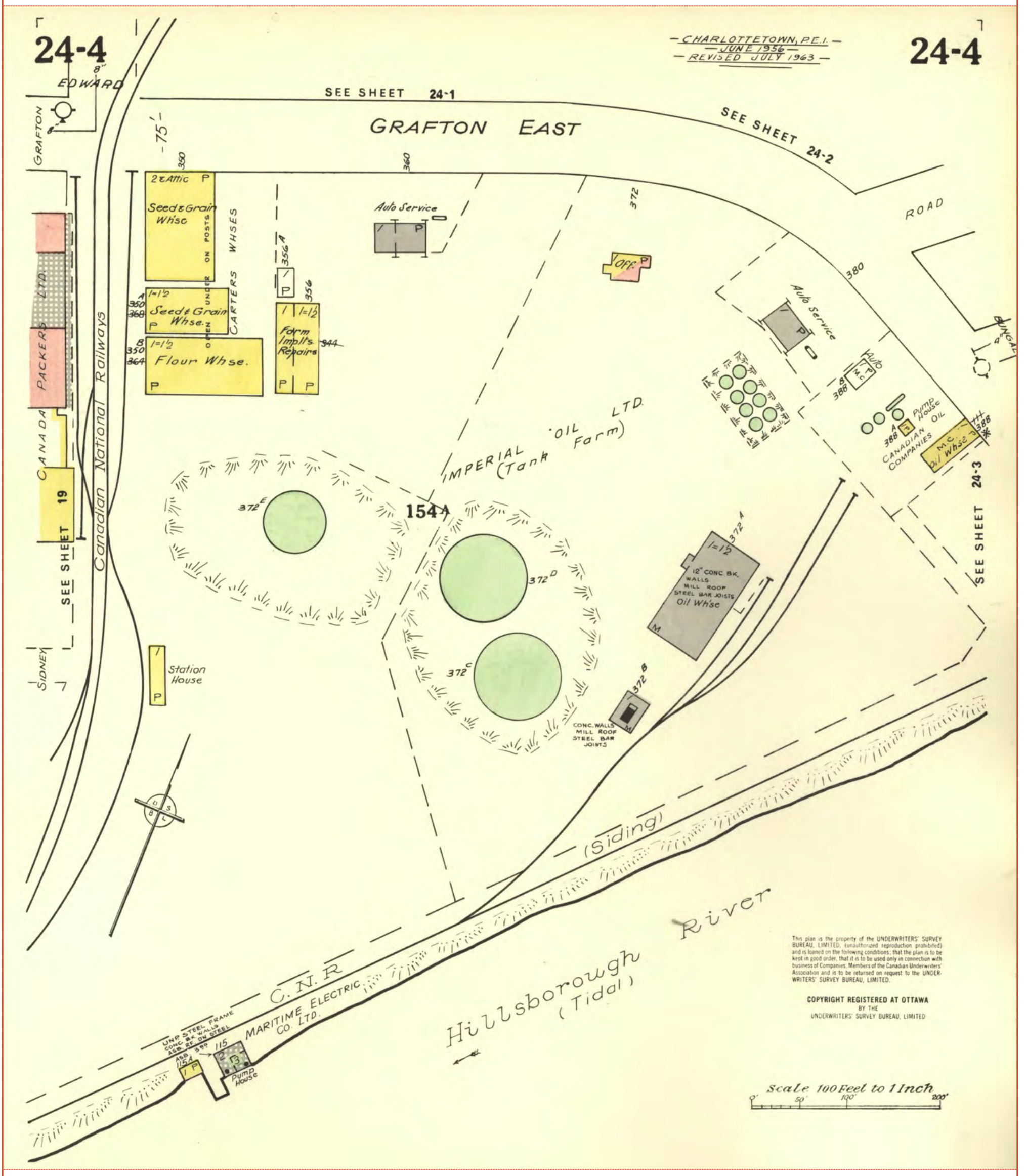
Charlettetown Plan: 42 (1956)
Sheet: 24-4 (1963)



A-16113-44

90401-31 LINE 13E / P.E.I. FORESTRY

084(DT) 120 N48 14 12.44 063 08 42.94 100/08/2518:24:14 ASL 2028 17500 4000 (P) EMR #7383187 152.184 PEI A&F PRINCE EDWARD ISLAND BY AIRBORNE SENSING

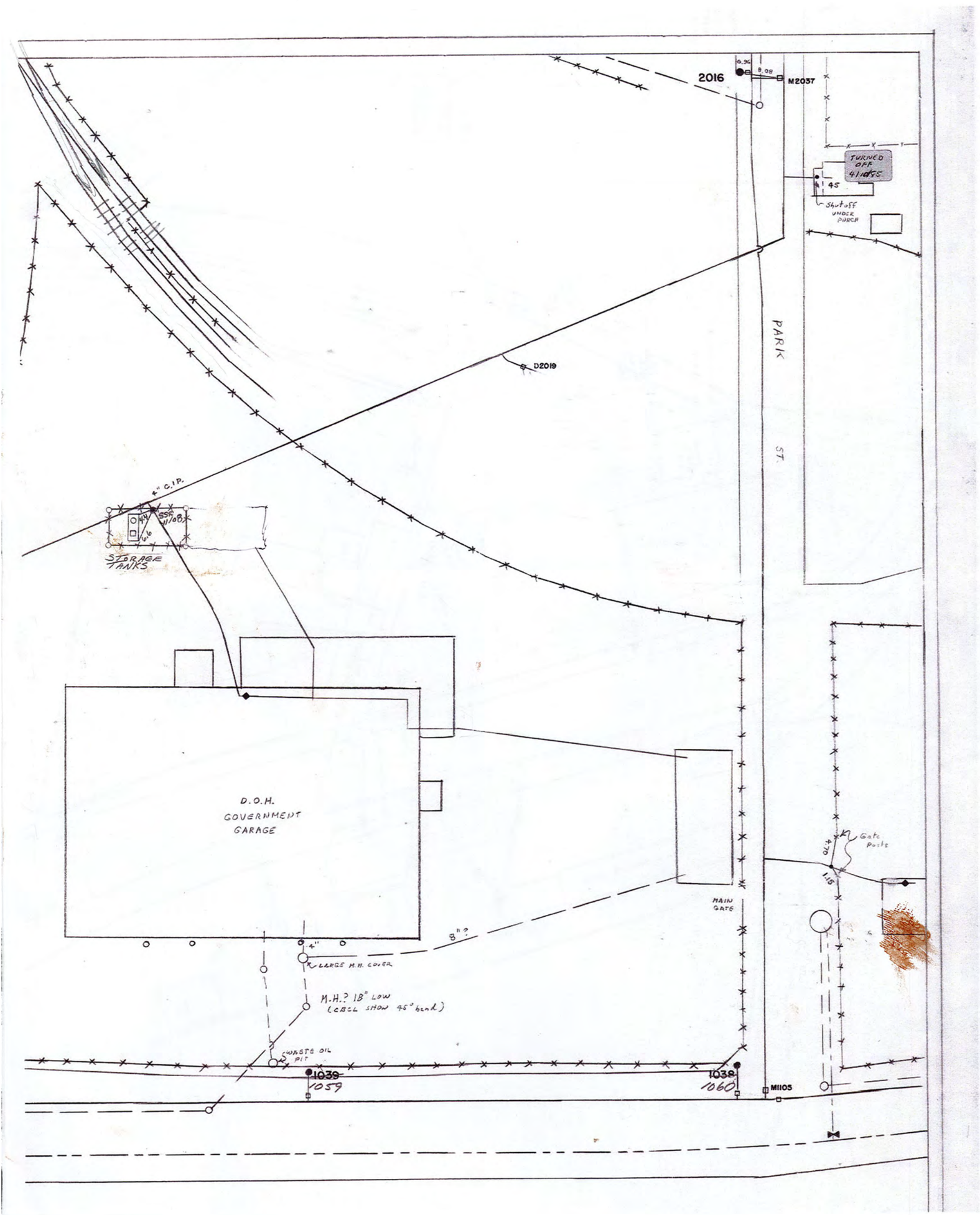
0 1 2 0

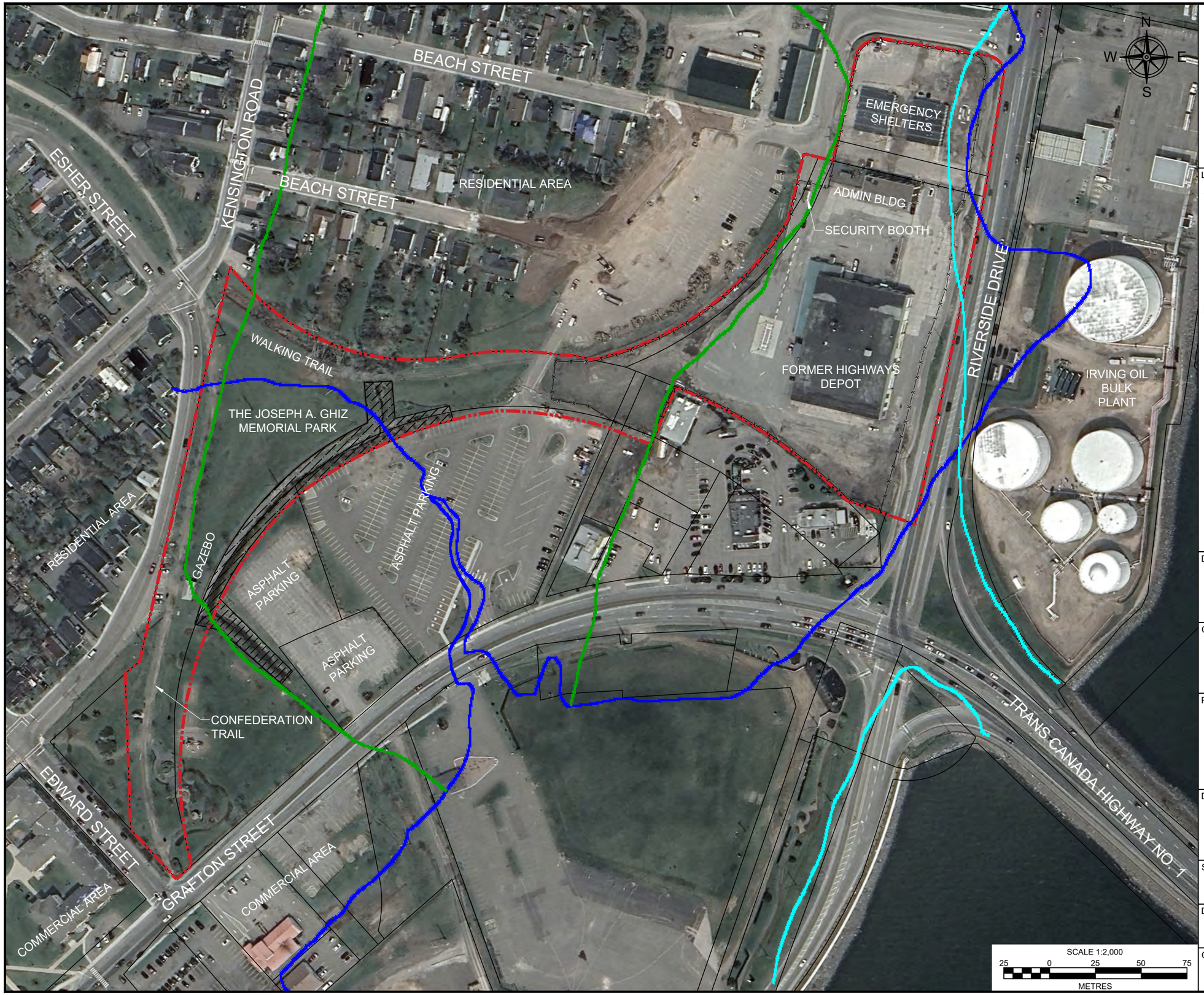
152.17

265 011A

2000408 98 LINE 12 PEI AGRICULTURE & FORESTRY

271
741


2016
M2037
TURNED OFF 4/10/75
1.45
Shut off under porch
PARK ST.
D2019
4" C.I.P.
SSH 11/08
STORAGE TANKS
D.O.H. GOVERNMENT GARAGE
MAIN GATE
Gate Posts
4.70
1.15
4"
LARGE M.H. COVER
M.H.? 18" LOW (CABLE SHOW 45° bend)
WASTE OIL PIT
1039
1059
1038
1060
M1105



ALL-TECH
ENVIRONMENTAL SERVICES LIMITED

LEGEND:

- APPROXIMATE SITE BOUNDARY
- PID BOUNDARY
- FENCELINE
- 1880 SWAMP
- 1880 APPROXIMATE SHORELINE
- 1935 APPROXIMATE SHORELINE
- APPROXIMATE MANMADE DITCH

DRAWING TITLE:

1880 AND 1935 SHORELINES

CLIENT:

PEI TRANSPORTATION AND INFRASTRUCTURE

PROJECT:

PHASE II ENVIRONMENTAL SITE ASSESSMENT
QUEEN'S COUNTY HIGHWAY DEPOT
CHARTLOTTETOWN, PEI

DATE:	PROJECT #:
OCTOBER 2023	PE23251
SCALE: 1:2,000	FIGURE #: APPENDIX
DRAWN BY: SA	
CHECKED BY: RF	

Appendix E Borehole, Monitoring Well and Shallow Test Hole Logs

ALL-TECH ENVIRONMENTAL SERVICES LIMITED
WWW.TOALLTECH.COM
Since 1993

Location ID: BH23-01

Project Name: PE23251
Project: Phase II ESA
Location: 64 Park Street, Charlottetown, PE
Client PEI DTI

Drilling Contractor: MEG Drilling Services
Drilling Method: Standard Auger
Sampling Method: Split Spoon
Borehole Diameter (mm): 100
Borehole Depth (m): 1.83

Date Started: July 19, 2023
Date Completed: July 19, 2023
Observer: Vlad Trajkovic
Checked By: Randy Fancey

Depth Scale (m)	Material Description	Stratigraphy	Soil Samples	Vapour Readings	Method	N Value	Recovery %	Completion Detail
	TOPSOIL Dark reddish brown topsoil with grass, roots, and organic material.							
0.2	SILT Reddish brown silt, some fine-grained sand, trace gravel and organic material.				SS	11	95	
0.4								
0.6	Sandy GRAVEL Black/grey sandy gravel, fine to medium-grained, some organic material. Glass shards and construction debris observed.							
0.8			SA1	0	SS	10	82	
1								
1.2	Saturated at 1.22 m							
1.4					SS	2	1	
1.6								
1.8	No obvious indications of impacts throughout borehole.							
	End of borehole at 1.83 m							

Disclaimer This bore log is intended for environmental not geotechnical purposes.

produced by ESlog.ESdat.net on 13 Sep 2023

ALL-TECH ENVIRONMENTAL SERVICES LIMITED
WWW.TOALLTECH.COM
Since 1993

Location ID: BH23-02

Project Name: PE23251
Project: Phase II ESA
Location: 64 Park Street, Charlottetown, PE
Client PEI DTI

Drilling Contractor: MEG Drilling Services
Drilling Method: Standard Auger
Sampling Method: Split Spoon
Borehole Diameter (mm): 100
Borehole Depth (m): 1.83

Date Started: July 19, 2023
Date Completed: July 19, 2023

Observer: Vlad Trajkovic
Checked By: Randy Fancey

Depth Scale (m)	Material Description	Stratigraphy	Soil Samples	Vapour Readings	Method	N Value	Recovery %	Completion Detail
	TOPSOIL Dark reddish brown topsoil with grass, roots, and organic material.							
0.2	SILT Reddish brown silt, some fine-grained sand, trace gravel and organic material.				SS	7	83	
0.4								
0.6	Sandy GRAVEL Black/grey sandy gravel, fine to medium-grained, some organic material. Glass shards and construction debris observed.							
0.8			SA1	0	SS	5	62	
1								
1.2	Saturated at 1.22 m							
1.4					SS	2	1	
1.6								
1.8	No obvious indications of impacts throughout borehole.							
	End of borehole at 1.83 m							

Disclaimer This bore log is intended for environmental not geotechnical purposes.

produced by ESlog.ESdat.net on 13 Sep 2023

ALL-TECH ENVIRONMENTAL SERVICES LIMITED
WWW.TOALLTECH.COM
Since 1993

Location ID: BH23-03

Project Name: PE23251
Project: Phase II ESA
Location: 64 Park Street, Charlottetown, PE
Client PEI DTI

Drilling Contractor: MEG Drilling Services
Drilling Method: Standard Auger
Sampling Method: Split Spoon
Borehole Diameter (mm): 100
Borehole Depth (m): 4.26

Date Started: July 19, 2023
Date Completed: July 19, 2023

Observer: Vlad Trajkovic
Checked By: Randy Fancey

Depth Scale (m)	Material Description	Stratigraphy	Soil Samples	Vapour Readings	Method	N Value	Recovery %	Completion Detail
	CONCRETE Augured to 0.17 m.							
	Gravely SAND Reddish brown gravely sand, some silt.		SA1	0	SS	19	70	
0.5	SILT Reddish brown silt, some fine-grained sand, trace gravel and organic material.				SS	9	41	
1								
1.5			SA2	0	SS	23	83	
	Clayey SILT Reddish brown clayey silt, trace fine-grained sand. Wet at 1.82 m.							
2					SS	21	100	
2.5					SS	24	50	
3								
					SS	23	20	
3.5	Saturated at 3.63 m.							
					SS	3	1	
4	No obvious indications of impacts throughout borehole.							
	End of borehole at 4.26 m							

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ALL-TECH ENVIRONMENTAL SERVICES LIMITED
WWW.TOALLTECH.COM
Since 1993

Location ID: BH23-04

Project Name: PE23251
Project: Phase II ESA
Location: 64 Park Street, Charlottetown, PE
Client PEI DTI

Drilling Contractor: MEG Drilling Services
Drilling Method: Standard Auger
Sampling Method: Split Spoon
Borehole Diameter (mm): 100
Borehole Depth (m): 4.26

Date Started: July 19, 2023
Date Completed: July 19, 2023

Observer: Vlad Trajkovic
Checked By: Randy Fancey

Depth Scale (m)	Material Description	Stratigraphy	Soil Samples	Vapour Readings	Method	N Value	Recovery %	Completion Detail
	CONCRETE Augured to 0.17 m.							
	Gravely SAND Reddish brown gravely sand, some silt.		SA1	0	SS	14	58	
0.5	SILT Reddish brown silt, some fine-grained sand, trace gravel and organic material.				SS	17	20	
1								
1.5			SA2	0	SS	22	100	
	Clayey SILT Reddish brown clayey silt, trace fine-grained sand. Wet at 1.82 m.							
2					SS	24	83	
2.5					SS	15	60	
3								
					SS	10	20	
3.5								
	Saturated at 3.96 m.				SS	4	3	
4	No obvious indications of impacts throughout borehole.							
	End of borehole at 4.26 m							

produced by ESlog.ESdat.net on 13 Sep 2023

ALL-TECH ENVIRONMENTAL SERVICES LIMITED
WWW.TOALLTECH.COM
Since 1993

Location ID: BH23-05

Project Name: PE23251
Project: Phase II ESA
Location: 64 Park Street, Charlottetown, PE
Client PEI DTI

Drilling Contractor: MEG Drilling Services
Drilling Method: Hollow Stem Auger
Sampling Method: Split Spoon
Borehole Diameter (mm): 100
Borehole Depth (m): 5.18

Date Started: July 20, 2023
Date Completed: July 20, 2023

Observer: Vlad Trajkovic
Checked By: Randy Fancey

Comments: Switched to hollow stem auger to vertically delineate impacts observed in MW23-11, augured to 3.96 m.

Depth Scale (m)	Material Description	Stratigraphy	Soil Samples	Vapour Readings	Method	N Value	Recovery %	Completion Detail
0	Asphalt							
	Gravely SAND Reddish brown gravely sand, some silt.							
0.5								
1								
1.5								
	Grey staining and moderate hydrocarbon odour.							
2	SILT Reddish brown silt, some fine-grained sand, trace clay, gravel, and organic material. Wet at 2.28 m							
2.5								
3								
3.5								
4	Clayey SILT Reddish brown clayey silt, trace fine-grained sand. Saturated at 3.96 m.		SA1	20	SS	10	2	
4.5								
					SS	6	10	
5	No obvious indications of impacts from 3.96- 5.18 m.							
	End of borehole at 5.18 m.							

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Location ID: BH23-06

Project Name: PE23251
Project: Phase II ESA
Location: 64 Park Street, Charlottetown, PE
Client PEI DTI

Drilling Contractor: MEG Drilling Services
Drilling Method: Hollow Stem Auger
Sampling Method: Split Spoon
Borehole Diameter (mm): 100
Borehole Depth (m): 5.18

Date Started: July 20, 2023
Date Completed: July 20, 2023

Observer: Vlad Trajkovic
Checked By: Randy Fancey

Comments: Augured to 1.5 m.

Depth Scale (m)	Material Description	Stratigraphy	Soil Samples	Vapour Readings	Method	N Value	Recovery %	Completion Detail
	Asphalt.							
	Gravely SAND Reddish brown gravely sand, some silt.							
0.5	SILT Reddish brown silt, some fine-grained sand, trace gravel and organic material.							
1								
1.5					SS	8	29	
2								
	Wet at 2.35 m Grey staining, moderate hydrocarbon odour at 2.42 m.		SA1	85	SS	2	20	
2.5								
3					SS	13	62	
3.5					SS	7	82	
4	Clayey SILT Reddish brown clayey silt, trace fine-grained sand. Saturated at 3.96 m.				SS	5	66	
4.5								
					SS	3	58	
5	No obvious indications of impacts from 3.96- 5.18 m.							
	End of borehole at 5.18 m.							

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Location ID: BH23-07

Project Name: PE23251
Project: Phase II ESA
Location: 64 Park Street, Charlottetown, PE
Client PEI DTI

Drilling Contractor: MEG Drilling Services
Drilling Method: Hollow Stem Auger
Sampling Method: Split Spoon
Borehole Diameter (mm): 100
Borehole Depth (m): 5.18

Date Started: July 20, 2023
Date Completed: July 20, 2023

Observer: Vlad Trajkovic
Checked By: Randy Fancey

Comments: Augured to 0.3 m.

Depth Scale (m)	Material Description	Stratigraphy	Soil Samples	Vapour Readings	Method	N Value	Recovery %	Completion Detail
	Asphalt.							
	Gravely SAND Reddish brown gravely sand, some silt.							
0.5	SILT Reddish brown silt, some fine-grained sand, gravel and clay, trace organic material.				SS	36	82	
1	Mild hydrocarbon odour at 1.15 m.				SS	23	80	
1.5					SS	14	45	
2								
2.5	Wet at 2.25 m. Grey staining, moderate hydrocarbon odour at 2.31 m.		SA1	63	SS	13	80	
3					SS	8	62	
3.5					SS	10	58	
4	Clayey SILT Reddish brown clayey silt, trace fine-grained sand. Saturated at 3.96 m.				SS	5	20	
4.5					SS	3	41	
5	No obvious indications of impacts from 3.96- 5.18 m.							
	End of borehole at 5.18 m.							

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Location ID: BH23-08

Project Name: PE23251
Project: Phase II ESA
Location: 64 Park Street, Charlottetown, PE
Client PEI DTI

Drilling Contractor: MEG Drilling Services
Drilling Method: Standard Auger
Sampling Method: Split Spoon
Borehole Diameter (mm): 100
Borehole Depth (m): 3.65

Date Started: July 20, 2023
Date Completed: July 20, 2023

Observer: Vlad Trajkovic
Checked By: Randy Fancey

Depth Scale (m)	Material Description	Stratigraphy	Soil Samples	Vapour Readings	Method	N Value	Recovery %	Completion Detail
	Sandy GRAVEL Grey sandy gravel, some silt.							
	SILT Reddish brown silt, some fine-grained sand and clay, trace gravel and organic material.				SS	10	10	
0.5								
					SS	15	62	
1								
	Clayey SILT Reddish brown clayey silt, trace fine-grained sand. Wet at 1.46 m.		SA1	15	SS	11	80	
1.5								
					SS	13	60	
2								
	Saturated at 2.44 m.							
2.5					SS	16	83	
3								
					SS	9	41	
	No obvious indications of impacts throughout borehole.							
3.5								
	End of borehole at 3.65 m.							

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Location ID: BH23-09

Project Name: PE23251
Project: Phase II ESA
Location: 64 Park Street, Charlottetown, PE
Client PEI DTI

Drilling Contractor: MEG Drilling Services
Drilling Method: Standard Auger
Sampling Method: Split Spoon
Borehole Diameter (mm): 100
Borehole Depth (m): 3.04

Date Started: July 20, 2023
Date Completed: July 20, 2023
Observer: Vlad Trajkovic
Checked By: Randy Fancey

Depth Scale (m)	Material Description	Stratigraphy	Soil Samples	Vapour Readings	Method	N Value	Recovery %	Completion Detail
	Concrete							
	Sandy GRAVEL Grey sandy gravel, some silt.				SS	18	62	
0.5	SILT Reddish brown silt, some fine-grained sand and clay, trace gravel and organic material.				SS	27	80	
1								
1.5	Wet at 1.51 m.		SA1	25	SS	28	50	
	Clayey SILT Reddish brown clayey silt, trace fine-grained sand.				SS	23	58	
2	Saturated at 2.44 m.							
2.5					SS	23	15	
	No obvious indications of impacts throughout borehole.							
3	End of borehole at 3.04 m.							

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Location ID: BH23-10

Project Name: PE23251
Project: Phase II ESA
Location: 64 Park Street, Charlottetown, PE
Client PEI DTI

Drilling Contractor: MEG Drilling Services
Drilling Method: Standard Auger
Sampling Method: Split Spoon
Borehole Diameter (mm): 100
Borehole Depth (m): 3.04

Date Started: July 20, 2023
Date Completed: July 20, 2023

Observer: Vlad Trajkovic
Checked By: Randy Fancey

Depth Scale (m)	Material Description	Stratigraphy	Soil Samples	Vapour Readings	Method	N Value	Recovery %	Completion Detail
	Concrete.							
	Sandy GRAVEL Grey sandy gravel, some silt.				SS	37	62	
	SILT Reddish brown silt, some fine-grained sand and clay, trace gravel and organic material.							
0.5					SS	32	80	
1								
1.5					SS	24	50	
	Wet at 1.74 m.							
2	Grey staining and strong hydrocarbon odour at 2.11 m.		SA1	120	SS	23	58	
	Clayey SILT Reddish brown clayey silt, trace fine-grained sand. Saturated at 2.44 m.							
2.5					SS	22	15	
3	End of borehole at 3.04 m.							

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Location ID: BH23-11

Project Name: PE23251
Project: Phase II ESA
Location: 64 Park Street, Charlottetown, PE
Client PEI DTI

Drilling Contractor: MEG Drilling Services
Drilling Method: Standard Auger
Sampling Method: Split Spoon
Borehole Diameter (mm): 100
Borehole Depth (m): 3.04

Date Started: July 21, 2023
Date Completed: July 21, 2023

Observer: Vlad Trajkovic
Checked By: Randy Fancey

Depth Scale (m)	Material Description	Stratigraphy	Soil Samples	Vapour Readings	Method	N Value	Recovery %	Completion Detail
	Concrete.							
	Sandy GRAVEL Grey sandy gravel, some silt.				SS	46	80	
0.5	SILT Reddish brown silt, some fine-grained sand and clay, trace gravel and organic material.				SS	51	82	
1								
1.5					SS	30	80	
	Wet at 1.80 m.							
2	Clayey SILT Reddish brown clayey silt, trace fine-grained sand.		SA1	15	SS	21	65	
	Saturated at 2.44 m.							
2.5					SS	17	35	
	No obvious indications of impacts throughout borehole.							
3	End of borehole at 3.04 m.							

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Location ID: BH23-12

Project Name: PE23251
Project: Phase II ESA
Location: 64 Park Street, Charlottetown, PE
Client PEI DTI

Drilling Contractor: MEG Drilling Services
Drilling Method: Standard Auger
Sampling Method: Split Spoon
Borehole Diameter (mm): 100
Borehole Depth (m): 3.04

Date Started: July 21, 2023
Date Completed: July 21, 2023
Observer: Vlad Trajkovic
Checked By: Randy Fancey

Depth Scale (m)	Material Description	Stratigraphy	Soil Samples	Vapour Readings	Method	N Value	Recovery %	Completion Detail
	Concrete							
	Sandy GRAVEL Grey sandy gravel, some silt.				SS	42	62	
0.5	SILT Reddish brown silt, some fine-grained sand and clay, trace gravel and organic material.				SS	44	20	
1								
1.5					SS	22	80	
	Wet at 1.80 m.							
2	Clayey SILT Reddish brown clayey silt, trace fine-grained sand.		SA1	10	SS	19	65	
	Saturated at 2.44 m.							
2.5					SS	17	26	
	No obvious indications of impacts throughout borehole.							
3	End of borehole at 3.04 m.							

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Location ID: BH23-13

Project Name: PE23251
Project: Phase II ESA
Location: 64 Park Street, Charlottetown, PE
Client PEI DTI

Drilling Contractor: MEG Drilling Services
Drilling Method: Standard Auger
Sampling Method: Split Spoon
Borehole Diameter (mm): 100
Borehole Depth (m): 2.74

Date Started: July 21, 2023
Date Completed: July 21, 2023

Observer: Vlad Trajkovic
Checked By: Randy Fancey

Comments: BH23-13 was drilled to delineate impacts related to BH23-10 at 2.11 m, augured to 1.5 m.

Depth Scale (m)	Material Description	Stratigraphy	Soil Samples	Vapour Readings	Method	N Value	Recovery %	Completion Detail
	Concrete.							
	Sandy GRAVEL Grey sandy gravel, some slit.							
0.5	SILT Reddish brown silt, some fine-grained sand and clay, trace gravel and organic material.							
1								
1.5			SA1	90	SS	22	66	
2	Wet at 1.80 m Grey staining and strong hydrocarbon odour at 1.92 m.							
	Clayey SILT Reddish brown clayey silt, trace fine-grained sand.				SS	20	80	
2.5	Saturated at 2.44 m.							
	End of borehole at 2.74 m.							

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Location ID: BH23-14

Project Name: PE23251
Project: Phase II ESA
Location: 64 Park Street, Charlottetown, PE
Client PEI DTI

Drilling Contractor: MEG Drilling Services
Drilling Method: Standard Auger
Sampling Method: Split Spoon
Borehole Diameter (mm): 100
Borehole Depth (m): 2.74

Date Started: July 21, 2023
Date Completed: July 21, 2023

Observer: Vlad Trajkovic
Checked By: Randy Fancey

Comments: BH23-14 was drilled to delineate impacts related to BH23-13 at 1.92 m, augured to 1.5 m.

Depth Scale (m)	Material Description	Stratigraphy	Soil Samples	Vapour Readings	Method	N Value	Recovery %	Completion Detail
	Concrete							
	Sandy GRAVEL Grey sandy gravel, some slit.							
0.5	SILT Reddish brown silt, some fine-grained sand and clay, trace gravel and organic material.							
1								
1.5								
			SA1	30	SS	29	62	
	Wet at 1.80 m							
2								
	Clayey SILT Reddish brown clayey silt, trace fine-grained sand. Saturated at 2.44 m.				SS	22	83	
2.5	No obvious indications of impacts throughout borehole.							
	End of borehole at 2.74 m.							

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ALL-TECH ENVIRONMENTAL SERVICES LIMITED
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Location ID: BH23-15

Project Name: PE23251
Project: Phase II ESA
Location: 64 Park Street, Charlottetown, PE
Client PEI DTI

Drilling Contractor: MEG Drilling Services
Drilling Method: Standard Auger
Sampling Method: Split Spoon
Borehole Diameter (mm): 100
Borehole Depth (m): 2.74

Date Started: July 21, 2023
Date Completed: July 21, 2023

Observer: Vlad Trajkovic
Checked By: Randy Fancey

Comments: BH23-15 was drilled to delineate impacts related to BH23-13 at 1.92 m, augured to 1.5 m.

Depth Scale (m)	Material Description	Stratigraphy	Soil Samples	Vapour Readings	Method	N Value	Recovery %	Completion Detail
	Concrete.							
	Sandy GRAVEL Grey sandy gravel, some slit.							
0.5	SILT Reddish brown silt, some fine-grained sand and clay, trace gravel and organic material.							
1								
1.5								
	Wet at 1.80 m		SA1	10	SS	32	79	
2								
	Clayey SILT Reddish brown clayey silt, trace fine-grained sand. Saturated at 2.44 m.				SS	19	52	
2.5	No obvious indications of impacts throughout borehole.							
	End of borehole at 2.74 m.							

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Location ID: BH23-16

Project Name: PE23251
Project: Phase II ESA
Location: 64 Park Street, Charlottetown, PE
Client PEI DTI

Drilling Contractor: MEG Drilling Services
Drilling Method: Standard Auger
Sampling Method: Split Spoon
Borehole Diameter (mm): 100
Borehole Depth (m): 2.74

Date Started: July 21, 2023
Date Completed: July 21, 2023

Observer: Vlad Trajkovic
Checked By: Randy Fancey

Comments: BH23-16 was drilled to delineate impacts related to BH23-10 at 2.11 m, augured to 1.5 m.

Depth Scale (m)	Material Description	Stratigraphy	Soil Samples	Vapour Readings	Method	N Value	Recovery %	Completion Detail
	Concrete							
	Sandy GRAVEL Grey sandy gravel, some slit.							
0.5	SILT Reddish brown silt, some fine-grained sand and clay, trace gravel and organic material.							
1								
1.5								
	Wet at 1.80 m		SA1	22	SS	11	100	
2								
	Clayey SILT Reddish brown clayey silt, trace fine-grained sand. Saturated at 2.44 m.				SS	14	83	
2.5	No obvious indications of impacts throughout borehole.							
	End of borehole 2.74 m.							

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Location ID: BH23-17

Project Name: PE23251
Project: Phase II ESA
Location: 64 Park Street, Charlottetown, PE
Client PEI DTI

Drilling Contractor: MEG Drilling Services
Drilling Method: Standard Auger
Sampling Method: Split Spoon
Borehole Diameter (mm): 100
Borehole Depth (m): 3.04

Date Started: July 21, 2023
Date Completed: July 21, 2023

Observer: Vlad Trajkovic
Checked By: Randy Fancey

Depth Scale (m)	Material Description	Stratigraphy	Soil Samples	Vapour Readings	Method	N Value	Recovery %	Completion Detail
	Concrete.							
	Sandy GRAVEL Grey sandy gravel, some sand and silt.				SS	34	37	
0.5	SILT Reddish brown silt, some fine-grained sand and clay, trace gravel and organic material.				SS	48	25	
1								
1.5					SS	24	82	
	Wet at 1.80 m.							
2	Clayey SILT Reddish brown clayey silt, trace fine-grained sand.		SA1	55	SS	18	66	
	Saturated at 2.37 m.							
2.5					SS	12	82	
	No obvious indications of impacts throughout borehole.							
3	End of borehole 3.04 m.							

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Location ID: BH23-18

Project Name: PE23251
Project: Phase II ESA
Location: 64 Park Street, Charlottetown, PE
Client PEI DTI

Drilling Contractor: MEG Drilling Services
Drilling Method: Standard Auger
Sampling Method: Split Spoon
Borehole Diameter (mm): 100
Borehole Depth (m): 3.04

Date Started: July 21, 2023
Date Completed: July 21, 2023

Observer: Vlad Trajkovic
Checked By: Randy Fancey

Depth Scale (m)	Material Description	Stratigraphy	Soil Samples	Vapour Readings	Method	N Value	Recovery %	Completion Detail
	Concrete.							
	Sandy GRAVEL Grey sandy gravel, some sand and silt.				SS	30	62	
0.5	SILT Reddish brown silt, some fine-grained sand and clay, trace gravel and organic material.				SS	34	65	
1								
1.5					SS	29	82	
	Wet at 1.80 m.							
2	Clayey SILT Reddish brown clayey silt, trace fine-grained sand and gravel.		SA1	60	SS	26	46	
	Saturated at 2.38 m.							
2.5					SS	22	66	
	No obvious indications of impacts throughout borehole.							
3	End of borehole at 3.04 m.							

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Location ID: BH23-19

Project Name: PE23251
Project: Phase II ESA
Location: 64 Park Street, Charlottetown, PE
Client PEI DTI

Drilling Contractor: MEG Drilling Services
Drilling Method: Standard Auger
Sampling Method: Split Spoon
Borehole Diameter (mm): 100
Borehole Depth (m): 3.04

Date Started: July 21, 2023
Date Completed: July 21, 2023

Observer: Vlad Trajkovic
Checked By: Randy Fancey

Depth Scale (m)	Material Description	Stratigraphy	Soil Samples	Vapour Readings	Method	N Value	Recovery %	Completion Detail
	Concrete							
	Sandy GRAVEL Grey sandy gravel, some silt.				SS	37	82	
0.5	SILT Reddish brown silt, some fine-grained sand and clay, trace gravel and organic material.				SS	48	25	
1								
1.5					SS	14	82	
	Wet at 1.80 m.							
2	Grey staining and moderate hydrocarbon odour at 2.11 m.		SA1	165	SS	9	63	
	Clayey SILT Reddish brown clayey silt, trace fine-grained sand.							
2.5					SS	11	78	
3	End of borehole at 3.04 m.							

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Location ID: BH23-20

Project Name: PE23251
Project: Phase II ESA
Location: 64 Park Street, Charlottetown, PE
Client PEI DTI

Drilling Contractor: MEG Drilling Services
Drilling Method: Standard Auger
Sampling Method: Split Spoon
Borehole Diameter (mm): 100
Borehole Depth (m): 3.04

Date Started: July 21, 2023
Date Completed: July 21, 2023

Observer: Vlad Trajkovic
Checked By: Randy Fancey

Depth Scale (m)	Material Description	Stratigraphy	Soil Samples	Vapour Readings	Method	N Value	Recovery %	Completion Detail
	Concrete.							
	Sandy GRAVEL Grey sandy gravel, some silt.				SS	30	75	
0.5	SILT Reddish brown silt, some fine-grained sand and clay, trace gravel and organic material.				SS	28	58	
1								
1.5					SS	24	62	
	Wet at 1.80 m.							
2	Clayey SILT Reddish brown clayey silt, trace fine-grained sand and gravel.		SA1	40	SS	15	54	
	Saturated at 2.44 m.							
2.5					SS	16	83	
3	End of borehole at 3.04 m.							

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Location ID: BH23-21

Project Name: PE23251
Project: Phase II ESA
Location: 64 Park Street, Charlottetown, PE
Client PEI DTI

Drilling Contractor: MEG Drilling Services
Drilling Method: Standard Auger
Sampling Method: Split Spoon
Borehole Diameter (mm): 100
Borehole Depth (m): 2.74

Date Started: July 21, 2023
Date Completed: July 21, 2023

Observer: Vlad Trajkovic
Checked By: Randy Fancey

Comments: BH23-21 was drilled to delineate impacts related to BH23-19 at 2.11 m, augured to 1.5 m.

Depth Scale (m)	Material Description	Stratigraphy	Soil Samples	Vapour Readings	Method	N Value	Recovery %	Completion Detail
	Concrete.							
	Sandy GRAVEL Grey sandy gravel, some silt.							
	SILT Reddish brown silt, some fine-grained sand and clay, trace gravel and organic material.							
0.5								
1								
1.5								
			SA1	50	SS	10	82	
	Wet at 1.80 m							
2								
	Clayey SILT Reddish brown clayey silt, trace fine-grained sand. Saturated at 2.44 m.				SS	8	46	
2.5	No obvious indications of impacts throughout borehole.							
	End of borehole at 2.74 m.							

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Location ID: BH23-22

Project Name: PE23251
Project: Phase II ESA
Location: 64 Park Street, Charlottetown, PE
Client PEI DTI

Drilling Contractor: MEG Drilling Services
Drilling Method: Standard Auger
Sampling Method: Split Spoon
Borehole Diameter (mm): 100
Borehole Depth (m): 3.65

Date Started: July 24, 2023
Date Completed: July 24, 2023

Observer: Vlad Trajkovic
Checked By: Randy Fancey

Depth Scale (m)	Material Description	Stratigraphy	Soil Samples	Vapour Readings	Method	N Value	Recovery %	Completion Detail
	Asphalt.							
	Sandy GRAVEL Grey sandy gravel, some silt.				SS	28	62	
0.5	Sandy SILT Reddish brown sandy silt, medium to fine-grained, some gravel and organic material.				SS	40	54	
1								
1.5	Clay content increases as depth increases.				SS	36	83	
2	Wet at 1.80 m.		SA1	60	SS	26	62	
2.5	Clayey SILT Reddish brown clayey silt, trace fine-grained sand.				SS	16	80	
3								
3.5	No obvious indications of impacts throughout borehole.				SS	21	41	
	End of borehole at 3.65 m.							

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Location ID: BH23-23

Project Name: PE23251
Project: Phase II ESA
Location: 64 Park Street, Charlottetown, PE
Client PEI DTI

Drilling Contractor: MEG Drilling Services
Drilling Method: Standard Auger
Sampling Method: Split Spoon
Borehole Diameter (mm): 100
Borehole Depth (m): 3.65

Date Started: July 24, 2023
Date Completed: July 24, 2023

Observer: Vlad Trajkovic
Checked By: Randy Fancey

Depth Scale (m)	Material Description	Stratigraphy	Soil Samples	Vapour Readings	Method	N Value	Recovery %	Completion Detail
	Asphalt.							
	Sandy GRAVEL Grey sandy gravel, some silt.				SS	22	66	
0.5	Sandy SILT Reddish brown sandy silt, medium to fine-grained, some gravel and organic material.				SS	28	60	
1								
1.5	Clay content increases as depth increases.				SS	20	83	
	Wet at 1.8 m.							
2			SA1	45	SS	20	83	
	Clayey SILT Reddish brown clayey silt, trace fine-grained sand.							
2.5					SS	15	34	
3	Saturated at 3.04 m.							
					SS	12	25	
3.5	No obvious indications of impacts throughout borehole.							
	End of borehole 3.65 m.							

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Location ID: BH23-24

Project Name: PE23251
Project: Phase II ESA
Location: 64 Park Street, Charlottetown, PE
Client PEI DTI

Drilling Contractor: MEG Drilling Services
Drilling Method: Standard Auger
Sampling Method: Split Spoon
Borehole Diameter (mm): 100
Borehole Depth (m): 3.65

Date Started: July 25, 2023
Date Completed: July 25, 2023

Observer: Vlad Trajkovic
Checked By: Randy Fancey

Depth Scale (m)	Material Description	Stratigraphy	Soil Samples	Vapour Readings	Method	N Value	Recovery %	Completion Detail
	CONCRETE Augured to 0.17 m.							
	Gravely SAND Reddish brown gravely sand, some silt.				SS	14	41	
0.5	SILT Reddish brown silt, some fine-grained sand, trace gravel and organic material.				SS	10	55	
1								
	Wet at 1.45 m.		SA1	45	SS	6	83	
1.5	Clayey SILT Reddish brown clayey silt, trace fine-grained sand.							
2					SS	12	83	
2.5					SS	10	50	
3	Saturated at 3.04 m.							
					SS	6	25	
3.5	No obvious indications of impacts throughout borehole.							
	End of borehole at 3.65 m.							

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Location ID: BH23-25

Project Name: PE23251
Project: Phase II ESA
Location: 64 Park Street, Charlottetown, PE
Client PEI DTI

Drilling Contractor: MEG Drilling Services
Drilling Method: Standard Auger
Sampling Method: Split Spoon
Borehole Diameter (mm): 100
Borehole Depth (m): 3.65

Date Started: July 25, 2023
Date Completed: July 25, 2023

Observer: Vlad Trajkovic
Checked By: Randy Fancey

Depth Scale (m)	Material Description	Stratigraphy	Soil Samples	Vapour Readings	Method	N Value	Recovery %	Completion Detail
	Asphalt							
	Sandy GRAVEL Grey sandy gravel, some silt.				SS	41	55	
0.5	SILT Reddish brown silt, some fine-grained sand and clay, trace gravel and organic material.				SS	40	41	
1								
1.5	Clay content increases as depth increases.				SS	15	83	
	Wet at 1.84 m.							
2			SA1	15	SS	19	83	
	Clayey SILT Reddish brown clayey silt, trace fine-grained sand.							
2.5					SS	10	1	
3	Saturated at 3.04 m.							
					SS	2	3	
3.5								
	End of borehole at 3.65 m.							

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Location ID: BH23-26

Project Name: PE23251
Project: Phase II ESA
Location: 64 Park Street, Charlottetown, PE
Client PEI DTI

Drilling Contractor: MEG Drilling Services
Drilling Method: Standard Auger
Sampling Method: Split Spoon
Borehole Diameter (mm): 100
Borehole Depth (m): 3.04

Date Started: July 25, 2023
Date Completed: July 25, 2023

Observer: Vlad Trajkovic
Checked By: Randy Fancey

Depth Scale (m)	Material Description	Stratigraphy	Soil Samples	Vapour Readings	Method	N Value	Recovery %	Completion Detail
	Asphalt.							
	Sandy GRAVEL Grey sandy gravel, some silt.				SS	22	65	
0.5	SILT Reddish brown silt, some fine-grained sand and clay, trace gravel and organic material.							
	Grey staining and moderate hydrocarbon odour at 0.92m.		SA1	120	SS	13	83	
1								
1.5	Clay content increases as depth increases. Wet at 1.67 m.				SS	22	42	
2					SS	13	60	
	Clayey SILT Reddish brown clayey silt, trace fine-grained sand.							
2.5	Saturated at 2.69 m.				SS	10	20	
3	End of borehole at 3.04 m.							

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Location ID: BH23-27

Project Name: PE23251
Project: Phase II ESA
Location: 64 Park Street, Charlottetown, PE
Client PEI DTI

Drilling Contractor: MEG Drilling Services
Drilling Method: Standard Auger
Sampling Method: Split Spoon
Borehole Diameter (mm): 100
Borehole Depth (m): 3.04

Date Started: July 25, 2023
Date Completed: July 25, 2023

Observer: Vlad Trajkovic
Checked By: Randy Fancey

Depth Scale (m)	Material Description	Stratigraphy	Soil Samples	Vapour Readings	Method	N Value	Recovery %	Completion Detail
	Asphalt.							
	Sandy GRAVEL Grey sandy gravel, some silt.							
	SILT Reddish brown silt, some fine-grained sand and clay, trace gravel and organic material.				SS	23	83	
0.5								
					SS	22	75	
1								
	Clay content increases as depth increases.							
					SS	21	53	
1.5	Wet at 1.68 m.							
2			SA1	35	SS	17	83	
	Clayey SILT Reddish brown clayey silt, trace fine-grained sand.							
2.5								
	Saturated at 2.71 m.				SS	6	16	
	No obvious indications of impacts throughout borehole.							
3	End of borehole at 3.04 m.							

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Location ID: MW23-01

Project Name: PE23251
Project: Phase II ESA
Location: 64 Park Street, Charlottetown, PE
Client PEI DTI

Drilling Contractor: MEG Drilling Services
Drilling Method: Standard Auger
Sampling Method: Split Spoon
Borehole Diameter (mm): 100
Borehole Depth (m): 2.43

Date Started: July 18, 2023
Date Completed: July 18, 2023

Observer: Vlad Trajkovic
Checked By: Randy Fancey

Depth Scale (m)	Material Description	Stratigraphy	Soil Samples	Vapour Readings	Method	N Value	Recovery %	Completion Details
	TOPSOIL Dark reddish brown topsoil with grass, roots, and organic material.							
	SILT Reddish brown silt, some fine-grained sand, trace gravel and organic material.				SS	20	83	Bentonite
0.5								
	Wet at 0.65 m.		SA1 and SA2	65	SS	10	41	
1								
					SS	2	66	Filter Pack: No.2 Silica
1.5	Clayey SILT Reddish brown clayey silt, trace fine-grained sand.							
	Saturated at 1.81 m.							
2					SS	3	35	
	No obvious indications of impacts throughout borehole.							
	End of borehole at 2.43 m.							
2.5								

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Location ID: MW23-02

Project Name: PE23251
Project: Phase II ESA
Location: 64 Park Street, Charlottetown, PE
Client PEI DTI

Drilling Contractor: MEG Drilling Services
Drilling Method: Standard Auger
Sampling Method: Split Spoon
Borehole Diameter (mm): 100
Borehole Depth (m): 2.43

Date Started: July 18, 2023
Date Completed: July 18, 2023
Observer: Vlad Trajkovic
Checked By: Randy Fancey

Depth Scale (m)	Material Description	Stratigraphy	Soil Samples	Vapour Readings	Method	N Value	Recovery %	Completion Details
	TOPSOIL Dark reddish brown topsoil with grass, roots, and organic material.							
	SILT Reddish brown silt, some fine-grained sand, trace gravel and organic material.				SS	6	83	Bentonite
0.5	Sandy GRAVEL Black/grey sandy gravel, fine to medium-grained, some organic material. Glass shards and construction debris observed.							
	Wet at 0.91 m. ▽		SA1 and SA2	80	SS	2	54	
1	Large amount of organic material.							
					SS	1	1	Filter Pack: No.2 Silica
1.5	Clayey SILT Reddish brown clayey silt, trace fine-grained sand.							
	Very saturated at 1.83 m.							
2					SS	1	1	
	No obvious indications of impacts throughout borehole.							
2.5	End of borehole at 2.43							

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Location ID: MW23-03

Project Name: PE23251
Project: Phase II ESA
Location: 64 Park Street, Charlottetown, PE
Client PEI DTI

Drilling Contractor: MEG Drilling Services
Drilling Method: Standard Auger
Sampling Method: Split Spoon
Borehole Diameter (mm): 100
Borehole Depth (m): 3.65

Date Started: July 18, 2023
Date Completed: July 18, 2023

Observer: Vlad Trajkovic
Checked By: Randy Fancey

Depth Scale (m)	Material Description	Stratigraphy	Soil Samples	Vapour Readings	Method	N Value	Recovery %	Completion Details
	TOPSOIL Dark reddish brown topsoil with grass, roots, and organic material.							
0.5	SILT Reddish brown silt, some fine-grained sand, trace gravel and organic material.		SA1	15	SS	14	83	Bentonite
	Organic Material Black organic material with roots				SS	17	54	
1	SILT Reddish brown silt, some fine-grained sand, trace gravel and organic material. Wet at 1.44 m.							
1.5	Organic Material Black organic material with roots		SA2	130	SS	7	1	
	SILT Reddish brown silt, some fine-grained sand, trace gravel and organic material.							Filter Pack: No.2 Silica
2					SS	8	1	
	Clayey SILT Reddish brown clayey silt, trace fine-grained sand. Saturated at 2.42 m.							
2.5					SS	5	75	
3								
					SS	3	50	
3.5	No obvious indications of impacts throughout borehole.							
	End of borehole at 3.65 m.							

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Location ID: MW23-04

Project Name: PE23251
Project: Phase II ESA
Location: 64 Park Street, Charlottetown, PE
Client PEI DTI

Drilling Contractor: MEG Drilling Services
Drilling Method: Standard Auger
Sampling Method: Split Spoon
Borehole Diameter (mm): 100
Borehole Depth (m): 3.65

Date Started: July 18, 2023
Date Completed: July 18, 2023

Observer: Vlad Trajkovic
Checked By: Randy Fancey

Depth Scale (m)	Material Description	Stratigraphy	Soil Samples	Vapour Readings	Method	N Value	Recovery %	Completion Details
	Gravely SAND Greyish brown gravely sand, some silt.		SA1	20	SS	24	70	
0.5	Sandy SILT Reddish brown sandy silt, medium to fine-grained, some gravel and organic material.				SS	18	83	Bentonite
1	Wet at 1.15 m. ▽							
1.5			SA2	55	SS	5	83	
2	Organic Material Black organic material with roots				SS	6	29	Filter Pack: No.2 Silica
2.5	SILT Reddish brown silt, some fine-grained sand, trace gravel and organic material.				SS	3	34	
3	Clayey SILT Reddish brown clayey silt, trace fine-grained sand. Saturated at 2.96 m.				SS	1	6	
3.5	No obvious indications of impacts throughout borehole.							
	End of borehole at 3.65 m.							

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Location ID: MW23-05

Project Name: PE23251
Project: Phase II ESA
Location: 64 Park Street, Charlottetown, PE
Client PEI DTI

Drilling Contractor: MEG Drilling Services
Drilling Method: Standard Auger
Sampling Method: Split Spoon
Borehole Diameter (mm): 100
Borehole Depth (m): 3.04

Date Started: July 18, 2023
Date Completed: July 18, 2023

Observer: Vlad Trajkovic
Checked By: Randy Fancey

Depth Scale (m)	Material Description	Stratigraphy	Soil Samples	Vapour Readings	Method	N Value	Recovery %	Completion Details
	Gravely SAND Greyish brown gravely sand, some silt.							
	Sandy SILT Reddish brown sandy silt, medium to fine-grained, some gravel and organic material.				SS	11	80	
0.5								Bentonite
			SA1	35	SS	14	70	
1								
			SA2 and SA3	65	SS	2	83	
1.5	Wet at 1.45 m.							Filter Pack: No.2 Silica
					SS	1	91	
2								
	Clayey SILT Reddish brown clayey silt, trace fine-grained sand.							
	Saturated at 2.42 m.							
2.5					SS	4	79	
	No obvious indications of impacts throughout borehole.							
3	End of borehole at 3.04 m.							

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Location ID: MW23-06

Project Name: PE23251
Project: Phase II ESA
Location: 64 Park Street, Charlottetown, PE
Client PEI DTI

Drilling Contractor: MEG Drilling Services
Drilling Method: Standard Auger
Sampling Method: Split Spoon
Borehole Diameter (mm): 100
Borehole Depth (m): 4.26

Date Started: July 18, 2023
Date Completed: July 18, 2023

Observer: Vlad Trajkovic
Checked By: Randy Fancey

Depth Scale (m)	Material Description	Stratigraphy	Soil Samples	Vapour Readings	Method	N Value	Recovery %	Completion Details
	ASPHALT							
	Gravely SAND Reddish brown gravely sand, some silt.				SS	14	66	Bentonite
0.5	SILT Reddish brown silt, some fine-grained sand, trace gravel and organic material.				SS	8	33	
1								
1.5				0	SS	22	54	
2	Wet at 1.98 m.							
▽			SA1		SS	26	83	Filter Pack: No.2 Silica
2.5					SS	16	70	
	Clayey SILT Reddish brown clayey silt, trace fine-grained sand.							
3					SS	14	42	
3.5	Saturated at 3.54 m.							
					SS	15	100	
4	No obvious indications of impacts throughout borehole.							
	End of borehole at 4.26							

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Location ID: MW23-07

Project Name: PE23251
Project: Phase II ESA
Location: 64 Park Street, Charlottetown, PE
Client PEI DTI

Drilling Contractor: MEG Drilling Services
Drilling Method: Standard Auger
Sampling Method: Split Spoon
Borehole Diameter (mm): 100
Borehole Depth (m): 4.57

Date Started: July 19, 2023
Date Completed: July 19, 2023

Observer: Vlad Trajkovic
Checked By: Randy Fancey

Depth Scale (m)	Material Description	Stratigraphy	Soil Samples	Vapour Readings	Method	N Value	Recovery %	Completion Details
	ASPHALT							
	Gravely SAND Reddish brown gravely sand, some silt.							
0.5	SILT Reddish brown silt, some fine-grained sand, trace gravel and organic material.				SS	6	83	
1					SS	19	16	Bentonite
1.5					SS	26	100	
2	Wet at 2.19 m.		SA1	55	SS	19	70	
2.5	Clayey SILT Reddish brown clayey silt, trace fine-grained sand.				SS	16	25	Filter Pack: No.2 Silica
3					SS	13	36	
3.5	Saturated at 3.3 m.							
4					SS	6	65	
4.5	Augured to 4.57 m. No obvious indications of impacts throughout borehole.							
	End of borehole at 4.57 m.							

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Location ID: MW23-08

Project Name: PE23251
Project: Phase II ESA
Location: 64 Park Street, Charlottetown, PE
Client PEI DTI

Drilling Contractor: MEG Drilling Services
Drilling Method: Standard Auger
Sampling Method: Split Spoon
Borehole Diameter (mm): 100
Borehole Depth (m): 4.57

Date Started: July 19, 2023
Date Completed: July 19, 2023

Observer: Vlad Trajkovic
Checked By: Randy Fancey

Depth Scale (m)	Material Description	Stratigraphy	Soil Samples	Vapour Readings	Method	N Value	Recovery %	Completion Details
	ASPHALT							
	Gravely SAND Reddish brown gravely sand, some silt.				SS	16	50	
0.5	SILT Reddish brown silt, some fine-grained sand, trace gravel and organic material.				SS	6	83	Bentonite
1								
1.5					SS	15	79	
2	Wet at 2.18 m.		SA1	30	SS	10	65	
2.5	Clayey SILT Reddish brown clayey silt, trace fine-grained sand.				SS	13	16	Filter Pack: No.2 Silica
3	Saturated at 3.14 m.							
3.5					SS	16	83	
4					SS	15	83	
4.5	Augured to 4.57 m. No obvious indications of impacts throughout borehole.							
	End of borehole at 4.57 m.							

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Location ID: MW23-09

Project Name: PE23251
Project: Phase II ESA
Location: 64 Park Street, Charlottetown, PE
Client PEI DTI

Drilling Contractor: MEG Drilling Services
Drilling Method: Standard Auger
Sampling Method: Split Spoon
Borehole Diameter (mm): 100
Borehole Depth (m): 2.43

Date Started: July 19, 2023
Date Completed: July 19, 2023

Observer: Vlad Trajkovic
Checked By: Randy Fancey

Depth Scale (m)	Material Description	Stratigraphy	Soil Samples	Vapour Readings	Method	N Value	Recovery %	Completion Details
	Sandy GRAVEL Grey sandy gravel, fine to medium-grained. Saturated at 0.23 m.							
	Gravely SAND Grey sandy gravel, fine to medium-grained, some organic material and silt.				SS	19	25	Bentonite
0.5								
					SS	14	12	
1								Filter Pack: No.2 Silica
					SS	6	8	
1.5								
			SA1	80	SS	15	62	
2	SILT Reddish brown silt, some fine-grained sand, trace gravel and organic material. No obvious indications of impacts throughout borehole.							
	End of borehole at 2.43 m.							

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Location ID: MW23-10

Project Name: PE23251
Project: Phase II ESA
Location: 64 Park Street, Charlottetown, PE
Client PEI DTI

Drilling Contractor: MEG Drilling Services
Drilling Method: Standard Auger
Sampling Method: Split Spoon
Borehole Diameter (mm): 100
Borehole Depth (m): 4.57

Date Started: July 19, 2023
Date Completed: July 19, 2023

Observer: Vlad Trajkovic
Checked By: Randy Fancey

Depth Scale (m)	Material Description	Stratigraphy	Soil Samples	Vapour Readings	Method	N Value	Recovery %	Completion Details
	Concrete							
	Gravely SAND Reddish brown gravely sand, some silt.							
0.5	SILT Reddish brown silt, some fine-grained sand, trace gravel and organic material.				SS	10	29	
1					SS	18	70	Bentonite
1.5					SS	15	87	
2	Wet at 2.15 m.		SA1	75	SS	10	60	
2.5	Clayey SILT Reddish brown clayey silt, trace fine-grained sand.				SS	8	34	Filter Pack: No.2 Silica
3	Saturated at 3.25 m.				SS	6	16	
3.5								
4					SS	3	8	
	Augured to 4.57 m. No obvious indications of impacts throughout borehole.							
4.5								
	End of borehole at 4.57 m.							

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Location ID: MW23-11

Project Name: PE23251
Project: Phase II ESA
Location: 64 Park Street, Charlottetown, PE
Client PEI DTI

Drilling Contractor: MEG Drilling Services
Drilling Method: Standard Auger
Sampling Method: Split Spoon
Borehole Diameter (mm): 100
Borehole Depth (m): 4.57

Date Started: July 19, 2023
Date Completed: July 19, 2023

Observer: Vlad Trajkovic
Checked By: Randy Fancey

Depth Scale (m)	Material Description	Stratigraphy	Soil Samples	Vapour Readings	Method	N Value	Recovery %	Completion Details
	ASPHALT							
0.5	Gravely SAND Reddish brown gravely sand, some silt.				SS	18	60	
1					SS	11	66	Bentonite
1.5					SS	12	60	
2	Grey staining and moderate hydrocarbon odour.							
	SILT Reddish brown silt, some fine-grained sand, trace clay, gravel, and organic material. Wet at 2.27 m.		SA1 and SA2	65	SS	4	70	
2.5	Grey staining and strong hydrocarbon odour.		SA3 and SA4	85	SS	5	50	Filter Pack: No.2 Silica
3								
3.5					SS	5	35	
4					SS	3	4	
4.5	Augured to 4.57 m.							
	End of borehole at 4.57 m.							

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Location ID: MW23-12

Project Name: PE23251
Project: Phase II ESA
Location: 64 Park Street, Charlottetown, PE
Client PEI DTI

Drilling Contractor: MEG Drilling Services
Drilling Method: Standard Auger
Sampling Method: Split Spoon
Borehole Diameter (mm): 100
Borehole Depth (m): 4.57

Date Started: July 19, 2023
Date Completed: July 19, 2023

Observer: Vlad Trajkovic
Checked By: Randy Fancey

Depth Scale (m)	Material Description	Stratigraphy	Soil Samples	Vapour Readings	Method	N Value	Recovery %	Completion Details
	ASPHALT							
	Gravely SAND Reddish brown gravely sand, some silt.				SS	17	54	
0.5	SILT Reddish brown silt, some fine-grained sand, trace clay, gravel, and organic material.				SS	14	75	Bentonite
1								
1.5					SS	15	60	
2			SA1 and SA2	55	SS	8	83	
	Wet at 2.29 m. ▽							
2.5					SS	9	3	Filter Pack: No.2 Silica
	Saturated at 2.85 m.							
3			SA3	70	SS	4	45	
3.5								
	Clayey SILT Reddish brown clayey silt, trace fine-grained sand.				SS	8	32	
4	Augured to 4.57 m. No obvious indications of impacts throughout borehole.							
4.5								
	End of borehole at 4.57 m.							

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Location ID: MW23-13

Project Name: PE23251
Project: Phase II ESA
Location: 64 Park Street, Charlottetown, PE
Client PEI DTI

Drilling Contractor: MEG Drilling Services
Drilling Method: Standard Auger
Sampling Method: Split Spoon
Borehole Diameter (mm): 100
Borehole Depth (m): 4.57

Date Started: July 20, 2023
Date Completed: July 20, 2023

Observer: Vlad Trajkovic
Checked By: Randy Fancey

Depth Scale (m)	Material Description	Stratigraphy	Soil Samples	Vapour Readings	Method	N Value	Recovery %	Completion Details
	ASPHALT							
0.5	Gravely SAND Reddish brown gravely sand, some silt.				SS	7	75	
	SILT Reddish brown silt, some fine-grained sand, trace clay, gravel, and organic material.				SS	9	41	Bentonite
1								
1.5	Greyish black gravely sand with construction debris. Mild hydrocarbon odour.		SA1 and SA2	40	SS	5	90	
2 ▽	Wet at 2.01 m.				SS	8	20	
2.5	Grey staining and mild hydrocarbon odour							
	Clayey SILT Reddish brown clayey silt, trace fine-grained sand.		SA3 and SA4	80	SS	2	66	Filter Pack: No.2 Silica
3								
					SS	6	79	
3.5								
					SS	5	83	
4								
	Augured to 4.57 m. No obvious indications of impacts from 3.65-4.57 m.							
4.5								
	End of borehole at 4.57 m.							

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Location ID: MW23-14

Project Name: PE23251
Project: Phase II ESA
Location: 64 Park Street, Charlottetown, PE
Client PEI DTI

Drilling Contractor: MEG Drilling Services
Drilling Method: Standard Auger
Sampling Method: Split Spoon
Borehole Diameter (mm): 100
Borehole Depth (m): 4.26

Date Started: July 20, 2023
Date Completed: July 20, 2023

Observer: Vlad Trajkovic
Checked By: Randy Fancey

Depth Scale (m)	Material Description	Stratigraphy	Soil Samples	Vapour Readings	Method	N Value	Recovery %	Completion Details
	ASPHALT							
	Gravely SAND Reddish brown gravely sand, some silt.				SS	5	50	
0.5	SILT Reddish brown silt, some fine-grained sand, trace gravel and organic material. Wood debris at 0.72 - 0.80 m.				SS	13	37	Bentonite
1								
1.5					SS	12	83	
2 ▽	Wet at 2.01 m.		SA1	50	SS	11	83	
2.5					SS	12	66	Filter Pack: No.2 Silica
	Clayey SILT Reddish brown clayey silt, trace fine-grained sand.							
3	Saturated at 3.26 m.				SS	14	30	
3.5								
					SS	7	8	
4	Augured to 4.26 m. No obvious indications of impacts throughout borehole.							
	End of borehole at 4.26 m.							

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Location ID: MW23-15

Project Name: PE23251
Project: Phase II ESA
Location: 64 Park Street, Charlottetown, PE
Client PEI DTI

Drilling Contractor: MEG Drilling Services
Drilling Method: Standard Auger
Sampling Method: Split Spoon
Borehole Diameter (mm): 100
Borehole Depth (m): 3.65

Date Started: July 20, 2023
Date Completed: July 20, 2023

Observer: Vlad Trajkovic
Checked By: Randy Fancey

Depth Scale (m)	Material Description	Stratigraphy	Soil Samples	Vapour Readings	Method	N Value	Recovery %	Completion Details
	ASPHALT							
	Gravely SAND Reddish brown gravely sand, some silt.							
0.5	SILT Reddish brown silt, some fine-grained sand, trace gravel and organic material.				SS	18	62	Bentonite
1					SS	24	79	
1.5					SS	15	83	
2 ▽	Wet at 2.01 m.		SA1 and SA2	40	SS	23	62	Filter Pack: No.2 Silica
	Clayey SILT Reddish brown clayey silt, trace fine-grained sand.							
2.5	Saturated at 2.64 m.				SS	20	83	
3								
					SS	9	74	
3.5	Augured to 3.65 m. No obvious indications of impacts throughout borehole.							
	End of borehole at 3.65 m.							

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Location ID: MW23-16

Project Name: PE23251
Project: Phase II ESA
Location: 64 Park Street, Charlottetown, PE
Client PEI DTI

Drilling Contractor: MEG Drilling Services
Drilling Method: Standard Auger
Sampling Method: Split Spoon
Borehole Diameter (mm): 100
Borehole Depth (m): 3.65

Date Started: July 20, 2023
Date Completed: July 20, 2023

Observer: Vlad Trajkovic
Checked By: Randy Fancey

Depth Scale (m)	Material Description	Stratigraphy	Soil Samples	Vapour Readings	Method	N Value	Recovery %	Completion Details
	ASPHALT							
0.5	Gravely SAND Greyish brown gravely sand, some silt.				SS	28	79	Bentonite
1	SILT Reddish brown silt, some fine-grained sand, trace gravel and organic material.				SS	17	62	
1.5	Wet at 1.68 m.		SA1	81	SS	9	83	
2					SS	11	62	Filter Pack: No.2 Silica
2.5	Saturated at 2.46 m. Clayey SILT Reddish brown clayey silt, trace fine-grained sand.				SS	8	54	
3								
3.5	Augured to 3.65 m. No obvious indications of impacts throughout borehole.				SS	16	12	
	End of borehole at 3.65 m.							

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Location ID: MW23-17

Project Name: PE23251
Project: Phase II ESA
Location: 64 Park Street, Charlottetown, PE
Client PEI DTI

Drilling Contractor: MEG Drilling Services
Drilling Method: Standard Auger
Sampling Method: Split Spoon
Borehole Diameter (mm): 100
Borehole Depth (m): 3.65

Date Started: July 24, 2023
Date Completed: July 24, 2023

Observer: Vlad Trajkovic
Checked By: Randy Fancey

Depth Scale (m)	Material Description	Stratigraphy	Soil Samples	Vapour Readings	Method	N Value	Recovery %	Completion Details
	ASPHALT							
	Sandy GRAVEL Grey sandy gravel, some silt.							
0.5	Sandy SILT Reddish brown sandy silt, medium to fine-grained, some gravel and organic material.				SS	16	83	Bentonite
1					SS	18	80	
1.5					SS	7	100	
	▽ Wet at 1.92 m.							
2	Clayey SILT Reddish brown clayey silt, trace fine-grained sand.		SA1 and SA2	41	SS	18	100	Filter Pack: No.2 Silica
2.5					SS	26	65	
3								
					SS	19	12	
3.5	Augured to 3.65 m. No obvious indications of impacts throughout borehole.							
	End of borehole at 3.65 m.							

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Location ID: MW23-18

Project Name: PE23251
Project: Phase II ESA
Location: 64 Park Street, Charlottetown, PE
Client PEI DTI

Drilling Contractor: MEG Drilling Services
Drilling Method: Standard Auger
Sampling Method: Split Spoon
Borehole Diameter (mm): 100
Borehole Depth (m): 3.65

Date Started: July 24, 2023
Date Completed: July 24, 2023

Observer: Vlad Trajkovic
Checked By: Randy Fancey

Depth Scale (m)	Material Description	Stratigraphy	Soil Samples	Vapour Readings	Method	N Value	Recovery %	Completion Details
	Asphalt							
	Sandy GRAVEL Grey sandy gravel, some silt.							
	Sandy SILT Reddish brown sandy silt, medium to fine-grained, some gravel and organic material.				SS	36	65	
0.5								Bentonite
					SS	28	80	
1								
1.5			SA1 and SA2	26	SS	17	83	
	▽ Wet at 1.60 m.							
2					SS	21	50	Filter Pack: No.2 Silica
	Clayey SILT Reddish brown clayey silt, trace fine-grained sand.							
2.5					SS	20	100	
3								
					SS	15	74	
3.5	Augured to 3.65 m. No obvious indications of impacts throughout borehole.							
	End of borehole at 3.65 m.							

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Since 1993

Location ID: MW23-19

Project Name: PE23251
Project: Phase II ESA
Location: 64 Park Street, Charlottetown, PE
Client PEI DTI

Drilling Contractor: MEG Drilling Services
Drilling Method: Standard Auger
Sampling Method: Split Spoon
Borehole Diameter (mm): 100
Borehole Depth (m): 3.65

Date Started: July 24, 2023
Date Completed: July 24, 2023

Observer: Vlad Trajkovic
Checked By: Randy Fancey

Depth Scale (m)	Material Description	Stratigraphy	Soil Samples	Vapour Readings	Method	N Value	Recovery %	Completion Details
	Sandy GRAVEL Grey sandy gravel, some silt.							
0.5	Sandy SILT Greyish black sandy silt, medium to fine-grained, some gravel and organic material. Construction debris, wood debris, plastic, and glass shards observed throughout sandy silt layer. Mild hydrocarbon odour.				SS	6	20	Bentonite
1			SA1	65	SS	12	83	
1.5					SS	4	22	
2 ▽	Wet at 2.01 m. High amount of organic material.							
	Clayey SILT Reddish brown clayey silt, trace fine-grained sand.				SS	3	20	Filter Pack: No.2 Silica
2.5	Very saturated at 2.52 m. High amount of organic material.				SS	6	7	
3					SS	17	29	
3.5	Augured to 3.65 m. No obvious indications of impacts from 2.10-3.65 m.							
	End of borehole at 3.65 m.							

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Location ID: MW23-20

Project Name: PE23251
Project: Phase II ESA
Location: 64 Park Street, Charlottetown, PE
Client PEI DTI

Drilling Contractor: MEG Drilling Services
Drilling Method: Standard Auger
Sampling Method: Split Spoon
Borehole Diameter (mm): 100
Borehole Depth (m): 3.65

Date Started: July 24, 2023
Date Completed: July 24, 2023

Observer: Vlad Trajkovic
Checked By: Randy Fancey

Depth Scale (m)	Material Description	Stratigraphy	Soil Samples	Vapour Readings	Method	N Value	Recovery %	Completion Details
	Sandy GRAVEL Grey sandy gravel, some silt.							
0.5	Sandy SILT Reddish brown sandy silt, medium to fine-grained, some gravel and organic material.				SS	15	29	Bentonite
1					SS	20	60	
1.5					SS	6	83	
2 ▽	Clayey SILT Reddish brown clayey silt, trace fine-grained sand. Wet at 2.01 m.		SA1	80	SS	6	50	Filter Pack: No.2 Silica
2.5					SS	21	80	
3					SS	24	20	
3.5	Augured to 3.65 m. No obvious indications of impacts throughout borehole.							
	End of borehole at 3.65 m.							

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Location ID: MW23-21

Project Name: PE23251
Project: Phase II ESA
Location: 64 Park Street, Charlottetown, PE
Client PEI DTI

Drilling Contractor: MEG Drilling Services
Drilling Method: Standard Auger
Sampling Method: Split Spoon
Borehole Diameter (mm): 100
Borehole Depth (m): 3.65

Date Started: July 24, 2023
Date Completed: July 24, 2023
Observer: Vlad Trajkovic
Checked By: Randy Fancey

Depth Scale (m)	Material Description	Stratigraphy	Soil Samples	Vapour Readings	Method	N Value	Recovery %	Completion Details
	ASPHALT							
	Sandy GRAVEL Grey sandy gravel, some silt.							
0.5	Sandy SILT Reddish brown sandy silt, medium to fine-grained, some gravel and organic material.				SS	15	20	Bentonite
1					SS	11	80	
1.5			SA1	15	SS	9	80	
2 ▽	Clayey SILT Reddish brown clayey silt, trace fine-grained sand. Wet at 1.90 m.				SS	24	65	Filter Pack: No.2 Silica
2.5					SS	16	50	
3					SS	9	20	
3.5	Augured to 3.65 m. No obvious indications of impacts throughout borehole.							
	End of borehole at 3.65 m.							

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ALL-TECH ENVIRONMENTAL SERVICES LIMITED
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Since 1993

Location ID: MW23-22

Project Name: PE23251
Project: Phase II ESA
Location: 64 Park Street, Charlottetown, PE
Client PEI DTI

Drilling Contractor: MEG Drilling Services
Drilling Method: Standard Auger
Sampling Method: Split Spoon
Borehole Diameter (mm): 100
Borehole Depth (m): 3.65

Date Started: July 24, 2023
Date Completed: July 24, 2023

Observer: Vlad Trajkovic
Checked By: Randy Fancey

Depth Scale (m)	Material Description	Stratigraphy	Soil Samples	Vapour Readings	Method	N Value	Recovery %	Completion Details
0	TOPSOIL Dark reddish brown topsoil with grass, roots, and organic material.							
	Sandy SILT Reddish brown sandy silt, medium to fine-grained, some gravel and organic material.				SS	6	80	
0.5								Bentonite
					SS	7	80	
1								
1.5			SA1	90	SS	4	83	
	Organic Material Black organic material with roots. Wet at 1.92 m.							
2 ▽	Clayey SILT Reddish brown clayey silt, trace fine-grained sand.				SS	12	20	Filter Pack: No.2 Silica
2.5								
					SS	20	65	
3								
	Saturated at 3.15 m.							
					SS	24	100	
3.5	Augured to 3.65 m. No obvious indications of impacts throughout borehole.							
	End of borehole at 3.65 m.							

Surface Soil Sample Descriptions

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Surface Soil Sample ID	Sample Date (Y/M/D)	Slag Observed (Y/N)	Soil Horizon Depth (m)	Soil Horizon Description
SS-01	2023-07-19	Y	0.00-0.08	Grey-brown crushed stone (trail surface material)
			0.08-0.25	Clay-silt, crushed siltstone and rocks (coarse, up to 0.08 m diameter)
			0.25-0.51*	Slag (black material), continues past maximum depth
SS-02	2023-07-19	N	0.00-0.09	Grey-brown crushed stone (trail surface material)
			0.09-0.42	Clay-silt, crushed siltstone and rocks (coarse, up to 0.08 m diameter), some suspected gypsum
SS-03	2023-07-19	Y	0.00-0.08	Grey-brown crushed stone (trail surface material)
			0.08-0.15	Clay-silt, crushed siltstone and rocks (coarse, up to 0.08 m diameter), some suspected gypsum
			0.15-0.44	Slag (black material), continues past maximum depth
SS-04	2023-07-19	Y	0.00-0.09	Grey-brown crushed stone (trail surface material)
			0.09-0.36	Clay-silt, crushed siltstone and rocks (coarse, up to 0.08 m diameter)
			0.36-0.50*	Slag (black material), continues past maximum depth
SS-05	2023-07-19	Y	0.00-0.09	Grey-brown crushed stone (trail surface material)
			0.09-0.20	Clay-silt, crushed siltstone and rocks (coarse, up to 0.08 m diameter)
			0.20-0.38*	Slag (black material), continues past maximum depth
SS-06	2023-07-19	Y	0.00-0.10	Grey-brown crushed stone (trail surface material)
			0.10-0.27	Clay-silt, crushed siltstone and rocks (coarse, up to 0.08 diameter), some suspected gypsum
			0.27-0.43*	Slag (black material), continues past maximum depth
SS-07	2023-07-19	Y	0.00-0.07	Organics (grass and roots)
			0.07-0.46	Clay-silt, crushed siltstone and rocks (coarse, up to 0.08 m diameter), some suspected gypsum
			0.46-0.55*	Slag (black material), continues past maximum depth

*Surface soil sample submitted for analysis

BFD: Blind field duplicate

Surface Soil Sample Descriptions (Cont'd)

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Surface Soil Sample ID	Sample Date (Y/M/D)	Slag Observed (Y/N)	Soil Horizon Depth (m)	Soil Horizon Description
SS-08	2023-07-19	Y	0.00-0.07	Organics (grass and roots)
			0.07-0.45	Clay-silt, crushed siltstone and rocks (coarse, up to 0.08 m diameter), some gypsum
			0.45-0.55*	Slag (black material)
			0.55-0.59	Clay-silt, crushed siltstone and rocks (coarse)
SS-09	2023-07-20	Y	0.00-0.07	Organics (grass and roots)
			0.07-0.45	Clay-silt, crushed siltstone and rocks (coarse, up to 0.08 m diameter)
			0.45-0.60*	Slag (black material), continues past maximum depth
SS-19 (BFD of SS-09)	2023-07-20	Y	0.00-0.07	Organics (grass and roots)
			0.07-0.45	Clay-silt, crushed siltstone and rocks (coarse, up to 0.08 m diameter)
			0.45-0.60*	Slag (black material), continues past maximum depth
SS-10	2023-07-20	N	0.00-0.07	Organics (grass and roots)
			0.07-0.67	Clay-silt, fewer rocks (most small diameter i.e. <0.03 m)
SS-11	2023-07-20	N	0.00-0.07	Organics (grass and roots)
			0.07-0.55	Clay-silt, fewer rocks (most small diameter i.e. <0.03 m)
SS-12	2023-07-21	N	0.00-0.23	Gravel, organics (weeds and roots), bits of asphalt and cement
			0.23-0.34	Clay-silt, some rounded and angular rocks (<0.05 m diameter)
			0.34-0.58	Lots of rounded and angular rocks (<0.05 m diameter), clay-silt
			0.58-0.67	Silt, larger rounded siltstone. Moist horizon
SS-13	2023-07-21	N	0.00-0.11	Asphalt, gravel, organics (weeds and roots)
			0.11-0.38	Angular and rounded rocks and siltstone (<0.10 m diameter), silt
			0.38-0.45	Chunk of asphalt
			0.45-0.59*	Rounded and angular rocks, silt

*Surface soil sample submitted for analysis

BFD: Blind field duplicate

Surface Soil Sample Descriptions (Cont'd)

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Surface Soil Sample ID	Sample Date (Y/M/D)	Slag Observed (Y/N)	Soil Horizon Depth (m)	Soil Horizon Description
SS-14	2023-07-21	N	0.00-0.10	Organics (grass and roots)
			0.10-0.58	Silt, round and angular rocks, some siltstone (<0.10 m diameter)
SS-15	2023-07-19	N	0.00-0.10	Organics (grass and roots)
			0.10-0.52	Silt, round and angular rocks, some siltstone (<0.10 m diameter)
			0.52-0.62	Crushed rock (suspected concrete)
			0.62-0.80	Silt, rounded and angular rocks
SS-16	2023-07-19	N	0.00-0.10	Organics (grass and roots)
			0.10-0.44*	Silt, round and angular rocks, some siltstone (<0.10 m diameter). Note: soil sample collected from 0.25-0.44 m depth
			0.44-0.56	Crushed rock (suspected concrete)
SS-17	2023-07-25	Y	0.00-0.10	Organics (grass and roots)
			0.10-0.32	Clay-silt, crushed siltstone and rocks (coarse, up to 0.10 m diameter)
			0.32-0.39*	Slag (black material)
			0.39-0.45	Clay-silt, crushed siltstone and rocks (coarse)
SS-18 (BFD of SS-17)	2023-07-25	Y	0.00-0.10	Organics (grass and roots)
			0.10-0.32	Clay-silt, crushed siltstone and rocks (coarse, up to 0.10 m diameter)
			0.32-0.39*	Slag (black material)
			0.39-0.45	Clay-silt, crushed siltstone and rocks (coarse)
SS-21	2023-07-21	N	0.00-0.08	Mixed asphalt and gravel
			0.08-0.11	Silt, rounded rocks
			0.11-0.17	Silt, asphalt pieces, gravel
			0.17-0.56*	Compact silt, rounded rocks, some angular rocks, traces of asphalt. Moisture increasing with depth
			0.56-0.61*	Organics (roots, bits of wood). Note: soil sample collected from 0.41-0.61 m depth

*Surface soil sample submitted for analysis

BFD: Blind field duplicate

Surface Soil Sample Descriptions (Cont'd)

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Surface Soil Sample ID	Sample Date (Y/M/D)	Slag Observed (Y/N)	Soil Horizon Depth (m)	Soil Horizon Description
SS-22	2023-07-21	N	0.00-0.10	Organics (grass and roots)
			0.10-0.37	Silt, rounded and angular rocks, chunk of asphalt
			0.37-0.56	Crushed rock (suspected concrete)
SS-23	2023-07-21	Y	0.00-0.13	Gravel, organics (weeds and roots), bits of asphalt and cement
			0.13-0.46*	Compact silt, small rounded and angular rocks, bits of asphalt and cement, traces of slag
			0.46-0.57	Less compact silt, small rounded (<0.05 m diameter) and angular rocks, dark organics (roots and wood fibers). Moist horizon

*Surface soil sample submitted for analysis

BFD: Blind field duplicate

Appendix F Tables

TABLE 1: Depth to Groundwater and Groundwater Elevations

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Monitoring Well Locations	Ground Elevation (m)	Top of Casing Elevation (m)	Depth to Water (m)	Groundwater Elevation (m)
MW23-01	99.08	98.97	0.67	98.30
MW23-02	99.12	99.00	0.95	98.05
MW23-03	99.35	99.28	1.14	98.14
MW23-04	99.49	99.32	1.18	98.15
MW23-05	100.02	99.92	1.95	97.97
MW23-06	100.40	100.25	2.12	98.13
MW23-07	100.38	100.19	2.20	97.99
MW23-08	100.16	100.06	2.17	97.89
MW23-09	100.15	99.95	0.20	99.75
MW23-10	100.21	100.09	2.26	97.83
MW23-11	100.27	100.16	2.29	97.87
MW23-12	100.20	100.12	2.26	97.86
MW23-13	100.23	100.10	2.00	98.10
MW23-14	100.05	99.94	2.03	97.91
MW23-15	100.19	100.06	2.08	97.98
MW23-16	100.03	99.88	1.76	98.12
MW23-17	100.23	100.06	1.91	98.15
MW23-18	100.34	100.18	1.64	98.54
MW23-19	100.01	99.84	2.08	97.77
MW23-20	100.19	100.08	2.07	98.01
MW23-21	100.18	100.08	1.96	98.12
MW23-22	100.33	100.20	1.99	98.21

Notes:

Elevation data collected by ALL-TECH on August 1 and August 2, 2023

Bench mark: nearby utility poles (assumed elevation of 100.00 m)

TABLE 2: Metals in Shallow Soil (<1.0 m)

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Depth (m)* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	CCME CSQG		CCME CSQG (Check Values)		Shallow Soil Samples			
					Soil Ingestion/Soil Contact*		SS-01	SS-01, LD	SS-04	SS-05
							0.25-0.51	0.25-0.51	0.36-0.50	0.20-0.38
							2023-07-19	2023-07-19	2023-07-19	2023-07-19
			Residential/Parkland	Commercial	Residential/Parkland	Commercial	491916-01	491916-01	491916-02	491916-03
Aluminum	mg/kg	1	-	-			8030	8220	5210	6650
Antimony	mg/kg	0.1	20	40			2.3	2.1	6	2.7
Arsenic	mg/kg	1	12	12	12/17	12/26	**19**	**18**	**27**	**25**
Barium	mg/kg	1	500	2,000			94	95	208	84
Beryllium	mg/kg	0.1	4	8			0.7	0.7	0.5	0.6
Bismuth	mg/kg	1	-	-			< 1	< 1	< 1	< 1
Boron	mg/kg	1	-	-			4	5	3	4
Cadmium	mg/kg	0.01	10	22			0.46	0.43	0.24	0.53
Calcium	mg/kg	50	-	-			11200	12300	7340	5090
Chromium	mg/kg	1	64	87			23	23	13	25
Cobalt	mg/kg	0.1	50	300			7.2	7.4	7.4	8.2
Copper	mg/kg	1	63	91	1100/63	4000/91	**100**	**92**	**121**	**178**
Iron	mg/kg	20	-	-			42500	48100	50200	61400
Lead	mg/kg	0.1	140	260	140/300	260/600	**166**	**150**	**258**	**199**
Lithium	mg/kg	0.1	-	-			14.1	14.2	10.8	13.6
Magnesium	mg/kg	10	-	-			3910	4320	3120	2010
Manganese	mg/kg	1	-	-			558	595	451	481
Molybdenum	mg/kg	0.1	10	40			5.1	6.4	5.7	4.5
Nickel	mg/kg	1	45	89			19	19	19	25
Potassium	mg/kg	20	-	-			820	800	600	730
Rubidium	mg/kg	0.1	-	-			7.1	6.5	4.8	6.4
Selenium	mg/kg	1	1	2.9	80/1	125/2.9	**2**	**2**	1	1
Silver	mg/kg	0.1	20	40			< 0.1	< 0.1	< 0.1	< 0.1
Sodium	mg/kg	50	-	-			1520	1460	540	480

CCME: Canadian Council of Ministers of the Environment

CSQG: Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health (residential/parkland and commercial)

*Soil Ingestion/Soil Contact (Human Health/Environmental Health)

BFD: Blind field duplicate

LD: Laboratory duplicate

RDL: Reportable detection limit

< 1: Concentration is less than reportable detection limit of 1 mg/kg

-: No established guideline

Bold: Concentration exceeds CCME CSQG for residential/parkland land use

Bold: Concentration exceeds CCME CSQG for residential/parkland and commercial land use

TABLE 2 (Cont'd): Metals in Shallow Soil (<1.0 m)

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Depth (m)* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	CCME CSQG		CCME CSQG (Check Values)		Shallow Soil Samples			
					Soil Ingestion/Soil Contact*		SS-01	SS-01, LD	SS-04	SS-05
							0.25-0.51	0.25-0.51	0.36-0.50	0.20-0.38
							2023-07-19	2023-07-19	2023-07-19	2023-07-19
			Residential/Parkland	Commercial	Residential/Parkland	Commercial	491916-01	491916-01	491916-02	491916-03
Strontium	mg/kg	1	-	-			39	40	24	28
Tellurium	mg/kg	0.1	-	-			< 0.1	< 0.1	< 0.1	< 0.1
Thallium	mg/kg	0.1	1	1			0.3	0.3	0.2	0.3
Tin	mg/kg	1	50	300			10	9	25	16
Uranium	mg/kg	0.1	23	33			0.9	0.8	0.5	0.5
Vanadium	mg/kg	1	130	130			37	42	20	24
Zinc	mg/kg	1	250	410	10,000/250	16,000/410	169	162	115	228

CCME: Canadian Council of Ministers of the Environment

CSQG: Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health (residential/parkland and commercial)

*Soil Ingestion/Soil Contact (Human Health/Environmental Health)

BFD: Blind field duplicate

LD: Laboratory duplicate

RDL: Reportable detection limit

< 1: Concentration is less than reportable detection limit of 1 mg/kg

-: No established guideline

Bold: Concentration exceeds CCME CSQG for residential/parkland land use

Bold: Concentration exceeds CCME CSQG for residential/parkland and commercial land use

TABLE 2 (Cont'd): Metals in Shallow Soil (<1.0 m)
Phase II Environmental Site Assessment
Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Depth (m)* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	CCME CSQG		CCME CSQG (Check Values)		Shallow Soil Samples			
					Soil Ingestion/Soil Contact*		SS-06	SS-07	SS-08	SS-09
							0.27-0.43	0.46-0.55	0.45-0.55	0.45-0.60
							2023-07-19	2023-07-19	2023-07-19	2023-07-20
			Residential/Parkland	Commercial	Residential/Parkland	Commercial	491916-04	491916-05	491916-06	491916-07
Aluminum	mg/kg	1	-	-			6820	6530	5570	11400
Antimony	mg/kg	0.1	20	40			1.8	1.9	1.4	0.8
Arsenic	mg/kg	1	12	12	12/17	12/26	**31**	**18**	**13**	8
Barium	mg/kg	1	500	2,000			93	76	58	60
Beryllium	mg/kg	0.1	4	8			0.6	0.6	0.4	0.6
Bismuth	mg/kg	1	-	-			< 1	< 1	< 1	< 1
Boron	mg/kg	1	-	-			4	4	3	5
Cadmium	mg/kg	0.01	10	22			1.51	0.65	0.25	0.53
Calcium	mg/kg	50	-	-			7780	9300	5040	3240
Chromium	mg/kg	1	64	87			32	16	14	27
Cobalt	mg/kg	0.1	50	300			8.3	7.7	7.2	8.9
Copper	mg/kg	1	63	91	1100/63	4000/91	**169**	**83**	**77**	**69**
Iron	mg/kg	20	-	-			46900	39400	39400	30200
Lead	mg/kg	0.1	140	260	140/300	260/600	**192**	114	127	**147**
Lithium	mg/kg	0.1	-	-			12.6	12.2	12.2	28.1
Magnesium	mg/kg	10	-	-			2580	4280	2540	4710
Manganese	mg/kg	1	-	-			500	549	466	464
Molybdenum	mg/kg	0.1	10	40			4.5	5.4	2.9	1.9
Nickel	mg/kg	1	45	89			23	24	20	23
Potassium	mg/kg	20	-	-			740	690	650	1370
Rubidium	mg/kg	0.1	-	-			6.6	6.3	5.2	11.3
Selenium	mg/kg	1	1	2.9	80/1	125/2.9	**2**	1	< 1	1
Silver	mg/kg	0.1	20	40			0.1	< 0.1	< 0.1	< 0.1
Sodium	mg/kg	50	-	-			860	200	130	180

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*Soil Ingestion/Soil Contact (Human Health/Environmental Health)

BFD: Blind field duplicate

LD: Laboratory duplicate

RDL: Reportable detection limit

< 1: Concentration is less than reportable detection limit of 1 mg/kg

-: No established guideline

Bold: Concentration exceeds CCME CSQG for residential/parkland land use

Bold: Concentration exceeds CCME CSQG for residential/parkland and commercial land use

TABLE 2 (Cont'd): Metals in Shallow Soil (<1.0 m)

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Depth (m)* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	CCME CSQG		CCME CSQG (Check Values)		Shallow Soil Samples			
							SS-06	SS-07	SS-08	SS-09
							0.27-0.43	0.46-0.55	0.45-0.55	0.45-0.60
					Soil Ingestion/Soil Contact*		2023-07-19	2023-07-19	2023-07-19	2023-07-20
			Residential/Parkland	Commercial	Residential/Parkland	Commercial	491916-04	491916-05	491916-06	491916-07
Strontium	mg/kg	1	-	-			34	28	20	15
Tellurium	mg/kg	0.1	-	-			< 0.1	< 0.1	< 0.1	< 0.1
Thallium	mg/kg	0.1	1	1			0.4	0.2	0.2	0.1
Tin	mg/kg	1	50	300			14	9	7	8
Uranium	mg/kg	0.1	23	33			0.9	0.6	0.5	0.8
Vanadium	mg/kg	1	130	130			32	26	18	43
Zinc	mg/kg	1	250	410	10,000/250	16,000/410	**505**	234	120	**324**

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*Soil Ingestion/Soil Contact (Human Health/Environmental Health)

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Bold: Concentration exceeds CCME CSQG for residential/parkland land use

Bold: Concentration exceeds CCME CSQG for residential/parkland and commercial land use

TABLE 2 (Cont'd): Metals in Shallow Soil (<1.0 m)

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Depth (m)* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	CCME CSQG		CCME CSQG (Check Values)		Shallow Soil Samples			
					Soil Ingestion/Soil Contact*		SS-19 (BFD of SS-09)	SS-13	SS-16	SS-17
							0.45-0.60	0.45-0.59	0.25-0.44	0.32-0.39
							2023-07-20	2023-07-21	2023-07-21	2023-07-25
			Residential/Parkland	Commercial	Residential/Parkland	Commercial	491916-12	491916-08	491916-09	491916-10
Aluminum	mg/kg	1	-	-			11800	7940	9050	6850
Antimony	mg/kg	0.1	20	40			0.5	0.1	0.2	0.8
Arsenic	mg/kg	1	12	12	12/17	12/26	9	3	3	7
Barium	mg/kg	1	500	2,000			65	29	27	27
Beryllium	mg/kg	0.1	4	8			0.6	0.5	0.5	0.4
Bismuth	mg/kg	1	-	-			< 1	< 1	< 1	< 1
Boron	mg/kg	1	-	-			5	2	3	3
Cadmium	mg/kg	0.01	10	22			0.61	0.25	0.11	0.63
Calcium	mg/kg	50	-	-			3040	1570	11700	1160
Chromium	mg/kg	1	64	87			25	16	16	13
Cobalt	mg/kg	0.1	50	300			8.8	6.3	6.3	5.3
Copper	mg/kg	1	63	91	1100/63	4000/91	43	15	15	45
Iron	mg/kg	20	-	-			30300	17800	18500	16200
Lead	mg/kg	0.1	140	260	140/300	260/600	**142**	33.2	24.4	139
Lithium	mg/kg	0.1	-	-			28.5	15.9	19.1	15.1
Magnesium	mg/kg	10	-	-			4670	3000	8400	1700
Manganese	mg/kg	1	-	-			501	479	418	355
Molybdenum	mg/kg	0.1	10	40			1.8	0.5	1.5	2.1
Nickel	mg/kg	1	45	89			23	21	13	17
Potassium	mg/kg	20	-	-			1420	930	980	810
Rubidium	mg/kg	0.1	-	-			11.8	7.4	9	6.3
Selenium	mg/kg	1	1	2.9	80/1	125/2.9	1	1	< 1	1
Silver	mg/kg	0.1	20	40			< 0.1	< 0.1	< 0.1	< 0.1
Sodium	mg/kg	50	-	-			170	230	140	250

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*Soil Ingestion/Soil Contact (Human Health/Environmental Health)

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TABLE 2 (Cont'd): Metals in Shallow Soil (<1.0 m)

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Depth (m)* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	CCME CSQG		CCME CSQG (Check Values)		Shallow Soil Samples			
					Soil Ingestion/Soil Contact*		SS-19 (BFD of SS-09)	SS-13	SS-16	SS-17
							0.45-0.60	0.45-0.59	0.25-0.44	0.32-0.39
							2023-07-20	2023-07-21	2023-07-21	2023-07-25
			Residential/Parkland	Commercial	Residential/Parkland	Commercial	491916-12	491916-08	491916-09	491916-10
Strontium	mg/kg	1	-	-			16	7	10	11
Tellurium	mg/kg	0.1	-	-			< 0.1	< 0.1	< 0.1	< 0.1
Thallium	mg/kg	0.1	1	1			0.2	< 0.1	< 0.1	< 0.1
Tin	mg/kg	1	50	300			5	< 1	< 1	3
Uranium	mg/kg	0.1	23	33			0.8	0.7	0.6	0.6
Vanadium	mg/kg	1	130	130			43	32	19	46
Zinc	mg/kg	1	250	410	10,000/250	16,000/410	**327**	152	72	187

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Bold: Concentration exceeds CCME CSQG for residential/parkland and commercial land use

TABLE 2 (Cont'd): Metals in Shallow Soil (<1.0 m)

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Depth (m)* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	CCME CSQG		CCME CSQG (Check Values)		Shallow Soil Samples		
							SS-18 (BFD of SS-17)	SS-21	SS-23
							0.32-0.39	0.41-0.61	0.13-0.46
					Soil Ingestion/Soil Contact*		2023-07-25	2023-07-21	2023-07-21
			Residential/Parkland	Commercial	Residential/Parkland	Commercial	491916-11	491916-13	491916-14
Aluminum	mg/kg	1	-	-			7220	8540	9290
Antimony	mg/kg	0.1	20	40			1	0.2	0.2
Arsenic	mg/kg	1	12	12	12/17	12/26	7	4	3
Barium	mg/kg	1	500	2,000			32	29	28
Beryllium	mg/kg	0.1	4	8			0.4	0.5	0.7
Bismuth	mg/kg	1	-	-			< 1	< 1	< 1
Boron	mg/kg	1	-	-			3	3	5
Cadmium	mg/kg	0.01	10	22			0.57	0.12	0.03
Calcium	mg/kg	50	-	-			900	2910	640
Chromium	mg/kg	1	64	87			14	15	18
Cobalt	mg/kg	0.1	50	300			5.5	6.7	6.9
Copper	mg/kg	1	63	91	1100/63	4000/91	43	15	9
Iron	mg/kg	20	-	-			17300	18600	21800
Lead	mg/kg	0.1	140	260	140/300	260/600	**146**	58.3	7.2
Lithium	mg/kg	0.1	-	-			16.1	20.3	25.7
Magnesium	mg/kg	10	-	-			1740	3410	3720
Manganese	mg/kg	1	-	-			344	392	305
Molybdenum	mg/kg	0.1	10	40			1.7	0.6	0.4
Nickel	mg/kg	1	45	89			18	15	17
Potassium	mg/kg	20	-	-			860	1100	1590
Rubidium	mg/kg	0.1	-	-			6.7	8.5	10.3
Selenium	mg/kg	1	1	2.9	80/1	125/2.9	1	1	1
Silver	mg/kg	0.1	20	40			< 0.1	< 0.1	< 0.1
Sodium	mg/kg	50	-	-			250	80	840

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BFD: Blind field duplicate

LD: Laboratory duplicate

RDL: Reportable detection limit

< 1: Concentration is less than reportable detection limit of 1 mg/kg

-: No established guideline

Bold: Concentration exceeds CCME CSQG for residential/parkland land use

Bold: Concentration exceeds CCME CSQG for residential/parkland and commercial land use

TABLE 2 (Cont'd): Metals in Shallow Soil (<1.0 m)

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Depth (m)* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	CCME CSQG		CCME CSQG (Check Values)		Shallow Soil Samples		
							SS-18 (BFD of SS-17)	SS-21	SS-23
							0.32-0.39	0.41-0.61	0.13-0.46
					Soil Ingestion/Soil Contact*		2023-07-25	2023-07-21	2023-07-21
			Residential/Parkland	Commercial	Residential/Parkland	Commercial	491916-11	491916-13	491916-14
Strontium	mg/kg	1	-	-			9	8	5
Tellurium	mg/kg	0.1	-	-			< 0.1	< 0.1	< 0.1
Thallium	mg/kg	0.1	1	1			< 0.1	< 0.1	< 0.1
Tin	mg/kg	1	50	300			4	< 1	< 1
Uranium	mg/kg	0.1	23	33			0.5	0.5	0.6
Vanadium	mg/kg	1	130	130			39	19	15
Zinc	mg/kg	1	250	410	10,000/250	16,000/410	191	60	38

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*Soil Ingestion/Soil Contact (Human Health/Environmental Health)

BFD: Blind field duplicate

LD: Laboratory duplicate

RDL: Reportable detection limit

< 1: Concentration is less than reportable detection limit of 1 mg/kg

-: No established guideline

Bold: Concentration exceeds CCME CSQG for residential/parkland land use

Bold: Concentration exceeds CCME CSQG for residential/parkland and commercial land use

TABLE 3: Petroleum Hydrocarbons in Shallow Soil (<1.0 m)

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Depth (m)* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	PHRR[1] Tier I RBSLs Soil Ingestion		PHRR[2] Tier II PSSLs Soil Ingestion		Shallow Soil Samples				
							SS-01	SS-04	SS-05	SS-06	SS-07
							0.25-0.51	0.36-0.50	0.20-0.38	0.27-0.43	0.46-0.55
							2023-07-19	2023-07-19	2023-07-19	2023-07-19	2023-07-19
			Residential	Commercial	Residential	Commercial	491916-01	491916-02	491916-03	491916-04	491916-05
Benzene	mg/kg	0.005	0.099	2.5	66	360	**0.95**	**0.44**	**1.3**	**0.3**	**0.19**
Toluene	mg/kg	0.05	77	10,000	20,000	31,000	3.2	2.2	5.10	1.4	1.6
Ethylbenzene	mg/kg	0.01	30	10,000	9,300	14,000	0.31	0.14	0.37	0.11	0.38
Xylenes	mg/kg	0.05	8.8	110	140,000	210,000	4.4	2.90	4.3	1.9	4.3
C6 - C10 (less BTEX)	mg/kg	2.5	-	-	-	-	20	11	20	13	20
>C10-C16 Hydrocarbons	mg/kg	12	-	-	-	-	18	< 12	14	16	14
>C16-C21 Hydrocarbons	mg/kg	12	-	-	-	-	44	19	22	27	29
>C21-<C32 Hydrocarbons	mg/kg	12	-	-	-	-	170	90	73	99	57
Modified TPH	mg/kg	21	74 (Gasoline) 270 (Fuel Oil) 1,100 (Lube Oil)	870 (Gasoline) 4,000 (Fuel Oil) 10,000 (Lube Oil)	15,000 (Gasoline) 8,600 (Fuel Oil) 14,000 (Lube Oil)	22,000 (Gasoline) 13,000 (Fuel Oil) 21,000 (Lube Oil)	**250 (Gasoline)**	**120 (Gasoline)**	**130 (Gasoline)**	**160 (Gasoline)**	**120 (Gasoline)**
Reached Baseline at C32	mg/kg	N/A	NA	NA	NA	NA	Yes	Yes	Yes	No	Yes
Hydrocarbon Resemblance	mg/kg	N/A	NA	NA	NA	NA	PG.PAH.LO	PG.PAH.LO	PG.PAH.LO	PG.PAH.LO	PG.PAH.LO

[1]PHRR: Petroleum Hydrocarbon Remediation Regulations (Prince Edward Island, Environmental Protection Act, 2015), Tier I Risk Based Screening Levels for Soil (residential and commercial)

[2]PHRR: Petroleum Hydrocarbon Remediation Regulations (Prince Edward Island, Environmental Protection Act, 2015), Tier II Pathway Specific Screening Levels for Soil, Soil Ingestion (residential and commercial / non-potable / coarse-grained)

BFD: Blind field duplicate

FO.LO: Fuel oil and lube oil fraction

LO: Lube oil

NA: Not applicable

PAH: Possible PAHs detected

PG: Possible gasoline fraction

PWFO: Possible weathered fuel oil fraction

RDL: Reportable detection limit

WFO: Weathered fuel oil fraction

< 12: Concentration is less than reportable detection limit of 12 mg/kg

-: No established guideline

Bold: Concentration exceeds Tier I RBSLs for residential land use

Bold: Concentration exceeds Tier I RBSLs for residential and commercial land use

TABLE 3 (Cont'd): Petroleum Hydrocarbons in Shallow Soil (<1.0 m)

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Depth (m)* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	PHRR[1] Tier I RBSLs Soil Ingestion		PHRR[2] Tier II PSSLs Soil Ingestion		Shallow Soil Samples				
							SS-08	SS-09	SS-19 (BFD of SS-09)	SS-13	SS-16
							0.45-0.55	0.45-0.60	0.45-0.60	0.45-0.59	0.25-0.44
							2023-07-19	2023-07-20	2023-07-20	2023-07-21	2023-07-21
			Residential	Commercial	Residential	Commercial	491916-06	491916-07	491916-12	491916-08	491916-09
Benzene	mg/kg	0.005	0.099	2.5	66	360	**0.21**	**0.084**	0.025	< 0.005	< 0.005
Toluene	mg/kg	0.05	77	10,000	20,000	31,000	1.6	0.49	0.09	< 0.05	< 0.05
Ethylbenzene	mg/kg	0.01	30	10,000	9,300	14,000	0.25	0.03	0.02	< 0.01	< 0.01
Xylenes	mg/kg	0.05	8.8	110	140,000	210,000	3.1	0.43	0.17	< 0.05	< 0.05
C6 - C10 (less BTEX)	mg/kg	2.5	-	-	-	-	12	5	3	< 2.5	< 2.5
>C10-C16 Hydrocarbons	mg/kg	12	-	-	-	-	< 12	76	75	< 12	65
>C16-C21 Hydrocarbons	mg/kg	12	-	-	-	-	18	130	130	21	290
>C21-<C32 Hydrocarbons	mg/kg	12	-	-	-	-	68	720	640	100	290
Modified TPH	mg/kg	21	74 (Gasoline) 270 (Fuel Oil) 1,100 (Lube Oil)	870 (Gasoline) 4,000 (Fuel Oil) 10,000 (Lube Oil)	15,000 (Gasoline) 8,600 (Fuel Oil) 14,000 (Lube Oil)	22,000 (Gasoline) 13,000 (Fuel Oil) 21,000 (Lube Oil)	**98 (Gasoline)**	**930 (Fuel Oil)**	**850 (Fuel Oil)**	120	650 (Lube Oil)
Reached Baseline at C32	mg/kg	N/A	NA	NA	NA	NA	Yes	No	No	No	Yes
Hydrocarbon Resemblance	mg/kg	N/A	NA	NA	NA	NA	PG.PAH.LO	WFO.LO	WFO.LO	WFO.LO	PAH

[1]PHRR: Petroleum Hydrocarbon Remediation Regulations (Prince Edward Island, Environmental Protection Act, 2015), Tier I Risk Based Screening Levels for Soil (residential and commercial)

[2]PHRR: Petroleum Hydrocarbon Remediation Regulations (Prince Edward Island, Environmental Protection Act, 2015), Tier II Pathway Specific Screening Levels for Soil, Soil Ingestion (residential and commercial / non-potable / coarse-grained)

BFD: Blind field duplicate

FO.LO: Fuel oil and lube oil fraction

LO: Lube oil

NA: Not applicable

PAH: Possible PAHs detected

PG: Possible gasoline fraction

PWFO: Possible weathered fuel oil fraction

RDL: Reportable detection limit

WFO: Weathered fuel oil fraction

< 12: Concentration is less than reportable detection limit of 12 mg/kg

-: No established guideline

Bold: Concentration exceeds Tier I RBSLs for residential land use

Bold: Concentration exceeds Tier I RBSLs for residential and commercial land use

TABLE 3 (Cont'd): Petroleum Hydrocarbons in Shallow Soil (<1.0 m)
Phase II Environmental Site Assessment
Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Depth (m)* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	PHRR[1] Tier I RBSLs Soil Ingestion		PHRR[2] Tier II PSSLs Soil Ingestion		Shallow Soil Samples				
							SS-17	SS-18 (BFD of SS-17)	SS-21	SS-21, LD	SS-23
							0.32-0.39	0.32-0.39	0.41-0.61	0.41-0.61	0.13-0.46
							2023-07-25	2023-07-25	2023-07-21	2023-07-21	2023-07-21
			Residential	Commercial	Residential	Commercial	491916-10	491916-11	491916-13	491916-13	491916-14
Benzene	mg/kg	0.005	0.099	2.5	66	360	**0.21**	**0.15**	0.024	0.006	< 0.005
Toluene	mg/kg	0.05	77	10,000	20,000	31,000	19	9.2	0.14	< 0.05	< 0.05
Ethylbenzene	mg/kg	0.01	30	10,000	9,300	14,000	0.08	0.08	0.04	< 0.01	< 0.01
Xylenes	mg/kg	0.05	8.8	110	140,000	210,000	0.7	0.65	0.21	< 0.05	< 0.05
C6 - C10 (less BTEX)	mg/kg	2.5	-	-	-	-	16	9	< 2.5	< 2.5	< 2.5
>C10-C16 Hydrocarbons	mg/kg	12	-	-	-	-	< 12	< 12	< 12	< 12	< 12
>C16-C21 Hydrocarbons	mg/kg	12	-	-	-	-	45	55	< 12	< 12	39
>C21-<C32 Hydrocarbons	mg/kg	12	-	-	-	-	150	260	65	81	150
Modified TPH	mg/kg	21	74 (Gasoline) 270 (Fuel Oil) 1,100 (Lube Oil)	870 (Gasoline) 4,000 (Fuel Oil) 10,000 (Lube Oil)	15,000 (Gasoline) 8,600 (Fuel Oil) 14,000 (Lube Oil)	22,000 (Gasoline) 13,000 (Fuel Oil) 21,000 (Lube Oil)	210	**320 (Fuel Oil)**	65	81	190
Reached Baseline at C32	mg/kg	N/A	NA	NA	NA	NA	No	No	No	No	No
Hydrocarbon Resemblance	mg/kg	N/A	NA	NA	NA	NA	PWFO.LO	PWFO.LO	LO	LO	WFO.LO

[1]PHRR: Petroleum Hydrocarbon Remediation Regulations (Prince Edward Island, Environmental Protection Act, 2015), Tier I Risk Based Screening Levels for Soil (residential and commercial)

[2]PHRR: Petroleum Hydrocarbon Remediation Regulations (Prince Edward Island, Environmental Protection Act, 2015), Tier II Pathway Specific Screening Levels for Soil, Soil Ingestion (residential and commercial / non-potable / coarse-grained)

BFD: Blind field duplicate

FO.LO: Fuel oil and lube oil fraction

LO: Lube oil

NA: Not applicable

PAH: Possible PAHs detected

PG: Possible gasoline fraction

PWFO: Possible weathered fuel oil fraction

RDL: Reportable detection limit

WFO: Weathered fuel oil fraction

< 12: Concentration is less than reportable detection limit of 12 mg/kg

-: No established guideline

Bold: Concentration exceeds Tier I RBSLs for residential land use

Bold: Concentration exceeds Tier I RBSLs for residential and commercial land use

TABLE 4: Polycyclic Aromatic Hydrocarbons in Shallow Soil (<1.0 m)

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter	UNITS	RDL	CCME CSQG		Shallow Soil Samples					
Sample ID					SS-01	SS-04	SS-05	SS-06	SS-07	SS-08
Depth (m)					0.25-0.51	0.36-0.50	0.20-0.38	0.27-0.43	0.46-0.55	0.45-0.55
Sample Date (Y/M/D)					2023-07-19	2023-07-19	2023-07-19	2023-07-19	2023-07-19	2023-07-19
RPC Sample ID			Residential/Parkland	Commercial	491916-01	491916-02	491916-03	491916-04	491916-05	491916-06
Environmental Health Guidelines Based on Non-Carcinogenic Effects of PAHs										
Naphthalene	mg/kg	0.01	0.6	22	0.51	0.25	0.34	0.29	**0.64**	0.41
Acenaphthylene	mg/kg	0.01	-	-	0.73	0.16	0.21	0.26	0.25	0.47
Acenaphthene	mg/kg	0.01	-	-	0.06	0.01	0.05	0.05	0.04	0.02
Fluorene	mg/kg	0.01	-	-	0.08	0.02	0.06	0.05	0.04	0.03
Phenanthrene	mg/kg	0.01	5	50	1.1	0.41	0.76	0.91	0.62	0.45
Anthracene	mg/kg	0.01	2.5	32	0.55	0.13	0.22	0.3	0.2	0.26
Fluoranthene	mg/kg	0.01	50	180	3.1	0.94	1.1	2.1	1.7	1.7
Pyrene	mg/kg	0.01	10	100	3.3	0.87	1	2.1	1.6	1.6
Benz(a)anthracene	mg/kg	0.01	1	10	**1.7**	0.48	0.65	**1.3**	0.99	1
Chrysene/Triphenylene	mg/kg	0.01	-	-	1.5	0.44	0.58	1.2	0.92	1
Benzo(b+j)fluoranthene	mg/kg	0.01	1	10	**2.8**	0.84	**1.3**	**2.5**	**2.2**	**3.1**
Benzo(k)fluoranthene	mg/kg	0.01	1	10	0.96	0.3	0.47	0.75	0.73	0.92
Benzo(e)pyrene	mg/kg	0.01	-	-	1.5	0.43	0.65	1.3	1.1	1.6
Benzo(a)pyrene	mg/kg	0.01	20	72	1.8	0.49	0.77	1.5	1.4	1.9
Indeno(1,2,3-c,d)pyrene	mg/kg	0.01	1	10	1	0.33	0.53	**1.1**	0.82	**1.4**
Benzo(g,h,i)perylene	mg/kg	0.01	-	-	1.1	0.27	0.4	0.89	0.64	1.2
Dibenz(a,h)anthracene	mg/kg	0.01	1	10	0.45	0.08	0.15	0.32	0.21	0.34
Human Health Guidelines Based on Carcinogenic Effects of PAHs										
Benzo[a]pyrene Total Potency Equivalents (B[a]P TPE)	mg/kg	NA	5.3	5.3	2.92	0.77	1.22	2.41	2.10	2.90

CCME: Canadian Council of Ministers of the Environment

CSQG: Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health (residential/parkland and commercial)

BFD: Blind field duplicate

LD: Laboratory duplicate

NA: Not applicable

RDL: Reportable detection limit

< 0.01: Concentration is less than reportable detection limit of 0.01 mg/kg

-: No established guideline

Bold: Concentration exceeds CCME CSQG for residential/parkland land use

Bold: Concentration exceeds CCME CSQG for residential/parkland and commercial land use

TABLE 4 (Cont'd): Polycyclic Aromatic Hydrocarbons in Shallow Soil (<1.0 m)
Phase II Environmental Site Assessment
Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter	UNITS	RDL	CCME CSQG		Shallow Soil Samples					
Sample ID					SS-09	SS-19 (BFD of SS-09)	SS-13	SS-16	SS-17	SS-18 (BFD of SS-17)
Depth (m)					0.45-0.60	0.45-0.60	0.45-0.59	0.25-0.44	0.32-0.39	0.32-0.39
Sample Date (Y/M/D)					2023-07-20	2023-07-20	2023-07-21	2023-07-21	2023-07-25	2023-07-25
RPC Sample ID			Residential/Parkland	Commercial	491916-07	491916-12	491916-08	491916-09	491916-10	491916-11
Environmental Health Guidelines Based on Non-Carcinogenic Effects of PAHs										
Naphthalene	mg/kg	0.01	0.6	22	0.08	0.12	< 0.01	**13**	0.14	0.13
Acenaphthylene	mg/kg	0.01	-	-	0.06	0.05	0.03	0.27	0.01	0.01
Acenaphthene	mg/kg	0.01	-	-	0.13	0.07	0.02	14	0.06	0.09
Fluorene	mg/kg	0.01	-	-	0.09	0.05	0.01	10	0.04	0.05
Phenanthrene	mg/kg	0.01	5	50	0.72	0.43	0.14	**73**	0.47	0.72
Anthracene	mg/kg	0.01	2.5	32	0.21	0.16	0.06	**14**	0.07	0.09
Fluoranthene	mg/kg	0.01	50	180	1.3	1	0.42	**79**	0.51	0.91
Pyrene	mg/kg	0.01	10	100	1.1	0.91	0.42	**61**	0.41	0.74
Benz(a)anthracene	mg/kg	0.01	1	10	0.58	0.53	0.2	**29**	0.2	0.35
Chrysene/Triphenylene	mg/kg	0.01	-	-	0.59	0.41	0.2	24	0.17	0.34
Benzo(b+j)fluoranthene	mg/kg	0.01	1	10	0.73	0.7	0.42	**33**	0.27	0.47
Benzo(k)fluoranthene	mg/kg	0.01	1	10	0.25	0.24	0.13	**13**	0.1	0.18
Benzo(e)pyrene	mg/kg	0.01	-	-	0.39	0.37	0.25	15	0.15	0.24
Benzo(a)pyrene	mg/kg	0.01	20	72	0.55	0.55	0.25	**29**	0.19	0.34
Indeno(1,2,3-c,d)pyrene	mg/kg	0.01	1	10	0.21	0.21	0.17	**14**	0.1	0.14
Benzo(g,h,i)perylene	mg/kg	0.01	-	-	0.19	0.2	0.19	12	0.09	0.13
Dibenz(a,h)anthracene	mg/kg	0.01	1	10	0.05	0.05	0.03	**3.3**	0.02	0.03
Human Health Guidelines Based on Carcinogenic Effects of PAHs										
Benzo[a]pyrene Total Potency Equivalents (B[a]P TPE)	mg/kg	NA	5.3	5.3	0.78	0.77	0.38	**41.56**	0.28	0.49

CCME: Canadian Council of Ministers of the Environment

CSQG: Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health (residential/parkland and commercial)

BFD: Blind field duplicate

LD: Laboratory duplicate

NA: Not applicable

RDL: Reportable detection limit

< 0.01: Concentration is less than reportable detection limit of 0.01 mg/kg

-: No established guideline

Bold: Concentration exceeds CCME CSQG for residential/parkland land use

Bold: Concentration exceeds CCME CSQG for residential/parkland and commercial land use

TABLE 4 (Cont'd): Polycyclic Aromatic Hydrocarbons in Shallow Soil (<1.0 m)
Phase II Environmental Site Assessment
Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Depth (m)* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	CCME CSQG		Shallow Soil Samples		
					SS-21	SS-21, LD	SS-23
					0.41-0.61	0.41-0.61	0.13-0.46
					2023-07-21	2023-07-21	2023-07-21
			Residential/Parkland	Commercial	491916-13	491916-13	491916-14
Environmental Health Guidelines Based on Non-Carcinogenic Effects of PAHs							
Naphthalene	mg/kg	0.01	0.6	22	0.01	0.01	0.02
Acenaphthylene	mg/kg	0.01	-	-	0.01	0.02	< 0.01
Acenaphthene	mg/kg	0.01	-	-	0.01	0.02	0.07
Fluorene	mg/kg	0.01	-	-	< 0.01	0.01	0.05
Phenanthrene	mg/kg	0.01	5	50	0.07	0.1	0.52
Anthracene	mg/kg	0.01	2.5	32	0.02	0.03	0.1
Fluoranthene	mg/kg	0.01	50	180	0.16	0.22	0.81
Pyrene	mg/kg	0.01	10	100	0.15	0.2	0.68
Benz(a)anthracene	mg/kg	0.01	1	10	0.09	0.13	0.34
Chrysene/Triphenylene	mg/kg	0.01	-	-	0.09	0.09	0.29
Benzo(b+j)fluoranthene	mg/kg	0.01	1	10	0.18	0.22	0.49
Benzo(k)fluoranthene	mg/kg	0.01	1	10	0.06	0.07	0.16
Benzo(e)pyrene	mg/kg	0.01	-	-	0.11	0.12	0.26
Benzo(a)pyrene	mg/kg	0.01	20	72	0.13	0.17	0.41
Indeno(1,2,3-c,d)pyrene	mg/kg	0.01	1	10	0.09	0.11	0.23
Benzo(g,h,i)perylene	mg/kg	0.01	-	-	0.09	0.1	0.21
Dibenz(a,h)anthracene	mg/kg	0.01	1	10	0.02	0.02	0.05
Human Health Guidelines Based on Carcinogenic Effects of PAHs							
Benzo[a]pyrene Total Potency Equivalents (B[a]P TPE)	mg/kg	NA	5.3	5.3	0.19	0.24	0.59

CCME: Canadian Council of Ministers of the Environment

CSQG: Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health (residential/parkland and commercial)

BFD: Blind field duplicate

LD: Laboratory duplicate

NA: Not applicable

RDL: Reportable detection limit

< 0.01: Concentration is less than reportable detection limit of 0.01 mg/kg

-: No established guideline

Bold: Concentration exceeds CCME CSQG for residential/parkland land use

Bold: Concentration exceeds CCME CSQG for residential/parkland and commercial land use

TABLE 5: Metals in Soil

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Depth (m)* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	CCME CSQG		CCME CSQG (Check Values) Soil Ingestion/Soil Contact*		Soil Samples			
							BH23-02, SA2	BH23-22, SA1	BH23-23, SA1	MW23-02, SA1
							0.61-1.22	1.83-2.44	1.83-2.44	1.22-1.83
							2023-08-03	2023-07-24	2023-07-24	2023-07-18
			Residential/Parkland	Commercial	Residential/Parkland	Commercial	493176-1	491969-19	491969-20	491990-03
Aluminum	mg/kg	1	-	-			9280	9640	5550	10800
Antimony	mg/kg	0.1	20	40			4.1	0.2	0.1	0.7
Arsenic	mg/kg	1	12	12	12/17	12/26	**29**	2	2	**13**
Barium	mg/kg	1	500	2,000			196	33	17	138
Beryllium	mg/kg	0.1	4	8			0.7	0.5	0.3	0.6
Bismuth	mg/kg	1	-	-			< 1	< 1	< 1	< 1
Boron	mg/kg	1	-	-			7	3	2	4
Cadmium	mg/kg	0.01	10	22			0.14	0.01	< 0.01	0.25
Calcium	mg/kg	50	-	-			7200	370	230	1520
Chromium	mg/kg	1	64	87			31	20	13	24
Cobalt	mg/kg	0.1	50	300			8.6	7.3	5	8
Copper	mg/kg	1	63	91	1100/63	4000/91	**88**	8	5	28
Iron	mg/kg	20	-	-			48100	21000	14200	24300
Lead	mg/kg	0.1	140	260	140/300	260/600	**894**	5.6	4.2	138
Lithium	mg/kg	0.1	-	-			19.4	25.4	15.9	27.3
Magnesium	mg/kg	10	-	-			3180	3680	2250	3760
Manganese	mg/kg	1	-	-			396	424	512	327
Molybdenum	mg/kg	0.1	10	40			5	0.3	0.2	0.9
Nickel	mg/kg	1	45	89			34	17	11	27
Potassium	mg/kg	20	-	-			1020	1530	840	1430
Rubidium	mg/kg	0.1	-	-			8.7	10.4	5.9	10.7
Selenium	mg/kg	1	1	2.9	80/1	125/2.9	< 1	**2**	1	**2**
Silver	mg/kg	0.1	20	40			0.6	< 0.1	< 0.1	0.1
Sodium	mg/kg	50	-	-			480	770	980	100
Strontium	mg/kg	1	-	-			35	4	3	17
Tellurium	mg/kg	0.1	-	-			< 0.1	< 0.1	< 0.1	< 0.1
Thallium	mg/kg	0.1	1	1			0.3	< 0.1	< 0.1	0.3
Tin	mg/kg	1	50	300			**251**	< 1	< 1	5
Uranium	mg/kg	0.1	23	33			1	0.6	0.5	0.6
Vanadium	mg/kg	1	130	130			27	13	9	57
Zinc	mg/kg	1	250	410	10,000/250	16,000/410	**753**	33	22	163

CCME: Canadian Council of Ministers of the Environment

CSQG: Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health (residential/parkland and commercial)

*Soil Ingestion/Soil Contact (Human Health/Environmental Health)

RDL: Reportable detection limit

< 1: Concentration is less than reportable detection limit of 1 mg/kg

-: No established guideline

Bold: Concentration exceeds CCME CSQG for residential/parkland land use

Bold: Concentration exceeds CCME CSQG for residential/parkland and commercial land use

TABLE 5 (Cont'd): Metals in Soil

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Depth (m)* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	CCME CSQG		CCME CSQG (Check Values) Soil Ingestion/Soil Contact*		Soil Samples			
							MW23-03, SA2	MW23-04, SA2	MW23-18, SA1	MW23-19, SA1
							1.22-1.83	1.22-1.83	1.22-1.83	0.61-1.22
							2023-07-18	2023-07-18	2023-07-24	2023-07-24
			Residential/Parkland	Commercial	Residential/Parkland	Commercial	491990-05	491990-06	491990-24	491990-26
Aluminum	mg/kg	1	-	-			10000	10000	8280	6720
Antimony	mg/kg	0.1	20	40			0.5	0.4	0.2	0.3
Arsenic	mg/kg	1	12	12	12/17	12/26	4	8	2	6
Barium	mg/kg	1	500	2,000			40	55	30	27
Beryllium	mg/kg	0.1	4	8			0.5	0.5	0.5	0.5
Bismuth	mg/kg	1	-	-			< 1	< 1	< 1	< 1
Boron	mg/kg	1	-	-			4	4	3	2
Cadmium	mg/kg	0.01	10	22			0.05	0.56	0.01	0.12
Calcium	mg/kg	50	-	-			1220	10800	310	5760
Chromium	mg/kg	1	64	87			20	19	18	13
Cobalt	mg/kg	0.1	50	300			8.4	8.1	7.1	5.5
Copper	mg/kg	1	63	91	1100/63	4000/91	21	38	7	13
Iron	mg/kg	20	-	-			24600	25600	18900	15000
Lead	mg/kg	0.1	140	260	140/300	260/600	22.3	79.6	5.3	28.2
Lithium	mg/kg	0.1	-	-			27.4	25.5	25.9	12.8
Magnesium	mg/kg	10	-	-			4290	8220	3490	4720
Manganese	mg/kg	1	-	-			582	486	515	392
Molybdenum	mg/kg	0.1	10	40			0.7	1.6	0.2	0.6
Nickel	mg/kg	1	45	89			20	19	16	12
Potassium	mg/kg	20	-	-			1660	1210	1350	700
Rubidium	mg/kg	0.1	-	-			11.8	10.3	10.3	4.9
Selenium	mg/kg	1	1	2.9	80/1	125/2.9	1	1	**2**	1
Silver	mg/kg	0.1	20	40			< 0.1	< 0.1	< 0.1	< 0.1
Sodium	mg/kg	50	-	-			80	380	310	200
Strontium	mg/kg	1	-	-			8	17	4	8
Tellurium	mg/kg	0.1	-	-			< 0.1	< 0.1	< 0.1	< 0.1
Thallium	mg/kg	0.1	1	1			< 0.1	0.1	< 0.1	< 0.1
Tin	mg/kg	1	50	300			1	10	< 1	< 1
Uranium	mg/kg	0.1	23	33			0.7	0.7	0.6	0.6
Vanadium	mg/kg	1	130	130			17	23	12	37
Zinc	mg/kg	1	250	410	10,000/250	16,000/410	53	201	32	**346**

CCME: Canadian Council of Ministers of the Environment

CSQG: Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health (residential/parkland and commercial)

*Soil Ingestion/Soil Contact (Human Health/Environmental Health)

RDL: Reportable detection limit

< 1: Concentration is less than reportable detection limit of 1 mg/kg

-: No established guideline

Bold: Concentration exceeds CCME CSQG for residential/parkland land use

Bold: Concentration exceeds CCME CSQG for residential/parkland and commercial land use

TABLE 5 (Cont'd): Metals in Soil

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Depth (m)* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	CCME CSQG		CCME CSQG (Check Values) Soil Ingestion/Soil Contact*		Soil Samples MW23-20, SA1 / 1.83-2.44 / 2023-07-24 / 491990-27
			Residential/Parkland	Commercial	Residential/Parkland	Commercial	
Aluminum	mg/kg	1	-	-			8750
Antimony	mg/kg	0.1	20	40			0.2
Arsenic	mg/kg	1	12	12	12/17	12/26	3
Barium	mg/kg	1	500	2,000			23
Beryllium	mg/kg	0.1	4	8			0.5
Bismuth	mg/kg	1	-	-			< 1
Boron	mg/kg	1	-	-			3
Cadmium	mg/kg	0.01	10	22			0.04
Calcium	mg/kg	50	-	-			1180
Chromium	mg/kg	1	64	87			16
Cobalt	mg/kg	0.1	50	300			6.7
Copper	mg/kg	1	63	91	1100/63	4000/91	9
Iron	mg/kg	20	-	-			19100
Lead	mg/kg	0.1	140	260	140/300	260/600	12.1
Lithium	mg/kg	0.1	-	-			22.8
Magnesium	mg/kg	10	-	-			3160
Manganese	mg/kg	1	-	-			301
Molybdenum	mg/kg	0.1	10	40			0.4
Nickel	mg/kg	1	45	89			15
Potassium	mg/kg	20	-	-			1270
Rubidium	mg/kg	0.1	-	-			8.9
Selenium	mg/kg	1	1	2.9	80/1	125/2.9	1
Silver	mg/kg	0.1	20	40			< 0.1
Sodium	mg/kg	50	-	-			200
Strontium	mg/kg	1	-	-			5
Tellurium	mg/kg	0.1	-	-			< 0.1
Thallium	mg/kg	0.1	1	1			< 0.1
Tin	mg/kg	1	50	300			< 1
Uranium	mg/kg	0.1	23	33			0.6
Vanadium	mg/kg	1	130	130			13
Zinc	mg/kg	1	250	410	10,000/250	16,000/410	36

CCME: Canadian Council of Ministers of the Environment

CSQG: Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health (residential/parkland and commercial)

*Soil Ingestion/Soil Contact (Human Health/Environmental Health)

RDL: Reportable detection limit

< 1: Concentration is less than reportable detection limit of 1 mg/kg

-: No established guideline

Bold: Concentration exceeds CCME CSQG for residential/parkland land use

Bold: Concentration exceeds CCME CSQG for residential/parkland and commercial land use

TABLE 6: Petroleum Hydrocarbons in Soil (Tier I RBSLs)

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Depth (m)* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	PHRR Tier I RBSLs - Soil		Soil Samples						
					BH23-02, SA1	BH23-04, SA2	BH23-05, SA1	BH23-06, SA1	BH23-07, SA1	BH23-08, SA1	BH23-09, SA1
					0.61-1.22	1.83-2.44	3.96-4.57	2.13-2.74	2.13-2.74	1.22-1.83	1.83-2.44
					2023-07-19	2023-07-19	2023-07-20	2023-07-20	2023-07-20	2023-07-20	2023-07-20
			Residential	Commercial	491969-01	491969-02	491969-03	491969-04	491969-05	491969-06	491969-07
Benzene	mg/kg	0.005	0.099	2.5	0.064	< 0.005	< 0.005	**1**	0.06	< 0.005	< 0.005
Toluene	mg/kg	0.05	77	10,000	0.12	< 0.05	< 0.05	< 0.2*	< 0.1*	< 0.05	< 0.05
Ethylbenzene	mg/kg	0.01	30	10,000	0.01	< 0.01	< 0.01	**150**	30	< 0.01	< 0.01
Xylenes	mg/kg	0.05	8.8	110	0.09	< 0.05	< 0.05	**190**	**45**	< 0.05	< 0.05
C6 - C10 (less BTEX)	mg/kg	2.5	-	-	< 2.5	< 2.5	< 2.5	3100	850	< 2.5	< 2.5
>C10-C16 Hydrocarbons	mg/kg	12	-	-	< 12	< 12	< 12	720	910	< 12	< 12
>C16-C21 Hydrocarbons	mg/kg	12	-	-	< 12	< 12	< 12	250	350	< 12	< 12
>C21-<C32 Hydrocarbons	mg/kg	12	-	-	33	< 12	24	70	99	< 12	< 12
Modified TPH	mg/kg	21	74 (Gasoline) 270 (Fuel Oil) 1,100 (Lube Oil)	870 (Gasoline) 4,000 (Fuel Oil) 10,000 (Lube Oil)	33	< 21	24	**4100 (Gasoline)**	**2200 (Gasoline)**	< 21	< 21
Return to Baseline at C32	NA	NA	NA	NA	Yes	Yes	No	Yes	Yes	Yes	Yes
Resemblance	NA	NA	NA	NA	PLO	ND	PLO	PG.WFO	PG.WFO	ND	ND

PHRR: Petroleum Hydrocarbon Remediation Regulations (Prince Edward Island, Environmental Protection Act, 2015), Tier I Risk Based Screening Levels for Soil (residential and commercial / non-potable / coarse-grained)

FO: Fuel oil

FO.LO: Fuel oil and lube oil fraction

LD: Laboratory duplicate

LO: Lube oil

NA: Not applicable

ND: Not detected

OP: One product (unidentified)

PAH: Possible PAHs detected

PG: Possible gasoline fraction

PLO: Possible lube oil fraction

PWFO: Possible weathered fuel oil fraction

RDL: Reportable detection limit

WFO: Weathered fuel oil fraction

< 0.005: Concentration is less than reportable detection limit of 0.005 mg/kg

* Elevated RDL's due to sample dilution

-: No established guideline

Bold: Concentration exceeds Tier I RBSLs for residential land use

Bold: Concentration exceeds Tier I RBSLs for residential and commercial land use

TABLE 6 (Cont'd): Petroleum Hydrocarbons in Soil (Tier I RBSLs)

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Depth (m)* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	PHRR Tier I RBSLs - Soil		Soil Samples						
					BH23-10, SA1	BH23-11, SA1	BH23-13, SA1	BH23-14, SA1	BH23-15, SA1	BH23-16, SA1	BH23-17, SA1
					1.83-2.44	1.83-2.44	1.52-2.13	1.52-2.13	1.52-2.13	1.52-2.13	1.83-2.44
					2023-07-20	2023-07-21	2023-07-21	2023-07-21	2023-07-21	2023-07-21	2023-07-21
			Residential	Commercial	491969-08	491969-09	491969-10	491969-11	491969-12	491969-13	491969-14
Benzene	mg/kg	0.005	0.099	2.5	0.08	< 0.005	**2.7**	< 0.005	< 0.005	< 0.005	< 0.005
Toluene	mg/kg	0.05	77	10,000	1.90	< 0.05	25	< 0.05	< 0.05	< 0.05	< 0.05
Ethylbenzene	mg/kg	0.01	30	10,000	3.5	< 0.01	17	< 0.01	< 0.01	< 0.01	< 0.01
Xylenes	mg/kg	0.05	8.8	110	**24**	< 0.05	**120**	< 0.05	< 0.05	< 0.05	< 0.05
C6 - C10 (less BTEX)	mg/kg	2.5	-	-	1100	< 2.5	2600	< 2.5	< 2.5	< 2.5	< 2.5
>C10-C16 Hydrocarbons	mg/kg	12	-	-	2400	< 12	7000	< 12	< 12	< 12	< 12
>C16-C21 Hydrocarbons	mg/kg	12	-	-	1000	< 12	3800	< 12	< 12	< 12	< 12
>C21-<C32 Hydrocarbons	mg/kg	12	-	-	6400	< 12	23000	< 12	< 12	< 12	< 12
Modified TPH	mg/kg	21	74 (Gasoline) 270 (Fuel Oil) 1,100 (Lube Oil)	870 (Gasoline) 4,000 (Fuel Oil) 10,000 (Lube Oil)	**11000 (Fuel Oil)**	< 21	**36000 (Fuel Oil)**	< 21	< 21	< 21	< 21
Return to Baseline at C32	NA	NA	NA	NA	No	Yes	Yes	Yes	Yes	Yes	Yes
Resemblance	NA	NA	NA	NA	OP.FO.LO	ND	OP.FO.LO	ND	ND	ND	ND

PHRR: Petroleum Hydrocarbon Remediation Regulations (Prince Edward Island, Environmental Protection Act, 2015), Tier I Risk Based Screening Levels for Soil (residential and commercial / non-potable / coarse-grained)

FO: Fuel oil

FO.LO: Fuel oil and lube oil fraction

LD: Laboratory duplicate

LO: Lube oil

NA: Not applicable

ND: Not detected

OP: One product (unidentified)

PAH: Possible PAHs detected

PG: Possible gasoline fraction

PLO: Possible lube oil fraction

PWFO: Possible weathered fuel oil fraction

RDL: Reportable detection limit

WFO: Weathered fuel oil fraction

< 0.005: Concentration is less than reportable detection limit of 0.005 mg/kg

* Elevated RDL's due to sample dilution

-: No established guideline

Bold: Concentration exceeds Tier I RBSLs for residential land use

Bold: Concentration exceeds Tier I RBSLs for residential and commercial land use

TABLE 6 (Cont'd): Petroleum Hydrocarbons in Soil (Tier I RBSLs)

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Depth (m)* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	PHRR Tier I RBSLs - Soil		Soil Samples						
					BH23-17, SA1, LD	BH23-18, SA1	BH23-19, SA1	BH23-20, SA1	BH23-21, SA1	BH23-22, SA1	BH23-22, SA1, LD
					1.83-2.44	1.83-2.44	1.83-2.44	1.83-2.44	1.52-2.13	1.83-2.44	1.83-2.44
					2023-07-21	2023-07-21	2023-07-21	2023-07-21	2023-07-21	2023-07-24	2023-07-24
			Residential	Commercial	491969-14	491969-15	491969-16	491969-17	491969-18	491969-19	491969-19
Benzene	mg/kg	0.005	0.099	2.5	< 0.005	< 0.005	**0.17**	< 0.005	< 0.005	< 0.005	< 0.005
Toluene	mg/kg	0.05	77	10,000	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Ethylbenzene	mg/kg	0.01	30	10,000	< 0.01	< 0.01	3.50	< 0.01	< 0.01	< 0.01	< 0.01
Xylenes	mg/kg	0.05	8.8	110	< 0.05	< 0.05	5.2	< 0.05	< 0.05	< 0.05	< 0.05
C6 - C10 (less BTEX)	mg/kg	2.5	-	-	< 2.5	< 2.5	190	< 2.5	< 2.5	< 2.5	< 2.5
>C10-C16 Hydrocarbons	mg/kg	12	-	-	< 12	< 12	1600	14	< 12	< 12	< 12
>C16-C21 Hydrocarbons	mg/kg	12	-	-	< 12	< 12	850	< 12	< 12	< 12	< 12
>C21-<C32 Hydrocarbons	mg/kg	12	-	-	< 12	< 12	93	< 12	< 12	13	19
Modified TPH	mg/kg	21	74 (Gasoline) 270 (Fuel Oil) 1,100 (Lube Oil)	870 (Gasoline) 4,000 (Fuel Oil) 10,000 (Lube Oil)	< 21	< 21	**2700 (Fuel Oil)**	< 21	< 21	< 21	< 21
Return to Baseline at C32	NA	NA	NA	NA	Yes	Yes	Yes	Yes	Yes	No	No
Resemblance	NA	NA	NA	NA	ND	ND	WFO	ND	ND	ND	ND

PHRR: Petroleum Hydrocarbon Remediation Regulations (Prince Edward Island, Environmental Protection Act, 2015), Tier I Risk Based Screening Levels for Soil (residential and commercial / non-potable / coarse-grained)

FO: Fuel oil

FO.LO: Fuel oil and lube oil fraction

LD: Laboratory duplicate

LO: Lube oil

NA: Not applicable

ND: Not detected

OP: One product (unidentified)

PAH: Possible PAHs detected

PG: Possible gasoline fraction

PLO: Possible lube oil fraction

PWFO: Possible weathered fuel oil fraction

RDL: Reportable detection limit

WFO: Weathered fuel oil fraction

< 0.005: Concentration is less than reportable detection limit of 0.005 mg/kg

* Elevated RDL's due to sample dilution

-: No established guideline

Bold: Concentration exceeds Tier I RBSLs for residential land use

Bold: Concentration exceeds Tier I RBSLs for residential and commercial land use

TABLE 6 (Cont'd): Petroleum Hydrocarbons in Soil (Tier I RBSLs)

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Depth (m)* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	PHRR Tier I RBSLs - Soil		Soil Samples				
					BH23-23, SA1	BH23-24, SA1	BH23-25, SA1	BH23-26, SA1	BH23-27, SA1
					1.83-2.44	1.22-1.83	1.83-2.44	0.61-1.22	1.83-2.44
					2023-07-24	2023-07-25	2023-07-25	2023-07-25	2023-07-25
			Residential	Commercial	491969-20	491969-21	491969-22	491969-23	491969-24
Benzene	mg/kg	0.005	0.099	2.5	< 0.005	< 0.005	< 0.005	0.021	< 0.005
Toluene	mg/kg	0.05	77	10,000	< 0.05	< 0.05	< 0.05	0.1	< 0.05
Ethylbenzene	mg/kg	0.01	30	10,000	< 0.01	< 0.01	< 0.01	0.04	< 0.01
Xylenes	mg/kg	0.05	8.8	110	< 0.05	< 0.05	< 0.05	0.2	< 0.05
C6 - C10 (less BTEX)	mg/kg	2.5	-	-	< 2.5	< 2.5	< 2.5	4	< 2.5
>C10-C16 Hydrocarbons	mg/kg	12	-	-	< 12	< 12	< 12	100	< 12
>C16-C21 Hydrocarbons	mg/kg	12	-	-	< 12	< 12	< 12	440	< 12
>C21-<C32 Hydrocarbons	mg/kg	12	-	-	< 12	< 12	< 12	2900	< 12
Modified TPH	mg/kg	21	74 (Gasoline) 270 (Fuel Oil) 1,100 (Lube Oil)	870 (Gasoline) 4,000 (Fuel Oil) 10,000 (Lube Oil)	< 21	< 21	< 21	**3400 (Fuel Oil)**	< 21
Return to Baseline at C32	NA	NA	NA	NA	Yes	Yes	Yes	No	Yes
Resemblance	NA	NA	NA	NA	ND	ND	ND	WFO.LO	ND

PHRR: Petroleum Hydrocarbon Remediation Regulations (Prince Edward Island, Environmental Protection Act, 2015), Tier I Risk Based Screening Levels for Soil (residential and commercial / non-potable / coarse-grained)

FO: Fuel oil

FO.LO: Fuel oil and lube oil fraction

LD: Laboratory duplicate

LO: Lube oil

NA: Not applicable

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OP: One product (unidentified)

PAH: Possible PAHs detected

PG: Possible gasoline fraction

PLO: Possible lube oil fraction

PWFO: Possible weathered fuel oil fraction

RDL: Reportable detection limit

WFO: Weathered fuel oil fraction

< 0.005: Concentration is less than reportable detection limit of 0.005 mg/kg

* Elevated RDL's due to sample dilution

-: No established guideline

Bold: Concentration exceeds Tier I RBSLs for residential land use

Bold: Concentration exceeds Tier I RBSLs for residential and commercial land use

TABLE 6 (Cont'd): Petroleum Hydrocarbons in Soil (Tier I RBSLs)

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Depth (m)* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	PHRR Tier I RBSLs - Soil		Soil Samples						
					MW23-01, SA1	MW23-01, SA2	MW23-02, SA1	MW23-02, SA2	MW23-03, SA2	MW23-04, SA2	MW23-05, SA2
					0.61-1.22	0.61-1.22	1.22-1.83	1.22-1.83	1.22-1.83	1.22-1.83	1.22-1.83
					2023-07-18	2023-07-18	2023-07-18	2023-07-18	2023-07-18	2023-07-18	2023-07-18
			Residential	Commercial	491990-01	491990-02	491990-03	491990-04	491990-05	491990-06	491990-07
Benzene	mg/kg	0.005	0.099	2.5	0.02	< 0.005	0.097	**0.75**	< 0.005	0.007	< 0.005
Toluene	mg/kg	0.05	77	10,000	< 0.05	< 0.05	0.39	1.7	< 0.05	< 0.05	< 0.05
Ethylbenzene	mg/kg	0.01	30	10,000	0.03	< 0.01	0.03	0.09	< 0.01	< 0.01	< 0.01
Xylenes	mg/kg	0.05	8.8	110	0.2	< 0.05	0.27	1	< 0.05	< 0.05	< 0.05
C6 - C10 (less BTEX)	mg/kg	2.5	-	-	2.5	< 2.5	< 2.5	3.8	< 2.5	< 2.5	< 2.5
>C10-C16 Hydrocarbons	mg/kg	12	-	-	< 12	< 12	< 12	< 12	16	< 12	< 12
>C16-C21 Hydrocarbons	mg/kg	12	-	-	25	< 12	< 12	< 12	18	< 12	< 12
>C21-<C32 Hydrocarbons	mg/kg	12	-	-	73	< 12	33	25	59	37	19
Modified TPH	mg/kg	21	74 (Gasoline) 270 (Fuel Oil) 1,100 (Lube Oil)	870 (Gasoline) 4,000 (Fuel Oil) 10,000 (Lube Oil)	100 (Lube Oil)	< 21	33	29	93 (Lube Oil)	37	< 21
Return to Baseline at C32	NA	NA	NA	NA	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Resemblance	NA	NA	NA	NA	PAH.PLO	ND	PLO	PG.PAH.PLO	PAH.PLO	LO	ND

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NA: Not applicable

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PAH: Possible PAHs detected

PG: Possible gasoline fraction

PLO: Possible lube oil fraction

PWFO: Possible weathered fuel oil fraction

RDL: Reportable detection limit

WFO: Weathered fuel oil fraction

< 0.005: Concentration is less than reportable detection limit of 0.005 mg/kg

* Elevated RDL's due to sample dilution

-: No established guideline

Bold: Concentration exceeds Tier I RBSLs for residential land use

Bold: Concentration exceeds Tier I RBSLs for residential and commercial land use

TABLE 6 (Cont'd): Petroleum Hydrocarbons in Soil (Tier I RBSLs)

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Depth (m)* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	PHRR Tier I RBSLs - Soil		Soil Samples						
					MW23-05, SA3	MW23-06, SA1	MW23-06, SA1, LD	MW23-07, SA1	MW23-08, SA1	MW23-08, SA2	MW23-09, SA1
					1.22-1.83	1.83-2.44	1.83-2.44	1.83-2.44	1.83-2.44	1.83-2.44	1.83-2.44
					2023-07-18	2023-07-18	2023-07-18	2023-07-19	2023-07-19	2023-07-19	2023-07-19
			Residential	Commercial	491990-08	491990-09	491990-09	491990-10	491990-11	491990-12	491990-13
Benzene	mg/kg	0.005	0.099	2.5	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Toluene	mg/kg	0.05	77	10,000	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Ethylbenzene	mg/kg	0.01	30	10,000	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Xylenes	mg/kg	0.05	8.8	110	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
C6 - C10 (less BTEX)	mg/kg	2.5	-	-	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5
>C10-C16 Hydrocarbons	mg/kg	12	-	-	< 12	< 12	< 12	< 12	< 12	< 12	< 12
>C16-C21 Hydrocarbons	mg/kg	12	-	-	< 12	< 12	< 12	< 12	< 12	< 12	< 12
>C21-<C32 Hydrocarbons	mg/kg	12	-	-	< 12	< 12	< 12	< 12	< 12	26	< 12
Modified TPH	mg/kg	21	74 (Gasoline) 270 (Fuel Oil) 1,100 (Lube Oil)	870 (Gasoline) 4,000 (Fuel Oil) 10,000 (Lube Oil)	< 21	< 21	< 21	< 21	< 21	26	< 21
Return to Baseline at C32	NA	NA	NA	NA	Yes	Yes	Yes	Yes	Yes	No	Yes
Resemblance	NA	NA	NA	NA	ND	ND	ND	ND	ND	LO	ND

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PAH: Possible PAHs detected

PG: Possible gasoline fraction

PLO: Possible lube oil fraction

PWFO: Possible weathered fuel oil fraction

RDL: Reportable detection limit

WFO: Weathered fuel oil fraction

< 0.005: Concentration is less than reportable detection limit of 0.005 mg/kg

* Elevated RDL's due to sample dilution

-: No established guideline

Bold: Concentration exceeds Tier I RBSLs for residential land use

Bold: Concentration exceeds Tier I RBSLs for residential and commercial land use

TABLE 6 (Cont'd): Petroleum Hydrocarbons in Soil (Tier I RBSLs)

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Depth (m)* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	PHRR Tier I RBSLs - Soil		Soil Samples						
					MW23-10, SA1	MW23-11, SA3	MW23-12, SA3	MW23-13, SA1	MW23-13, SA3	MW23-13, SA4	MW23-14, SA1
					1.83-2.44	2.44-3.05	1.83-2.44	1.22-1.83	2.44-3.05	2.44-3.05	1.83-2.44
					2023-07-19	2023-07-19	2023-07-19	2023-07-20	2023-07-20	2023-07-20	2023-07-20
			Residential	Commercial	491990-14	491990-15	491990-16	491990-17	491420-1	491420-2	491990-18
Benzene	mg/kg	0.005	0.099	2.5	< 0.005	< 0.1*	< 0.005	< 0.005	< 0.005	0.011	< 0.005
Toluene	mg/kg	0.05	77	10,000	< 0.05	< 0.1*	< 0.05	< 0.05	< 0.05	0.06	< 0.05
Ethylbenzene	mg/kg	0.01	30	10,000	< 0.01	12	< 0.01	< 0.01	< 0.01	0.02	< 0.01
Xylenes	mg/kg	0.05	8.8	110	< 0.05	**13**	< 0.05	< 0.05	< 0.05	0.08	< 0.05
C6 - C10 (less BTEX)	mg/kg	2.5	-	-	< 2.5	710	< 2.5	< 2.5	< 2.5	17	< 2.5
>C10-C16 Hydrocarbons	mg/kg	12	-	-	< 12	2500	< 12	< 12	140	350	< 12
>C16-C21 Hydrocarbons	mg/kg	12	-	-	< 12	1100	< 12	15	250	630	< 12
>C21-<C32 Hydrocarbons	mg/kg	12	-	-	< 12	260	< 12	74	990	2400	< 12
Modified TPH	mg/kg	21	74 (Gasoline) 270 (Fuel Oil) 1,100 (Lube Oil)	870 (Gasoline) 4,000 (Fuel Oil) 10,000 (Lube Oil)	< 21	**4600 (Fuel Oil)**	< 21	89 (Lube Oil)	**1400 (Fuel Oil)**	**3400 (Fuel Oil)**	< 21
Return to Baseline at C32	NA	NA	NA	NA	Yes	Yes	Yes	No	No	No	Yes
Resemblance	NA	NA	NA	NA	ND	WFO	ND	PAH.LO	WFO.LO	WFO.LO	ND

PHRR: Petroleum Hydrocarbon Remediation Regulations (Prince Edward Island, Environmental Protection Act, 2015), Tier I Risk Based Screening Levels for Soil (residential and commercial / non-potable / coarse-grained)

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LO: Lube oil

NA: Not applicable

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PAH: Possible PAHs detected

PG: Possible gasoline fraction

PLO: Possible lube oil fraction

PWFO: Possible weathered fuel oil fraction

RDL: Reportable detection limit

WFO: Weathered fuel oil fraction

< 0.005: Concentration is less than reportable detection limit of 0.005 mg/kg

* Elevated RDL's due to sample dilution

-: No established guideline

Bold: Concentration exceeds Tier I RBSLs for residential land use

Bold: Concentration exceeds Tier I RBSLs for residential and commercial land use

TABLE 6 (Cont'd): Petroleum Hydrocarbons in Soil (Tier I RBSLs)

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Depth (m)* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	PHRR Tier I RBSLs - Soil		Soil Samples						
					MW23-15, SA1	MW23-15, SA2	MW23-16, SA1	MW23-17, SA1	MW23-17, SA2	MW23-18, SA1	MW23-18, SA2
					1.83-2.44	1.83-2.44	1.22-1.83	1.83-2.44	1.83-2.44	1.22-1.83	1.22-1.83
					2023-07-20	2023-07-20	2023-07-20	2023-07-21	2023-07-21	2023-07-24	2023-07-24
			Residential	Commercial	491990-19	491990-20	491990-21	491990-22	491990-23	491990-24	491990-25
Benzene	mg/kg	0.005	0.099	2.5	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Toluene	mg/kg	0.05	77	10,000	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Ethylbenzene	mg/kg	0.01	30	10,000	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Xylenes	mg/kg	0.05	8.8	110	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
C6 - C10 (less BTEX)	mg/kg	2.5	-	-	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5
>C10-C16 Hydrocarbons	mg/kg	12	-	-	< 12	< 12	< 12	< 12	< 12	< 12	< 12
>C16-C21 Hydrocarbons	mg/kg	12	-	-	< 12	18	< 12	< 12	< 12	< 12	< 12
>C21-<C32 Hydrocarbons	mg/kg	12	-	-	53	130	< 12	< 12	< 12	< 12	< 12
Modified TPH	mg/kg	21	74 (Gasoline) 270 (Fuel Oil) 1,100 (Lube Oil)	870 (Gasoline) 4,000 (Fuel Oil) 10,000 (Lube Oil)	53	150 (Fuel Oil)	< 21	< 21	< 21	< 21	< 21
Return to Baseline at C32	NA	NA	NA	NA	No	No	Yes	Yes	Yes	Yes	Yes
Resemblance	NA	NA	NA	NA	LO	WFO.LO	ND	ND	ND	ND	ND

PHRR: Petroleum Hydrocarbon Remediation Regulations (Prince Edward Island, Environmental Protection Act, 2015), Tier I Risk Based Screening Levels for Soil (residential and commercial / non-potable / coarse-grained)

FO: Fuel oil

FO.LO: Fuel oil and lube oil fraction

LD: Laboratory duplicate

LO: Lube oil

NA: Not applicable

ND: Not detected

OP: One product (unidentified)

PAH: Possible PAHs detected

PG: Possible gasoline fraction

PLO: Possible lube oil fraction

PWFO: Possible weathered fuel oil fraction

RDL: Reportable detection limit

WFO: Weathered fuel oil fraction

< 0.005: Concentration is less than reportable detection limit of 0.005 mg/kg

* Elevated RDL's due to sample dilution

-: No established guideline

Bold: Concentration exceeds Tier I RBSLs for residential land use

Bold: Concentration exceeds Tier I RBSLs for residential and commercial land use

TABLE 6 (Cont'd): Petroleum Hydrocarbons in Soil (Tier I RBSLs)

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Depth (m)* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	PHRR Tier I RBSLs - Soil		Soil Samples			
					MW23-19, SA1	MW23-20, SA1	MW23-21, SA2	MW23-22, SA1
					0.61-1.22	1.83-2.44	1.22-1.83	1.22-1.83
					2023-07-24	2023-07-24	2023-07-24	2023-07-24
			Residential	Commercial	491990-26	491990-27	491990-28	491990-29
Benzene	mg/kg	0.005	0.099	2.5	0.087	0.009	< 0.005	< 0.005
Toluene	mg/kg	0.05	77	10,000	0.12	< 0.05	< 0.05	< 0.05
Ethylbenzene	mg/kg	0.01	30	10,000	0.07	< 0.01	< 0.01	< 0.01
Xylenes	mg/kg	0.05	8.8	110	0.36	0.05	< 0.05	< 0.05
C6 - C10 (less BTEX)	mg/kg	2.5	-	-	10	< 2.5	< 2.5	< 2.5
>C10-C16 Hydrocarbons	mg/kg	12	-	-	28	< 12	< 12	< 12
>C16-C21 Hydrocarbons	mg/kg	12	-	-	43	< 12	< 12	< 12
>C21-<C32 Hydrocarbons	mg/kg	12	-	-	240	67	< 12	< 12
Modified TPH	mg/kg	21	74 (Gasoline) 270 (Fuel Oil) 1,100 (Lube Oil)	870 (Gasoline) 4,000 (Fuel Oil) 10,000 (Lube Oil)	**320 (Fuel Oil)**	67	< 21	< 21
Return to Baseline at C32	NA	NA	NA	NA	No	No	Yes	Yes
Resemblance	NA	NA	NA	NA	WFO.PAH.LO	LO	ND	ND

PHRR: Petroleum Hydrocarbon Remediation Regulations (Prince Edward Island, Environmental Protection Act, 2015), Tier I Risk Based Screening Levels for Soil (residential and commercial / non-potable / coarse-grained)

FO: Fuel oil

FO.LO: Fuel oil and lube oil fraction

LD: Laboratory duplicate

LO: Lube oil

NA: Not applicable

ND: Not detected

OP: One product (unidentified)

PAH: Possible PAHs detected

PG: Possible gasoline fraction

PLO: Possible lube oil fraction

PWFO: Possible weathered fuel oil fraction

RDL: Reportable detection limit

WFO: Weathered fuel oil fraction

< 0.005: Concentration is less than reportable detection limit of 0.005 mg/kg

* Elevated RDL's due to sample dilution

-: No established guideline

Bold: Concentration exceeds Tier I RBSLs for residential land use

Bold: Concentration exceeds Tier I RBSLs for residential and commercial land use

TABLE 7: Petroleum Hydrocarbons in Surface Soil (Tier I SESLs - Plants/Invertebrates)

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Depth (m)* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	PHRR Tier I SESLs - Plants/Invertebrates Direct Soil Contact		Soil Samples			
					BH23-02, SA1	BH23-08, SA1	BH23-24, SA1	BH23-26, SA1
					0.61-1.22	1.22-1.83	1.22-1.83	0.61-1.22
					2023-07-26	2023-07-20	2023-07-25	2023-07-25
			Residential	Commercial	491969-01	491969-06	491969-21	491969-23
Benzene	mg/kg	0.005	31	180	0.064	< 0.005	< 0.005	0.021
Toluene	mg/kg	0.05	75	250	0.12	< 0.05	< 0.05	0.1
Ethylbenzene	mg/kg	0.01	55	300	0.01	< 0.01	< 0.01	0.04
Xylenes	mg/kg	0.05	95	350	0.09	< 0.05	< 0.05	0.2
F1 (C6 - C10)	mg/kg	2.5	210	320	< 2.5	< 2.5	< 2.5	4
F2 (C10-C16)	mg/kg	12	150	260	< 12	< 12	< 12	100
F3 (C16-C32)	mg/kg	12	300	1700	33	< 12	< 12	**3840**
Return to Baseline at C32	NA	NA	NA	NA	Yes	Yes	Yes	No
Resemblance	NA	NA	NA	NA	PLO	ND	ND	WFO.LO

PHRR: Petroleum Hydrocarbon Remediation Regulations (Prince Edward Island, Environmental Protection Act, 2015), Tier I Soil Ecological Screening Levels for the Protection of Plants and Soil Invertebrates, Direct Soil Contact (residential and commercial / non-potable / coarse-grained)

FO: Fuel oil

LD: Laboratory duplicate

LO: Lube oil

NA: Not applicable

ND: Not detected

OP: One product (unidentified)

PG: Possible gasoline fraction

PLO: Possible lube oil fraction

PWFO: Possible weathered fuel oil fraction

RDL: Reportable detection limit

WFO: Weathered fuel oil fraction

< 0.05: Concentration is less than reportable detection limit of 0.05 mg/kg

-: No established guideline

Bold: Concentration exceeds Tier I SESLs for residential land use

Bold: Concentration exceeds Tier I SESLs for residential and commercial land use

TABLE 7 (Cont'd): Petroleum Hydrocarbons in Surface Soil (Tier I SESLs - Plants/Invertebrates)

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Depth (m)* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	PHRR Tier I SESLs - Plants/Invertebrates Direct Soil Contact		Soil Samples							
					MW23-01, SA1	MW23-01, SA2	MW23-02, SA1	MW23-02, SA2	MW23-03, SA2	MW23-04, SA2	MW23-05, SA2	MW23-05, SA3
					0.61-1.22	0.61-1.22	1.22-1.83	1.22-1.83	1.22-1.83	1.22-1.83	1.22-1.83	1.22-1.83
					2023-07-18	2023-07-18	2023-07-18	2023-07-18	2023-07-18	2023-07-18	2023-07-18	2023-07-18
			Residential	Commercial	491990-01	491990-02	491990-03	491990-04	491990-05	491990-06	491990-07	491990-08
Benzene	mg/kg	0.005	31	180	0.02	< 0.005	0.097	0.75	< 0.005	0.007	< 0.005	< 0.005
Toluene	mg/kg	0.05	75	250	< 0.05	< 0.05	0.39	1.7	< 0.05	< 0.05	< 0.05	< 0.05
Ethylbenzene	mg/kg	0.01	55	300	0.03	< 0.01	0.03	0.09	< 0.01	< 0.01	< 0.01	< 0.01
Xylenes	mg/kg	0.05	95	350	0.2	< 0.05	0.27	1	< 0.05	< 0.05	< 0.05	< 0.05
F1 (C6 - C10)	mg/kg	2.5	210	320	2.5	< 2.5	< 2.5	3.8	< 2.5	< 2.5	< 2.5	< 2.5
F2 (C10-C16)	mg/kg	12	150	260	< 12	< 12	< 12	< 12	16	< 12	< 12	< 12
F3 (C16-C32)	mg/kg	12	300	1700	98	< 12	33	25	77	37	19	< 12
Return to Baseline at C32	NA	NA	NA	NA	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Resemblance	NA	NA	NA	NA	PAH.PLO	ND	PLO	PG.PAH.PLO	PAH.PLO	LO	ND	ND

PHRR: Petroleum Hydrocarbon Remediation Regulations (Prince Edward Island, Environmental Protection Act, 2015), Tier I Soil Ecological Screening Levels for the Protection of Plants and Soil Invertebrates, Direct Soil Contact (residential and commercial / non-potable / coarse-grained)

FO: Fuel oil

LD: Laboratory duplicate

LO: Lube oil

NA: Not applicable

ND: Not detected

OP: One product (unidentified)

PG: Possible gasoline fraction

PLO: Possible lube oil fraction

PWFO: Possible weathered fuel oil fraction

RDL: Reportable detection limit

WFO: Weathered fuel oil fraction

< 0.05: Concentration is less than reportable detection limit of 0.05 mg/kg

-: No established guideline

Bold: Concentration exceeds Tier I SESLs for residential land use

Bold: Concentration exceeds Tier I SESLs for residential and commercial land use

TABLE 7 (Cont'd): Petroleum Hydrocarbons in Surface Soil (Tier I SESLs - Plants/Invertebrates)

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Depth (m)* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	PHRR Tier I SESLs - Plants/Invertebrates Direct Soil Contact		Soil Samples						
					MW23-13, SA1	MW23-16, SA1	MW23-18, SA1	MW23-18, SA2	MW23-19, SA1	MW23-21, SA2	MW23-22, SA1
					1.22-1.83	1.22-1.83	1.22-1.83	1.22-1.83	0.61-1.22	1.22-1.83	1.22-1.83
					2023-07-20	2023-07-20	2023-07-24	2023-07-24	2023-07-24	2023-07-24	2023-07-24
			Residential	Commercial	491990-17	491990-21	491990-24	491990-25	491990-26	491990-28	491990-29
Benzene	mg/kg	0.005	31	180	< 0.005	< 0.005	< 0.005	< 0.005	0.087	< 0.005	< 0.005
Toluene	mg/kg	0.05	75	250	< 0.05	< 0.05	< 0.05	< 0.05	0.12	< 0.05	< 0.05
Ethylbenzene	mg/kg	0.01	55	300	< 0.01	< 0.01	< 0.01	< 0.01	0.07	< 0.01	< 0.01
Xylenes	mg/kg	0.05	95	350	< 0.05	< 0.05	< 0.05	< 0.05	0.36	< 0.05	< 0.05
F1 (C6 - C10)	mg/kg	2.5	210	320	< 2.5	< 2.5	< 2.5	< 2.5	10	< 2.5	< 2.5
F2 (C10-C16)	mg/kg	12	150	260	< 12	< 12	< 12	< 12	28	< 12	< 12
F3 (C16-C32)	mg/kg	12	300	1700	89	< 12	< 12	< 12	283	< 12	< 12
Return to Baseline at C32	NA	NA	NA	NA	No	Yes	Yes	Yes	No	Yes	Yes
Resemblance	NA	NA	NA	NA	PAH.LO	ND	ND	ND	WFO.PAH.LO	ND	ND

PHRR: Petroleum Hydrocarbon Remediation Regulations (Prince Edward Island, Environmental Protection Act, 2015), Tier I Soil Ecological Screening Levels for the Protection of Plants and Soil Invertebrates, Direct Soil Contact (residential and commercial / non-potable / coarse-grained)

FO: Fuel oil

LD: Laboratory duplicate

LO: Lube oil

NA: Not applicable

ND: Not detected

OP: One product (unidentified)

PG: Possible gasoline fraction

PLO: Possible lube oil fraction

PWFO: Possible weathered fuel oil fraction

RDL: Reportable detection limit

WFO: Weathered fuel oil fraction

< 0.05: Concentration is less than reportable detection limit of 0.05 mg/kg

-: No established guideline

Bold: Concentration exceeds Tier I SESLs for residential land use

Bold: Concentration exceeds Tier I SESLs for residential and commercial land use

TABLE 8: Polycyclic Aromatic Hydrocarbons in Soil
Phase II Environmental Site Assessment
Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter	UNITS	RDL	CCME CSQG		CCME CSQG (Check Values)		Soil Samples			
Sample ID							BH23-02, SA1	BH23-22, SA1	BH23-22, SA1, LD	BH23-23, SA1
Depth (m)							0.61-1.22	1.83-2.44	1.83-2.44	1.83-2.44
Sample Date (Y/M/D)					Soil contact/Soil and Food Ingestion*		2023-07-26	2023-07-24	2023-07-24	2023-07-24
RPC Sample ID			Residential/Parkland	Commercial	Residential/Parkland	Commercial	491969-01	491969-19	491969-19	491969-20
Environmental Health Guidelines Based on Non-Carcinogenic Effects of PAHs										
Naphthalene	mg/kg	0.01	0.6	22			0.04	< 0.01	< 0.01	< 0.01
Acenaphthylene	mg/kg	0.01	-	-			0.08	< 0.01	< 0.01	< 0.01
Acenaphthene	mg/kg	0.01	-	-			< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	mg/kg	0.01	-	-			0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	mg/kg	0.01	5	50			0.15	< 0.01	< 0.01	< 0.01
Anthracene	mg/kg	0.01	2.5	32			0.10	< 0.01	< 0.01	< 0.01
Fluoranthene	mg/kg	0.01	50	180			0.89	< 0.01	< 0.01	< 0.01
Pyrene	mg/kg	0.01	10	100			0.76	< 0.01	< 0.01	< 0.01
Benz(a)anthracene	mg/kg	0.01	1	10			0.46	< 0.01	< 0.01	< 0.01
Chrysene/Triphenylene	mg/kg	0.01	-	-			0.46	< 0.01	< 0.01	< 0.01
Benzo(b+j)fluoranthene	mg/kg	0.01	1	10	NC/6.2	NC/-	0.65	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	mg/kg	0.01	1	10			0.20	< 0.01	< 0.01	< 0.01
Benzo(e)pyrene	mg/kg	0.01	-	-			0.28	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	mg/kg	0.01	20	72			0.34	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-c,d)pyrene	mg/kg	0.01	1	10			0.22	< 0.01	< 0.01	< 0.01
Benzo(g,h,i)perylene	mg/kg	0.01	-	-			0.20	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	mg/kg	0.01	1	10			0.05	< 0.01	< 0.01	< 0.01
Human Health Guidelines Based on Carcinogenic Effects of PAHs										
Benzo[a]pyrene Total Potency Equivalents (B[a]P TPE)	mg/kg	NA	5.3	5.3			0.55	0.01	0.01	0.01

CCME: Canadian Council of Ministers of the Environment

CSQG: Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health - Polycyclic Aromatic Hydrocarbons (residential/parkland and commercial)

*Soil contact/Soil and Food Ingestion (Human Health/Environmental Health)

Guidelines are for Benzo[b]fluoranthene, table results are for Benzo(b+j)fluoranthene

LD: Laboratory duplicate

NA: Not applicable

NC: Not calculated

RDL: Reportable detection limit

< 0.01: Concentration is less than reportable detection limit of 0.01 mg/kg

-: No established guideline

Bold: Concentration exceeds CCME CSQG for residential/parkland land use

Bold: Concentration exceeds CCME CSQG for residential/parkland and commercial land use

TABLE 8 (Cont'd): Polycyclic Aromatic Hydrocarbons in Soil
Phase II Environmental Site Assessment
Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / Sample ID / Depth (m) / Sample Date (Y/M/D) / RPC Sample ID	UNITS	RDL	CCME CSQG		CCME CSQG (Check Values)		Soil Samples			
							MW23-02, SA1	MW23-03, SA2	MW23-04, SA2	MW23-05, SA2
							1.22-1.83	1.22-1.83	1.22-1.83	1.22-1.83
					Soil contact/Soil and Food Ingestion*		2023-07-18	2023-07-18	2023-07-18	2023-07-18
			Residential/Parkland	Commercial	Residential/Parkland	Commercial	491990-03	491990-05	491990-06	491990-07
Environmental Health Guidelines Based on Non-Carcinogenic Effects of PAHs										
Naphthalene	mg/kg	0.01	0.6	22			0.03	0.36	0.03	< 0.01
Acenaphthylene	mg/kg	0.01	-	-			0.02	0.16	0.02	< 0.01
Acenaphthene	mg/kg	0.01	-	-			0.02	0.01	< 0.01	< 0.01
Fluorene	mg/kg	0.01	-	-			0.02	0.02	< 0.01	< 0.01
Phenanthrene	mg/kg	0.01	5	50			0.25	0.41	0.07	0.01
Anthracene	mg/kg	0.01	2.5	32			0.07	0.17	0.03	< 0.01
Fluoranthene	mg/kg	0.01	50	180			0.39	0.78	0.15	0.02
Pyrene	mg/kg	0.01	10	100			0.36	0.69	0.14	0.02
Benz(a)anthracene	mg/kg	0.01	1	10			0.22	0.45	0.09	0.01
Chrysene/Triphenylene	mg/kg	0.01	-	-			0.16	0.37	0.08	0.01
Benzo(b+j)fluoranthene	mg/kg	0.01	1	10	NC/6.2	NC/-	0.28	0.80	0.15	0.01
Benzo(k)fluoranthene	mg/kg	0.01	1	10			0.09	0.24	0.04	< 0.01
Benzo(e)pyrene	mg/kg	0.01	-	-			0.16	0.38	0.08	< 0.01
Benzo(a)pyrene	mg/kg	0.01	20	72			0.25	0.53	0.11	0.01
Indeno(1,2,3-c,d)pyrene	mg/kg	0.01	1	10			0.12	0.34	0.08	< 0.01
Benzo(g,h,i)perylene	mg/kg	0.01	-	-			0.11	0.28	0.08	< 0.01
Dibenz(a,h)anthracene	mg/kg	0.01	1	10			0.03	0.08	0.02	< 0.01
Human Health Guidelines Based on Carcinogenic Effects of PAHs										
Benzo[a]pyrene Total Potency Equivalents (B[a]P TPE)	mg/kg	NA	5.3	5.3			0.35	0.80	0.17	0.07

CCME: Canadian Council of Ministers of the Environment

CSQG: Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health - Polycyclic Aromatic Hydrocarbons (residential/parkland and commercial)

*Soil contact/Soil and Food Ingestion (Human Health/Environmental Health)

Guidelines are for Benzo[b]fluoranthene, table results are for Benzo(b+j)fluoranthene

LD: Laboratory duplicate

NA: Not applicable

NC: Not calculated

RDL: Reportable detection limit

< 0.01: Concentration is less than reportable detection limit of 0.01 mg/kg

-: No established guideline

Bold: Concentration exceeds CCME CSQG for residential/parkland land use

Bold: Concentration exceeds CCME CSQG for residential/parkland and commercial land use

TABLE 8 (Cont'd): Polycyclic Aromatic Hydrocarbons in Soil
Phase II Environmental Site Assessment
Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Depth (m)* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	CCME CSQG		CCME CSQG (Check Values)		Soil Samples			
							MW23-14, SA1	MW23-15, SA1	MW23-18, SA1	MW23-19, SA1
							1.83-2.44	1.83-2.44	1.22-1.83	1.22-1.83
					Soil contact/Soil and Food Ingestion*		2023-07-20	2023-07-20	2023-07-24	2023-07-24
			Residential/Parkland	Commercial	Residential/Parkland	Commercial	491990-18	491990-19	491990-24	491990-26
Environmental Health Guidelines Based on Non-Carcinogenic Effects of PAHs										
Naphthalene	mg/kg	0.01	0.6	22			< 0.01	< 0.01	< 0.01	0.08
Acenaphthylene	mg/kg	0.01	-	-			< 0.01	< 0.01	< 0.01	0.09
Acenaphthene	mg/kg	0.01	-	-			< 0.01	< 0.01	< 0.01	0.13
Fluorene	mg/kg	0.01	-	-			< 0.01	< 0.01	< 0.01	0.13
Phenanthrene	mg/kg	0.01	5	50			0.03	0.02	< 0.01	1.00
Anthracene	mg/kg	0.01	2.5	32			< 0.01	< 0.01	< 0.01	0.45
Fluoranthene	mg/kg	0.01	50	180			0.04	0.03	< 0.01	1.70
Pyrene	mg/kg	0.01	10	100			0.04	0.02	< 0.01	1.50
Benz(a)anthracene	mg/kg	0.01	1	10			0.02	0.01	< 0.01	0.80
Chrysene/Triphenylene	mg/kg	0.01	-	-			0.02	< 0.01	< 0.01	0.67
Benzo(b+j)fluoranthene	mg/kg	0.01	1	10	NC/6.2	NC/-	0.03	0.01	< 0.01	**1.10**
Benzo(k)fluoranthene	mg/kg	0.01	1	10			< 0.01	< 0.01	< 0.01	0.34
Benzo(e)pyrene	mg/kg	0.01	-	-			0.02	0.01	< 0.01	0.64
Benzo(a)pyrene	mg/kg	0.01	20	72			0.02	< 0.01	< 0.01	0.80
Indeno(1,2,3-c,d)pyrene	mg/kg	0.01	1	10			0.01	< 0.01	< 0.01	0.51
Benzo(g,h,i)perylene	mg/kg	0.01	-	-			0.01	< 0.01	< 0.01	0.50
Dibenz(a,h)anthracene	mg/kg	0.01	1	10			< 0.01	< 0.01	< 0.01	0.12
Human Health Guidelines Based on Carcinogenic Effects of PAHs										
Benzo[a]pyrene Total Potency Equivalents (B[a]P TPE)	mg/kg	NA	5.3	5.3			0.08	0.11	0.12	1.21

CCME: Canadian Council of Ministers of the Environment

CSQG: Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health - Polycyclic Aromatic Hydrocarbons (residential/parkland and commercial)

*Soil contact/Soil and Food Ingestion (Human Health/Environmental Health)

Guidelines are for Benzo[b]fluoranthene, table results are for Benzo(b+j)fluoranthene

LD: Laboratory duplicate

NA: Not applicable

NC: Not calculated

RDL: Reportable detection limit

< 0.01: Concentration is less than reportable detection limit of 0.01 mg/kg

-: No established guideline

Bold: Concentration exceeds CCME CSQG for residential/parkland land use

Bold: Concentration exceeds CCME CSQG for residential/parkland and commercial land use

TABLE 8 (Cont'd): Polycyclic Aromatic Hydrocarbons in Soil
Phase II Environmental Site Assessment
Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Depth (m)* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	CCME CSQG		CCME CSQG (Check Values)		Soil Samples			
							MW23-20, SA1	MW23-21, SA2	MW23-22, SA1	MW23-22, SA1, LD
							1.83-2.44	1.22-1.83	1.22-1.83	1.22-1.83
					Soil contact/Soil and Food Ingestion*		2023-07-24	2023-07-24	2023-07-24	2023-07-24
			Residential/Parkland	Commercial	Residential/Parkland	Commercial	491990-27	491990-28	491990-29	491990-29
Environmental Health Guidelines Based on Non-Carcinogenic Effects of PAHs										
Naphthalene	mg/kg	0.01	0.6	22			0.02	< 0.01	< 0.01	< 0.01
Acenaphthylene	mg/kg	0.01	-	-			< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	mg/kg	0.01	-	-			< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	mg/kg	0.01	-	-			< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	mg/kg	0.01	5	50			0.04	< 0.01	< 0.01	0.01
Anthracene	mg/kg	0.01	2.5	32			0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	mg/kg	0.01	50	180			0.05	< 0.01	0.01	0.02
Pyrene	mg/kg	0.01	10	100			0.04	< 0.01	< 0.01	0.01
Benz(a)anthracene	mg/kg	0.01	1	10			0.03	< 0.01	< 0.01	< 0.01
Chrysene/Triphenylene	mg/kg	0.01	-	-			0.02	< 0.01	< 0.01	< 0.01
Benzo(b+j)fluoranthene	mg/kg	0.01	1	10	NC/6.2	NC/-	0.03	< 0.01	< 0.01	0.01
Benzo(k)fluoranthene	mg/kg	0.01	1	10			0.01	< 0.01	< 0.01	< 0.01
Benzo(e)pyrene	mg/kg	0.01	-	-			0.03	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	mg/kg	0.01	20	72			0.03	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-c,d)pyrene	mg/kg	0.01	1	10			0.02	< 0.01	< 0.01	< 0.01
Benzo(g,h,i)perylene	mg/kg	0.01	-	-			0.02	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	mg/kg	0.01	1	10			< 0.01	< 0.01	< 0.01	< 0.01
Human Health Guidelines Based on Carcinogenic Effects of PAHs										
Benzo[a]pyrene Total Potency Equivalents (B[a]P TPE)	mg/kg	NA	5.3	5.3			0.09	0.12	0.12	0.12

CCME: Canadian Council of Ministers of the Environment

CSQG: Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health - Polycyclic Aromatic Hydrocarbons (residential/parkland and commercial)

*Soil contact/Soil and Food Ingestion (Human Health/Environmental Health)

Guidelines are for Benzo[b]fluoranthene, table results are for Benzo(b+j)fluoranthene

LD: Laboratory duplicate

NA: Not applicable

NC: Not calculated

RDL: Reportable detection limit

< 0.01: Concentration is less than reportable detection limit of 0.01 mg/kg

-: No established guideline

Bold: Concentration exceeds CCME CSQG for residential/parkland land use

Bold: Concentration exceeds CCME CSQG for residential/parkland and commercial land use

TABLE 8 (Cont'd): Polycyclic Aromatic Hydrocarbons in Soil
Phase II Environmental Site Assessment
Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Depth (m)* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	CCME CSQG		CCME CSQG (Check Values)		Soil Samples			
							MW23-20, SA1	MW23-21, SA2	MW23-22, SA1	MW23-22, SA1, LD
							1.83-2.44	1.22-1.83	1.22-1.83	1.22-1.83
					Soil contact/Soil and Food Ingestion*		2023-07-24	2023-07-24	2023-07-24	2023-07-24
			Residential/Parkland	Commercial	Residential/Parkland	Commercial	491990-27	491990-28	491990-29	491990-29
Environmental Health Guidelines Based on Non-Carcinogenic Effects of PAHs										
Naphthalene	mg/kg	0.01	0.6	22			0.02	< 0.01	< 0.01	< 0.01
Acenaphthylene	mg/kg	0.01	-	-			< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	mg/kg	0.01	-	-			< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	mg/kg	0.01	-	-			< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	mg/kg	0.01	5	50			0.04	< 0.01	< 0.01	0.01
Anthracene	mg/kg	0.01	2.5	32			0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	mg/kg	0.01	50	180			0.05	< 0.01	0.01	0.02
Pyrene	mg/kg	0.01	10	100			0.04	< 0.01	< 0.01	0.01
Benz(a)anthracene	mg/kg	0.01	1	10			0.03	< 0.01	< 0.01	< 0.01
Chrysene/Triphenylene	mg/kg	0.01	-	-			0.02	< 0.01	< 0.01	< 0.01
Benzo(b+j)fluoranthene	mg/kg	0.01	1	10	NC/6.2	NC/-	0.03	< 0.01	< 0.01	0.01
Benzo(k)fluoranthene	mg/kg	0.01	1	10			0.01	< 0.01	< 0.01	< 0.01
Benzo(e)pyrene	mg/kg	0.01	-	-			0.03	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	mg/kg	0.01	20	72			0.03	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-c,d)pyrene	mg/kg	0.01	1	10			0.02	< 0.01	< 0.01	< 0.01
Benzo(g,h,i)perylene	mg/kg	0.01	-	-			0.02	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	mg/kg	0.01	1	10			< 0.01	< 0.01	< 0.01	< 0.01
Human Health Guidelines Based on Carcinogenic Effects of PAHs										
Benzo[a]pyrene Total Potency Equivalents (B[a]P TPE)	mg/kg	NA	5.3	5.3			0.09	0.12	0.12	0.12

CCME: Canadian Council of Ministers of the Environment

CSQG: Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health - Polycyclic Aromatic Hydrocarbons (residential/parkland and commercial)

*Soil contact/Soil and Food Ingestion (Human Health/Environmental Health)

Guidelines are for Benzo[b]fluoranthene, table results are for Benzo(b+j)fluoranthene

LD: Laboratory duplicate

NA: Not applicable

NC: Not calculated

RDL: Reportable detection limit

< 0.01: Concentration is less than reportable detection limit of 0.01 mg/kg

-: No established guideline

Bold: Concentration exceeds CCME CSQG for residential/parkland land use

Bold: Concentration exceeds CCME CSQG for residential/parkland and commercial land use

TABLE 9: Polychlorinated Biphenyls in Soil

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter					Soil Samples						
Sample ID	UNITS	RDL	CCME CSQG		BH23-02, SA1	BH23-22, SA1	BH23-23, SA1	MW23-18, SA1	MW23-19, SA1	MW23-20, SA1	MW23-20, SA1, LD
Depth (m)					0.61-1.22	1.83-2.44	1.83-2.44	1.22-1.83	0.61-1.22	1.83-2.44	1.83-2.44
Sample Date (Y/M/D)					2023-07-26	2023-07-24	2023-07-24	2023-07-24	2023-07-24	2023-07-24	2023-07-24
RPC Sample ID			Residential/Parkland	Commercial	491969-01	491969-19	491969-20	491990-24	491990-26	491990-27	491990-27
Total PCB	mg/kg	0.05	1.30	33	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Resemblance	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND

CCME: Canadian Council of Ministers of the Environment

CSQG: Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health (residential/parkland and commercial)

LD: Laboratory duplicate

NA: Not applicable

ND: Not detected

RDL: Reportable detection limit

< 0.05: Concentration is less than reportable detection limit of 0.05 mg/kg

Bold: Concentration exceeds CCME CSQG for residential/parkland land use

Bold: Concentration exceeds CCME CSQG for residential/parkland and commercial land use

TABLE 10: Volatile Organic Compounds in Soil

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter			CCME CSQG		Soil Samples						
Sample ID	UNITS	RDL			BH23-08, SA1	BH23-09, SA1	BH23-10, SA1	BH23-11, SA1	BH23-17, SA1	BH23-17, SA1, LD	BH23-18, SA1
Depth (m)					1.22-1.83	1.22-1.83	1.83-2.44	1.83-2.44	1.83-2.44	1.83-2.44	1.83-2.44
Sample Date (Y/M/D)					2023-07-20	2023-07-20	2023-07-20	2023-07-21	2023-07-21	2023-07-21	2023-07-21
RPC Sample ID			Residential/Parkland	Commercial	491969-06	491969-07	491969-08	491969-09	491969-14	491969-14	491969-15
Chloromethane	mg/kg	0.2	-	-	< 0.2	< 0.2	< 0.6	< 0.2	< 0.2	< 0.2	< 0.2
Vinyl Chloride	mg/kg	0.06	-	-	< 0.06	< 0.06	< 0.18	< 0.06	< 0.06	< 0.06	< 0.06
Bromomethane	mg/kg	0.2	-	-	< 0.2	< 0.2	< 0.6	< 0.2	< 0.2	< 0.2	< 0.2
Chloroethane	mg/kg	0.2	-	-	< 0.2	< 0.2	< 0.6	< 0.2	< 0.2	< 0.2	< 0.2
Trichlorofluoromethane	mg/kg	0.2	-	-	< 0.2	< 0.2	< 0.6	< 0.2	< 0.2	< 0.2	< 0.2
1,1-Dichloroethylene	mg/kg	0.04	-	-	< 0.04	< 0.04	< 0.12	< 0.04	< 0.04	< 0.04	< 0.04
Methylene Chloride	mg/kg	0.2	-	-	< 0.2	< 0.2	< 0.6	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichloroethylene (trans)	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.06	< 0.02	< 0.02	< 0.02	< 0.02
1,1-Dichloroethane	mg/kg	0.02	5	50	< 0.02	< 0.02	< 0.06	< 0.02	< 0.02	< 0.02	< 0.02
1,2-Dichloroethylylene (cis)	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.06	< 0.02	< 0.02	< 0.02	< 0.02
Bromochloromethane	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.06	< 0.02	< 0.02	< 0.02	< 0.02
Chloroform	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.06	< 0.02	< 0.02	< 0.02	< 0.02
1,1,1-Trichloroethane	mg/kg	0.02	5	50	< 0.02	< 0.02	< 0.06	< 0.02	< 0.02	< 0.02	< 0.02
Carbon Tetrachloride	mg/kg	0.04	-	-	< 0.04	< 0.04	< 0.12	< 0.04	< 0.04	< 0.04	< 0.04
Benzene	mg/kg	0.02	0.030	0.030	< 0.02	< 0.02	**0.08**	< 0.02	< 0.02	< 0.02	< 0.02
1,2-Dichloroethane	mg/kg	0.02	5	50	< 0.02	< 0.02	< 0.06	< 0.02	< 0.02	< 0.02	< 0.02
Trichloroethylene	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.06	< 0.02	< 0.02	< 0.02	< 0.02
1,2-Dichloropropane	mg/kg	0.02	5	50	< 0.02	< 0.02	< 0.06	< 0.02	< 0.02	< 0.02	< 0.02
Bromodichloromethane	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.06	< 0.02	< 0.02	< 0.02	< 0.02
1,3-Dichloropropylene (cis)	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.06	< 0.02	< 0.02	< 0.02	< 0.02
Toluene	mg/kg	0.02	0.37	0.37	< 0.02	< 0.02	**2.0**	< 0.02	< 0.02	< 0.02	< 0.02
1,3-Dichloropropylene (trans)	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.06	< 0.02	< 0.02	< 0.02	< 0.02
1,1,2-Trichloroethane	mg/kg	0.02	5	50	< 0.02	< 0.02	< 0.06	< 0.02	< 0.02	< 0.02	< 0.02
Tetrachloroethylene	mg/kg	0.02	-	-	< 0.02	< 0.02	0.7	< 0.02	< 0.02	< 0.02	< 0.02
Dibromochloromethane	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.06	< 0.02	< 0.02	< 0.02	< 0.02

CCME: Canadian Council of Ministers of the Environment

CSQG: Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health (residential/parkland and commercial)

LD: Laboratory duplicate

NA: Not applicable

RDL: Reportable detection limit

< 0.2: Concentration is less than reportable detection limit of 0.2 mg/kg

-: No established guideline

Bold: Concentration exceeds CCME CSQG for residential/parkland land use

Bold: Concentration exceeds CCME CSQG for residential/parkland and commercial land use

TABLE 10 (Cont'd): Volatile Organic Compounds in Soil

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter					Soil Samples						
Sample ID	UNITS	RDL	CCME CSQG		BH23-08, SA1	BH23-09, SA1	BH23-10, SA1	BH23-11, SA1	BH23-17, SA1	BH23-17, SA1, LD	BH23-18, SA1
Depth (m)					1.22-1.83	1.22-1.83	1.83-2.44	1.83-2.44	1.83-2.44	1.83-2.44	1.83-2.44
Sample Date (Y/M/D)					2023-07-20	2023-07-20	2023-07-20	2023-07-21	2023-07-21	2023-07-21	2023-07-21
RPC Sample ID			Residential/Parkland	Commercial	491969-06	491969-07	491969-08	491969-09	491969-14	491969-14	491969-15
1,2-Dibromoethane	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.06	< 0.02	< 0.02	< 0.02	< 0.02
Chlorobenzene	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.06	< 0.02	< 0.02	< 0.02	< 0.02
Ethylbenzene	mg/kg	0.02	0.082	0.082	< 0.02	< 0.02	**3.90**	< 0.02	< 0.02	< 0.02	< 0.02
m,p-Xylenes	mg/kg	0.02	-	-	< 0.02	< 0.02	15.00	< 0.02	< 0.02	< 0.02	< 0.02
o-Xylene	mg/kg	0.02	-	-	< 0.02	< 0.02	11.00	< 0.02	< 0.02	< 0.02	< 0.02
Styrene	mg/kg	0.02	5	50	< 0.02	< 0.02	< 0.06	< 0.02	< 0.02	< 0.02	< 0.02
Bromoform	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.06	< 0.02	< 0.02	< 0.02	< 0.02
1,1,2,2-Tetrachloroethane	mg/kg	0.02	5	50	< 0.02	< 0.02	< 0.06	< 0.02	< 0.02	< 0.02	< 0.02
1,3-Dichlorobenzene	mg/kg	0.02	1	10	< 0.02	< 0.02	< 0.06	< 0.02	< 0.02	< 0.02	< 0.02
1,4-Dichlorobenzene	mg/kg	0.02	1	10	< 0.02	< 0.02	< 0.06	< 0.02	< 0.02	< 0.02	< 0.02
1,2-Dichlorobenzene	mg/kg	0.02	1	10	< 0.02	< 0.02	< 0.06	< 0.02	< 0.02	< 0.02	< 0.02

CCME: Canadian Council of Ministers of the Environment

CSQG: Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health (residential/parkland and commercial)

LD: Laboratory duplicate

NA: Not applicable

RDL: Reportable detection limit

< 0.2: Concentration is less than reportable detection limit of 0.2 mg/kg

-: No established guideline

Bold: Concentration exceeds CCME CSQG for residential/parkland land use

Bold: Concentration exceeds CCME CSQG for residential/parkland and commercial land use

TABLE 10 (Cont'd): Volatile Organic Compounds in Soil

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter	UNITS	RDL	CCME CSQG		Soil Samples		
Sample ID					BH23-20, SA1	BH23-22, SA1	BH23-23, SA1
Depth (m)					1.83-2.44	1.83-2.44	1.83-2.44
Sample Date (Y/M/D)					2023-07-21	2023-07-24	2023-07-24
RPC Sample ID			Residential/Parkland	Commercial	491969-17	491969-19	491969-20
Chloromethane	mg/kg	0.2	-	-	< 0.2	< 0.2	< 0.2
Vinyl Chloride	mg/kg	0.06	-	-	< 0.06	< 0.06	< 0.06
Bromomethane	mg/kg	0.2	-	-	< 0.2	< 0.2	< 0.2
Chloroethane	mg/kg	0.2	-	-	< 0.2	< 0.2	< 0.2
Trichlorofluoromethane	mg/kg	0.2	-	-	< 0.2	< 0.2	< 0.2
1,1-Dichloroethylene	mg/kg	0.04	-	-	< 0.04	< 0.04	< 0.04
Methylene Chloride	mg/kg	0.2	-	-	< 0.2	< 0.2	< 0.2
1,2-Dichloroethylene (trans)	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.02
1,1-Dichloroethane	mg/kg	0.02	5	50	< 0.02	< 0.02	< 0.02
1,2-Dichloroethylylene (cis)	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.02
Bromochloromethane	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.02
Chloroform	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.02
1,1,1-Trichloroethane	mg/kg	0.02	5	50	< 0.02	< 0.02	< 0.02
Carbon Tetrachloride	mg/kg	0.04	-	-	< 0.04	< 0.04	< 0.04
Benzene	mg/kg	0.02	0.030	0.030	< 0.02	< 0.02	< 0.02
1,2-Dichloroethane	mg/kg	0.02	5	50	< 0.02	< 0.02	< 0.02
Trichloroethylene	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.02
1,2-Dichloropropane	mg/kg	0.02	5	50	< 0.02	< 0.02	< 0.02
Bromodichloromethane	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.02
1,3-Dichloropropylene (cis)	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.02
Toluene	mg/kg	0.02	0.37	0.37	< 0.02	< 0.02	< 0.02
1,3-Dichloropropylene (trans)	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.02
1,1,2-Trichloroethane	mg/kg	0.02	5	50	< 0.02	< 0.02	< 0.02
Tetrachloroethylene	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.02
Dibromochloromethane	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.02

CCME: Canadian Council of Ministers of the Environment

CSQG: Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health (residential/parkland and commercial)

LD: Laboratory duplicate

NA: Not applicable

RDL: Reportable detection limit

< 0.2: Concentration is less than reportable detection limit of 0.2 mg/kg

-: No established guideline

Bold: Concentration exceeds CCME CSQG for residential/parkland land use

Bold: Concentration exceeds CCME CSQG for residential/parkland and commercial land use

TABLE 10 (Cont'd): Volatile Organic Compounds in Soil

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Depth (m)* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	CCME CSQG		Soil Samples		
					BH23-20, SA1	BH23-22, SA1	BH23-23, SA1
					1.83-2.44	1.83-2.44	1.83-2.44
					2023-07-21	2023-07-24	2023-07-24
			Residential/Parkland	Commercial	491969-17	491969-19	491969-20
1,2-Dibromoethane	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.02
Chlorobenzene	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.02
Ethylbenzene	mg/kg	0.02	0.082	0.082	< 0.02	< 0.02	< 0.02
m,p-Xylenes	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.02
o-Xylene	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.02
Styrene	mg/kg	0.02	5	50	< 0.02	< 0.02	< 0.02
Bromoform	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.02
1,1,2,2-Tetrachloroethane	mg/kg	0.02	5	50	< 0.02	< 0.02	< 0.02
1,3-Dichlorobenzene	mg/kg	0.02	1	10	< 0.02	< 0.02	< 0.02
1,4-Dichlorobenzene	mg/kg	0.02	1	10	< 0.02	< 0.02	< 0.02
1,2-Dichlorobenzene	mg/kg	0.02	1	10	< 0.02	< 0.02	< 0.02

CCME: Canadian Council of Ministers of the Environment

CSQG: Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health (residential/parkland and commercial)

LD: Laboratory duplicate

NA: Not applicable

RDL: Reportable detection limit

< 0.2: Concentration is less than reportable detection limit of 0.2 mg/kg

-: No established guideline

Bold: Concentration exceeds CCME CSQG for residential/parkland land use

Bold: Concentration exceeds CCME CSQG for residential/parkland and commercial land use

TABLE 10 (Cont'd): Volatile Organic Compounds in Soil
Phase II Environmental Site Assessment
Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter	UNITS	RDL	CCME CSQG		Soil Samples						
Sample ID					MW23-06, SA1	MW23-06, SA1, LD	MW23-07, SA1	MW23-08, SA1	MW23-09, SA1	MW23-10, SA1	MW23-11, SA3
Depth (m)					1.83-2.44	1.83-2.44	1.83-2.44	1.83-2.44	1.83-2.44	1.83-2.44	2.44-3.05
Sample Date (Y/M/D)					2023-07-18	2023-07-18	2023-07-19	2023-07-19	2023-07-19	2023-07-19	2023-07-19
RPC Sample ID			Residential/Parkland	Commercial	491990-09	491990-09	491990-10	491990-11	491990-13	491990-14	491990-15
Chloromethane	mg/kg	0.2	-	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.8
Vinyl Chloride	mg/kg	0.06	-	-	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.2
Bromomethane	mg/kg	0.2	-	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.8
Chloroethane	mg/kg	0.2	-	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.8
Trichlorofluoromethane	mg/kg	0.2	-	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.8
1,1-Dichloroethylene	mg/kg	0.04	-	-	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.2
Methylene Chloride	mg/kg	0.2	-	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.8
1,2-Dichloroethylene (trans)	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.1
1,1-Dichloroethane	mg/kg	0.02	5	50	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.1
1,2-Dichloroethylylene (cis)	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.1
Bromochloromethane	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.1
Chloroform	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.1
1,1,1-Trichloroethane	mg/kg	0.02	5	50	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.1
Carbon Tetrachloride	mg/kg	0.04	-	-	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.2
Benzene	mg/kg	0.02	0.030	0.030	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.1
1,2-Dichloroethane	mg/kg	0.02	5	50	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.1
Trichloroethylene	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.1
1,2-Dichloropropane	mg/kg	0.02	5	50	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.1
Bromodichloromethane	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.1
1,3-Dichloropropylene (cis)	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.1
Toluene	mg/kg	0.02	0.37	0.37	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.1
1,3-Dichloropropylene (trans)	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.1
1,1,2-Trichloroethane	mg/kg	0.02	5	50	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.1
Tetrachloroethylene	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.1
Dibromochloromethane	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.1

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LD: Laboratory duplicate

NA: Not applicable

RDL: Reportable detection limit

< 0.2: Concentration is less than reportable detection limit of 0.2 mg/kg

-: No established guideline

Bold: Concentration exceeds CCME CSQG for residential/parkland land use

Bold: Concentration exceeds CCME CSQG for residential/parkland and commercial land use

TABLE 10 (Cont'd): Volatile Organic Compounds in Soil
Phase II Environmental Site Assessment
Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Depth (m)* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	CCME CSQG		Soil Samples						
					MW23-06, SA1	MW23-06, SA1, LD	MW23-07, SA1	MW23-08, SA1	MW23-09, SA1	MW23-10, SA1	MW23-11, SA3
					1.83-2.44	1.83-2.44	1.83-2.44	1.83-2.44	1.83-2.44	1.83-2.44	2.44-3.05
					2023-07-18	2023-07-18	2023-07-19	2023-07-19	2023-07-19	2023-07-19	2023-07-19
			Residential/Parkland	Commercial	491990-09	491990-09	491990-10	491990-11	491990-13	491990-14	491990-15
1,2-Dibromoethane	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.1
Chlorobenzene	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.1
Ethylbenzene	mg/kg	0.02	0.082	0.082	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	**13**
m,p-Xylenes	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	13
o-Xylene	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.20
Styrene	mg/kg	0.02	5	50	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.1
Bromoform	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.1
1,1,2,2-Tetrachloroethane	mg/kg	0.02	5	50	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.1
1,3-Dichlorobenzene	mg/kg	0.02	1	10	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.1
1,4-Dichlorobenzene	mg/kg	0.02	1	10	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.1
1,2-Dichlorobenzene	mg/kg	0.02	1	10	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.1

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LD: Laboratory duplicate

NA: Not applicable

RDL: Reportable detection limit

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-: No established guideline

Bold: Concentration exceeds CCME CSQG for residential/parkland land use

Bold: Concentration exceeds CCME CSQG for residential/parkland and commercial land use

TABLE 10 (Cont'd): Volatile Organic Compounds in Soil
Phase II Environmental Site Assessment
Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter	UNITS	RDL	CCME CSQG		Soil Samples						
Sample ID					MW23-12, SA3	MW23-13, SA1	MW23-13, SA3	MW23-14, SA1	MW23-15, SA1	MW23-16, SA1	MW23-17, SA1
Depth (m)					1.83-2.44	1.22-1.83	2.44-3.05	1.83-2.44	1.83-2.44	1.22-1.83	1.83-2.44
Sample Date (Y/M/D)					2023-07-19	2023-07-20	2023-07-20	2023-07-20	2023-07-20	2023-07-20	2023-07-21
RPC Sample ID			Residential/Parkland	Commercial	491990-16	491990-17	491420-1	491990-18	491990-19	491990-21	491990-22
Chloromethane	mg/kg	0.2	-	-	< 0.2	< 0.2	< 0.4	< 0.2	< 0.2	< 0.2	< 0.2
Vinyl Chloride	mg/kg	0.06	-	-	< 0.06	< 0.06	< 0.4	< 0.06	< 0.06	< 0.06	< 0.06
Bromomethane	mg/kg	0.2	-	-	< 0.2	< 0.2	< 0.4	< 0.2	< 0.2	< 0.2	< 0.2
Chloroethane	mg/kg	0.2	-	-	< 0.2	< 0.2	< 0.4	< 0.2	< 0.2	< 0.2	< 0.2
Trichlorofluoromethane	mg/kg	0.2	-	-	< 0.2	< 0.2	< 0.4	< 0.2	< 0.2	< 0.2	< 0.2
1,1-Dichloroethylene	mg/kg	0.04	-	-	< 0.04	< 0.04	< 0.1	< 0.04	< 0.04	< 0.04	< 0.04
Methylene Chloride	mg/kg	0.2	-	-	< 0.2	< 0.2	< 0.1	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichloroethylene (trans)	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02
1,1-Dichloroethane	mg/kg	0.02	5	50	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02
1,2-Dichloroethylylene (cis)	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02
Bromochloromethane	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02
Chloroform	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02
1,1,1-Trichloroethane	mg/kg	0.02	5	50	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02
Carbon Tetrachloride	mg/kg	0.04	-	-	< 0.04	< 0.04	< 0.1	< 0.04	< 0.04	< 0.04	< 0.04
Benzene	mg/kg	0.02	0.030	0.030	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02
1,2-Dichloroethane	mg/kg	0.02	5	50	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02
Trichloroethylene	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02
1,2-Dichloropropane	mg/kg	0.02	5	50	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02
Bromodichloromethane	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02
1,3-Dichloropropylene (cis)	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02
Toluene	mg/kg	0.02	0.37	0.37	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02
1,3-Dichloropropylene (trans)	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02
1,1,2-Trichloroethane	mg/kg	0.02	5	50	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02
Tetrachloroethylene	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02
Dibromochloromethane	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02

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LD: Laboratory duplicate

NA: Not applicable

RDL: Reportable detection limit

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-: No established guideline

Bold: Concentration exceeds CCME CSQG for residential/parkland land use

Bold: Concentration exceeds CCME CSQG for residential/parkland and commercial land use

TABLE 10 (Cont'd): Volatile Organic Compounds in Soil

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter	UNITS	RDL	CCME CSQG		Soil Samples						
Sample ID					MW23-12, SA3	MW23-13, SA1	MW23-13, SA3	MW23-14, SA1	MW23-15, SA1	MW23-16, SA1	MW23-17, SA1
Depth (m)					1.83-2.44	1.22-1.83	2.44-3.05	1.83-2.44	1.83-2.44	1.22-1.83	1.83-2.44
Sample Date (Y/M/D)					2023-07-19	2023-07-20	2023-07-20	2023-07-20	2023-07-20	2023-07-20	2023-07-21
RPC Sample ID			Residential/Parkland	Commercial	491990-16	491990-17	491420-1	491990-18	491990-19	491990-21	491990-22
1,2-Dibromoethane	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02
Chlorobenzene	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02
Ethylbenzene	mg/kg	0.02	0.082	0.082	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02
m,p-Xylenes	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02
o-Xylene	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02
Styrene	mg/kg	0.02	5	50	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02
Bromoform	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02
1,1,2,2-Tetrachloroethane	mg/kg	0.02	5	50	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02
1,3-Dichlorobenzene	mg/kg	0.02	1	10	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02
1,4-Dichlorobenzene	mg/kg	0.02	1	10	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02
1,2-Dichlorobenzene	mg/kg	0.02	1	10	< 0.02	< 0.02	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02

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LD: Laboratory duplicate

NA: Not applicable

RDL: Reportable detection limit

< 0.2: Concentration is less than reportable detection limit of 0.2 mg/kg

-: No established guideline

Bold: Concentration exceeds CCME CSQG for residential/parkland land use

Bold: Concentration exceeds CCME CSQG for residential/parkland and commercial land use

TABLE 10 (Cont'd): Volatile Organic Compounds in Soil

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter					Soil Samples				
Sample ID	UNITS	RDL	CCME CSQG		MW23-18, SA1	MW23-19, SA1	MW23-20, SA1	MW23-21, SA2	MW23-22, SA1
Depth (m)					1.22-1.83	0.61-1.22	1.83-2.44	1.22-1.83	1.22-1.83
Sample Date (Y/M/D)					2023-07-24	2023-07-24	2023-07-24	2023-07-24	2023-07-24
RPC Sample ID			Residential/Parkland	Commercial	491990-24	491990-26	491990-27	491990-28	491990-29
Chloromethane	mg/kg	0.2	-	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Vinyl Chloride	mg/kg	0.06	-	-	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06
Bromomethane	mg/kg	0.2	-	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chloroethane	mg/kg	0.2	-	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Trichlorofluoromethane	mg/kg	0.2	-	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
1,1-Dichloroethylene	mg/kg	0.04	-	-	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04
Methylene Chloride	mg/kg	0.2	-	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichloroethylene (trans)	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,1-Dichloroethane	mg/kg	0.02	5	50	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,2-Dichloroethylylene (cis)	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Bromochloromethane	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Chloroform	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,1,1-Trichloroethane	mg/kg	0.02	5	50	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Carbon Tetrachloride	mg/kg	0.04	-	-	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04
Benzene	mg/kg	0.02	0.030	0.030	< 0.02	**0.11**	< 0.02	< 0.02	< 0.02
1,2-Dichloroethane	mg/kg	0.02	5	50	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Trichloroethylene	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,2-Dichloropropane	mg/kg	0.02	5	50	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Bromodichloromethane	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,3-Dichloropropylene (cis)	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Toluene	mg/kg	0.02	0.37	0.37	< 0.02	0.17	0.03	< 0.02	< 0.02
1,3-Dichloropropylene (trans)	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,1,2-Trichloroethane	mg/kg	0.02	5	50	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Tetrachloroethylene	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Dibromochloromethane	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02

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LD: Laboratory duplicate

NA: Not applicable

RDL: Reportable detection limit

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-: No established guideline

Bold: Concentration exceeds CCME CSQG for residential/parkland land use

Bold: Concentration exceeds CCME CSQG for residential/parkland and commercial land use

TABLE 10 (Cont'd): Volatile Organic Compounds in Soil

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter	UNITS	RDL	CCME CSQG		Soil Samples				
Sample ID					MW23-18, SA1	MW23-19, SA1	MW23-20, SA1	MW23-21, SA2	MW23-22, SA1
Depth (m)					1.22-1.83	0.61-1.22	1.83-2.44	1.22-1.83	1.22-1.83
Sample Date (Y/M/D)					2023-07-24	2023-07-24	2023-07-24	2023-07-24	2023-07-24
RPC Sample ID			Residential/Parkland	Commercial	491990-24	491990-26	491990-27	491990-28	491990-29
1,2-Dibromoethane	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Chlorobenzene	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Ethylbenzene	mg/kg	0.02	0.082	0.082	< 0.02	0.08	< 0.02	< 0.02	< 0.02
m,p-Xylenes	mg/kg	0.02	-	-	< 0.02	0.30	0.03	< 0.02	< 0.02
o-Xylene	mg/kg	0.02	-	-	< 0.02	0.11	< 0.02	< 0.02	< 0.02
Styrene	mg/kg	0.02	5	50	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Bromoform	mg/kg	0.02	-	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,1,2,2-Tetrachloroethane	mg/kg	0.02	5	50	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,3-Dichlorobenzene	mg/kg	0.02	1	10	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,4-Dichlorobenzene	mg/kg	0.02	1	10	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,2-Dichlorobenzene	mg/kg	0.02	1	10	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02

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LD: Laboratory duplicate

NA: Not applicable

RDL: Reportable detection limit

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-: No established guideline

Bold: Concentration exceeds CCME CSQG for residential/parkland land use

Bold: Concentration exceeds CCME CSQG for residential/parkland and commercial land use

TABLE 11: Metals in Groundwater (CWQG - Protection of Aquatic Life, Marine)

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	CCME CWQG (Marine)		Groundwater Samples					
					MW23-02	MW23-03	MW23-04	MW23-18	MW23-19	MW23-20
					2023-08-02	2023-08-02	2023-08-02	2023-08-01	2023-08-01	2023-08-01
			Short Term	Long Term	493175-20	493175-01	493175-02	493175-26	493175-27	493175-28
Aluminum	µg/L	1	-	-	7	21	9	< 5	5	7
Antimony	µg/L	0.1	-	-	1.1	0.2	< 0.5	< 0.5	0.3	< 0.5
Arsenic	µg/L	1	-	12.5	< 1	< 1	< 5	< 5	< 2	< 5
Barium	µg/L	1	-	-	164	115	118	397	109	139
Beryllium	µg/L	0.1	-	-	< 0.1	< 0.1	< 0.5	< 0.5	< 0.2	< 0.5
Bismuth	µg/L	1	-	-	< 1	< 1	< 5	< 5	< 2	< 5
Boron	µg/L	1	-	-	176	299	48	78	274	106
Cadmium	µg/L	0.01	-	0.12	**0.76**	< 0.01	< 0.05	0.08	< 0.02	< 0.05
Calcium	µg/L	50	-	-	72400	109000	84300	241000	98600	101000
Chromium	µg/L	1	-	-	< 1	< 1	< 5	< 5	< 2	< 5
Cobalt	µg/L	0.1	-	-	0.4	0.7	< 0.5	< 0.5	0.8	< 0.5
Copper	µg/L	1	-	-	8	< 1	< 5	< 5	< 2	< 5
Iron	µg/L	20	-	-	< 20	550	< 100	< 100	150	< 100
Lead	µg/L	0.1	-	-	< 0.1	< 0.1	< 0.5	< 0.5	< 0.2	< 0.5
Lithium	µg/L	0.1	-	-	10.6	9.4	2.6	4.3	2.9	3.6
Magnesium	µg/L	10	-	-	25000	45100	35400	140000	6920	14400
Manganese	µg/L	1	-	-	225	8420	1180	361	1170	5700
Molybdenum	µg/L	0.1	-	-	2.4	1	2.3	0.5	1.1	0.7
Nickel	µg/L	1	-	-	37	1	< 5	6	< 2	< 5
Potassium	µg/L	20	-	-	11500	17700	7800	17400	13600	10800
Rubidium	µg/L	0.1	-	-	12.6	16.2	5.9	4.2	20.7	12.3
Selenium	µg/L	1	-	-	< 1	< 1	< 5	< 5	< 2	< 5
Silver	µg/L	0.1	7.5	-	< 0.1	< 0.1	< 0.5	< 0.5	< 0.2	< 0.5
Sodium	µg/L	50	-	-	43000	117000	653000	873000	379000	796000

CCME: Canadian Council of Ministers of the Environment

CWQG: Canadian Water Quality Guidelines for the Protection of Aquatic Life, Marine (short term and long term)

RDL: Reportable detection limit

< 1: Concentration is less than reportable detection limit of 1 µg/L

-: No established guideline

Bold: Concentration exceeds CCME CWQG (Short Term)

Bold: Concentration exceeds CCME CWQG (Long Term)

TABLE 11 (Cont'd): Metals in Groundwater (CWQG - Protection of Aquatic Life, Marine)

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	CCME CWQG (Marine)		Groundwater Samples					
					MW23-02	MW23-03	MW23-04	MW23-18	MW23-19	MW23-20
					2023-08-02	2023-08-02	2023-08-02	2023-08-01	2023-08-01	2023-08-01
			Short Term	Long Term	493175-20	493175-01	493175-02	493175-26	493175-27	493175-28
Strontium	µg/L	1	-	-	264	453	268	740	343	293
Tellurium	µg/L	0.1	-	-	< 0.1	< 0.1	< 0.5	< 0.5	< 0.2	< 0.5
Thallium	µg/L	0.1	-	-	0.2	< 0.1	< 0.5	< 0.5	< 0.2	< 0.5
Tin	µg/L	0.1	-	-	< 0.1	< 0.1	< 0.5	< 0.5	< 0.2	< 0.5
Uranium	µg/L	0.1	-	-	0.1	0.7	1	< 0.5	< 0.2	< 0.5
Vanadium	µg/L	1	-	-	1	< 1	< 5	< 5	< 2	< 5
Zinc	µg/L	1	-	-	642	20	7	5	3	< 5

CCME: Canadian Council of Ministers of the Environment

CWQG: Canadian Water Quality Guidelines for the Protection of Aquatic Life, Marine (short term and long term)

RDL: Reportable detection limit

< 1: Concentration is less than reportable detection limit of 1 µg/L

-: No established guideline

Bold: Concentration exceeds CCME CWQG (Short Term)

Bold: Concentration exceeds CCME CWQG (Long Term)

TABLE 12: Petroleum Hydrocarbons in Groundwater (Tier I RBSLs)

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	PHRR Tier I RBSLs		Groundwater Samples						
					MW22-01	MW22-02	MW22-03	MW22-04	MW22-05	MW22-06	MW22-07
					2023-08-01	2023-08-01	2023-08-01	2023-08-01	2023-08-02	2023-08-02	2023-08-02
			Residential	Commercial	493175-11	493175-12	493175-13	493175-14	493175-15	493175-16	493175-17
Benzene	mg/L	0.001	2.6	20	< 0.001	0.087	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	mg/L	0.001	20	20	< 0.001	0.004	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	mg/L	0.001	20	20	< 0.001	0.083	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Xylenes	mg/L	0.001	20	20	< 0.001	0.068	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
C6 - C10 (less BTEX)	mg/L	0.01	-	-	< 0.01	0.44	0.06	< 0.01	0.02	< 0.01	< 0.01
>C10-C16 Hydrocarbons	mg/L	0.05	-	-	< 0.05	0.22	0.36	< 0.05	< 0.05	< 0.05	< 0.05
>C16-C21 Hydrocarbons	mg/L	0.05	-	-	< 0.05	< 0.05	0.22	< 0.05	0.09	0.07	< 0.05
>C21-<C32 Hydrocarbons	mg/L	0.1	-	-	< 0.1	< 0.1	0.20	0.10	0.20	0.10	< 0.1
Modified TPH	mg/L	0.1	20 (Gas) 20 (Fuel Oil) 20 (Lube Oil)	20 (Gas) 20 (Fuel Oil) 20 (Lube Oil)	< 0.1	0.7	0.8	0.1	0.3	0.2	< 0.1
Return to Baseline at C32	NA	NA	NA	NA	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Resemblance	NA	NA	NA	NA	ND	G	PWG.WFO	LO	PWFO.LO	PWFO.LO	ND

PHRR: Petroleum Hydrocarbon Remediation Regulations (Prince Edward Island, Environmental Protection Act, 2015), Tier I Risk Based Screening Levels for Groundwater (residential and commercial / non-potable / coarse-grained)

BFD: Blind field duplicate

G: Gasoline fraction

LD: Laboratory duplicate

LO: Lube oil

NA: Not applicable

ND: Not detected

PWFO: Possible weathered fuel oil fraction

PWG: Possible weathered gasoline fraction

RDL: Reportable detection limit

WFO: Weathered fuel oil fraction

< 0.001: Concentration is less than reportable detection limit of 0.001 mg/L

-: No established guideline

Bold: Concentration exceeds Tier I RBSLs for residential land use

Bold: Concentration exceeds Tier I RBSLs for residential and commercial land use

TABLE 12 (Cont'd): Petroleum Hydrocarbons in Groundwater (Tier I RBSLs)
Phase II Environmental Site Assessment
Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	PHRR Tier I RBSLs		Groundwater Samples						
					MW22-08	MW23-01	MW23-02	MW23-03	MW23-04	MW23-05	MW23-06
					2023-08-02	2023-08-02	2023-08-02	2023-08-02	2023-08-02	2023-08-02	2023-08-01
			Residential	Commercial	493175-18	493175-19	493175-20	493175-01	493175-02	493175-03	493175-04
Benzene	mg/L	0.001	2.6	20	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	mg/L	0.001	20	20	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	mg/L	0.001	20	20	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Xylenes	mg/L	0.001	20	20	< 0.001	< 0.001	< 0.001	< 0.001	0.001	< 0.001	< 0.001
C6 - C10 (less BTEX)	mg/L	0.01	-	-	< 0.01	< 0.01	< 0.01	< 0.01	0.10	< 0.01	< 0.01
>C10-C16 Hydrocarbons	mg/L	0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
>C16-C21 Hydrocarbons	mg/L	0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.07	< 0.05
>C21-<C32 Hydrocarbons	mg/L	0.1	-	-	0.30	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Modified TPH	mg/L	0.1	20 (Gas) 20 (Fuel Oil) 20 (Lube Oil)	20 (Gas) 20 (Fuel Oil) 20 (Lube Oil)	0.3	< 0.1	< 0.1	< 0.1	0.1	< 0.1	< 0.1
Return to Baseline at C32	NA	NA	NA	NA	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Resemblance	NA	NA	NA	NA	LO	ND	ND	ND	PWG	ND	ND

PHRR: Petroleum Hydrocarbon Remediation Regulations (Prince Edward Island, Environmental Protection Act, 2015), Tier I Risk Based Screening Levels for Groundwater (residential and commercial / non-potable / coarse-grained)

BFD: Blind field duplicate

G: Gasoline fraction

LD: Laboratory duplicate

LO: Lube oil

NA: Not applicable

ND: Not detected

PWFO: Possible weathered fuel oil fraction

PWG: Possible weathered gasoline fraction

RDL: Reportable detection limit

WFO: Weathered fuel oil fraction

< 0.001: Concentration is less than reportable detection limit of 0.001 mg/L

-: No established guideline

Bold: Concentration exceeds Tier I RBSLs for residential land use

Bold: Concentration exceeds Tier I RBSLs for residential and commercial land use

TABLE 12 (Cont'd): Petroleum Hydrocarbons in Groundwater (Tier I RBSLs)

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	PHRR Tier I RBSLs		Groundwater Samples						
					MW23-07	MW23-08	MW23-09	MW23-10	MW23-10, LD	MW23-11	MW23-12
					2023-08-01	2023-08-01	2023-08-01	2023-08-01	2023-08-01	2023-08-01	2023-08-01
			Residential	Commercial	493175-05	493175-06	493175-07	493175-08	493175-08	493175-09	493175-10
Benzene	mg/L	0.001	2.6	20	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.094	0.001
Toluene	mg/L	0.001	20	20	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.003	< 0.001
Ethylbenzene	mg/L	0.001	20	20	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.092	0.033
Xylenes	mg/L	0.001	20	20	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.074	0.036
C6 - C10 (less BTEX)	mg/L	0.01	-	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.49	0.28
>C10-C16 Hydrocarbons	mg/L	0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.17	0.70
>C16-C21 Hydrocarbons	mg/L	0.05	-	-	< 0.05	< 0.05	< 0.05	0.10	0.10	< 0.05	0.55
>C21-<C32 Hydrocarbons	mg/L	0.1	-	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.2
Modified TPH	mg/L	0.1	20 (Gas) 20 (Fuel Oil) 20 (Lube Oil)	20 (Gas) 20 (Fuel Oil) 20 (Lube Oil)	< 0.1	< 0.1	< 0.1	0.1	0.1	0.7	1.7
Return to Baseline at C32	NA	NA	NA	NA	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Resemblance	NA	NA	NA	NA	ND	ND	ND	WFO	WFO	G	G.WFO

PHRR: Petroleum Hydrocarbon Remediation Regulations (Prince Edward Island, Environmental Protection Act, 2015), Tier I Risk Based Screening Levels for Groundwater (residential and commercial / non-potable / coarse-grained)

BFD: Blind field duplicate

G: Gasoline fraction

LD: Laboratory duplicate

LO: Lube oil

NA: Not applicable

ND: Not detected

PWFO: Possible weathered fuel oil fraction

PWG: Possible weathered gasoline fraction

RDL: Reportable detection limit

WFO: Weathered fuel oil fraction

< 0.001: Concentration is less than reportable detection limit of 0.001 mg/L

-: No established guideline

Bold: Concentration exceeds Tier I RBSLs for residential land use

Bold: Concentration exceeds Tier I RBSLs for residential and commercial land use

TABLE 12 (Cont'd): Petroleum Hydrocarbons in Groundwater (Tier I RBSLs)
Phase II Environmental Site Assessment
Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	PHRR Tier I RBSLs		Groundwater Samples						
					MW23-13	MW23-14	MW23-15	MW23-16	MW23-17	MW23-18	MW23-18, LD
					2023-08-01	2023-08-02	2023-08-02	2023-08-01	2023-08-01	2023-08-01	2023-08-01
			Residential	Commercial	493175-21	493175-22	493175-23	493175-24	493175-25	493175-26	493175-26
Benzene	mg/L	0.001	2.6	20	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	mg/L	0.001	20	20	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	mg/L	0.001	20	20	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Xylenes	mg/L	0.001	20	20	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
C6 - C10 (less BTEX)	mg/L	0.01	-	-	< 0.01	< 0.01	0.02	< 0.01	< 0.01	< 0.01	< 0.01
>C10-C16 Hydrocarbons	mg/L	0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
>C16-C21 Hydrocarbons	mg/L	0.05	-	-	< 0.05	< 0.05	0.08	< 0.05	< 0.05	< 0.05	< 0.05
>C21-<C32 Hydrocarbons	mg/L	0.1	-	-	< 0.1	< 0.1	0.1	< 0.1	< 0.1	0.3	< 0.1
Modified TPH	mg/L	0.1	20 (Gas) 20 (Fuel Oil) 20 (Lube Oil)	20 (Gas) 20 (Fuel Oil) 20 (Lube Oil)	< 0.1	< 0.1	0.2	< 0.1	< 0.1	0.3	< 0.1
Return to Baseline at C32	NA	NA	NA	NA	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Resemblance	NA	NA	NA	NA	ND	ND	PWFO.LO	ND	ND	LO	ND

PHRR: Petroleum Hydrocarbon Remediation Regulations (Prince Edward Island, Environmental Protection Act, 2015), Tier I Risk Based Screening Levels for Groundwater (residential and commercial / non-potable / coarse-grained)

BFD: Blind field duplicate

G: Gasoline fraction

LD: Laboratory duplicate

LO: Lube oil

NA: Not applicable

ND: Not detected

PWFO: Possible weathered fuel oil fraction

PWG: Possible weathered gasoline fraction

RDL: Reportable detection limit

WFO: Weathered fuel oil fraction

< 0.001: Concentration is less than reportable detection limit of 0.001 mg/L

-: No established guideline

Bold: Concentration exceeds Tier I RBSLs for residential land use

Bold: Concentration exceeds Tier I RBSLs for residential and commercial land use

TABLE 12 (Cont'd): Petroleum Hydrocarbons in Groundwater (Tier I RBSLs)

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	PHRR Tier I RBSLs		Groundwater Samples			
					MW23-19	MW23-20	MW23-21	MW23-22
					2023-08-01	2023-08-01	2023-08-01	2023-08-01
			Residential	Commercial	493175-27	493175-28	493175-29	493175-30
Benzene	mg/L	0.001	2.6	20	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	mg/L	0.001	20	20	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	mg/L	0.001	20	20	< 0.001	< 0.001	< 0.001	< 0.001
Xylenes	mg/L	0.001	20	20	< 0.001	< 0.001	< 0.001	< 0.001
C6 - C10 (less BTEX)	mg/L	0.01	-	-	0.06	< 0.01	< 0.01	< 0.01
>C10-C16 Hydrocarbons	mg/L	0.05	-	-	0.32	< 0.05	< 0.05	< 0.05
>C16-C21 Hydrocarbons	mg/L	0.05	-	-	0.21	0.07	< 0.05	< 0.05
>C21-<C32 Hydrocarbons	mg/L	0.1	-	-	0.2	< 0.1	< 0.1	< 0.1
Modified TPH	mg/L	0.1	20 (Gas) 20 (Fuel Oil) 20 (Lube Oil)	20 (Gas) 20 (Fuel Oil) 20 (Lube Oil)	0.8	< 0.1	< 0.1	< 0.1
Return to Baseline at C32	NA	NA	NA	NA	Yes	Yes	Yes	Yes
Resemblance	NA	NA	NA	NA	PWG.WFO	ND	ND	ND

PHRR: Petroleum Hydrocarbon Remediation Regulations (Prince Edward Island, Environmental Protection Act, 2015), Tier I Risk Based Screening Levels for Groundwater (residential and commercial / non-potable / coarse-grained)

BFD: Blind field duplicate

G: Gasoline fraction

LD: Laboratory duplicate

LO: Lube oil

NA: Not applicable

ND: Not detected

PWFO: Possible weathered fuel oil fraction

PWG: Possible weathered gasoline fraction

RDL: Reportable detection limit

WFO: Weathered fuel oil fraction

< 0.001: Concentration is less than reportable detection limit of 0.001 mg/L

-: No established guideline

Bold: Concentration exceeds Tier I RBSLs for residential land use

Bold: Concentration exceeds Tier I RBSLs for residential and commercial land use

TABLE 13: Petroleum Hydrocarbons in Groundwater (Tier I GESLs - Freshwater/Marine Aquatic Life, 140 m)

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	PHRR Tier I GESLs	Groundwater Samples								
				MW22-01	MW22-02	MW22-03	MW22-04	MW22-05	MW22-06	MW22-07	MW22-08	MW23-01
				2023-08-01	2023-08-01	2023-08-01	2023-08-01	2023-08-02	2023-08-02	2023-08-02	2023-08-02	2023-08-02
				493175-11	493175-12	493175-13	493175-14	493175-15	493175-16	493175-17	493175-18	493175-19
Benzene	mg/L	0.001	87	< 0.001	0.087	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	mg/L	0.001	79	< 0.001	0.004	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	mg/L	0.001	60	< 0.001	0.083	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Xylenes	mg/L	0.001	53	< 0.001	0.068	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
C6 - C10 (less BTEX)	mg/L	0.01	-	< 0.01	0.44	0.06	< 0.01	0.02	< 0.01	< 0.01	< 0.01	< 0.01
>C10-C16 Hydrocarbons	mg/L	0.05	-	< 0.05	0.22	0.36	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
>C16-C21 Hydrocarbons	mg/L	0.05	-	< 0.05	< 0.05	0.22	< 0.05	0.09	0.07	< 0.05	< 0.05	< 0.05
>C21-<C32 Hydrocarbons	mg/L	0.1	-	< 0.1	< 0.1	0.2	0.1	0.2	0.1	< 0.1	0.3	< 0.1
Modified TPH	mg/L	0.1	467 (Gasoline) 20 (Fuel Oil) 20 (Lube Oil)	< 0.1	0.7	0.8	0.1	0.3	0.2	< 0.1	0.3	< 0.1
Return to Baseline at C32	NA	NA	NA	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Resemblance	NA	NA	NA	ND	G	PWG.WFO	LO	PWFO.LO	PWFO.LO	ND	LO	ND

PHRR: Petroleum Hydrocarbon Remediation Regulations (Prince Edward Island, Environmental Protection Act, 2015), Tier I Groundwater Ecological Screening Levels for the Protection of Freshwater and Marine Aquatic Life, adjusted for distance to receiving aquatic environment and soil type (140 m / non-potable / coarse-grained)

BFD: Blind field duplicate

G: Gasoline fraction

LD: Laboratory duplicate

LO: Lube oil

NA: Not applicable

ND: Not detected

PWFO: Possible weathered fuel oil fraction

PWG: Possible weathered gasoline fraction

RDL: Reportable detection limit

WFO: Weathered fuel oil fraction

< 0.001: Concentration is less than reportable detection limit of 0.001 mg/L

-: No established guideline

Bold: Concentration exceeds Tier I GESLs

TABLE 13 (Cont'd): Petroleum Hydrocarbons in Groundwater (Tier I GESLs - Freshwater/Marine Aquatic Life, 140 m)

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	PHRR Tier I GESLs	Groundwater Samples								
				MW23-02	MW23-03	MW23-04	MW23-05	MW23-06	MW23-07	MW23-08	MW23-09	MW23-10
				2023-08-02	2023-08-02	2023-08-02	2023-08-02	2023-08-01	2023-08-01	2023-08-01	2023-08-01	2023-08-01
				493175-20	493175-01	493175-02	493175-03	493175-04	493175-05	493175-06	493175-07	493175-08
Benzene	mg/L	0.001	87	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	mg/L	0.001	79	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	mg/L	0.001	60	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Xylenes	mg/L	0.001	53	< 0.001	< 0.001	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
C6 - C10 (less BTEX)	mg/L	0.01	-	< 0.01	< 0.01	0.1	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
>C10-C16 Hydrocarbons	mg/L	0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
>C16-C21 Hydrocarbons	mg/L	0.05	-	< 0.05	< 0.05	< 0.05	0.07	< 0.05	< 0.05	< 0.05	< 0.05	0.1
>C21-<C32 Hydrocarbons	mg/L	0.1	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Modified TPH	mg/L	0.1	467 (Gasoline) 20 (Fuel Oil) 20 (Lube Oil)	< 0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.1
Return to Baseline at C32	NA	NA	NA	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Resemblance	NA	NA	NA	ND	ND	PWG	ND	ND	ND	ND	ND	WFO

PHRR: Petroleum Hydrocarbon Remediation Regulations (Prince Edward Island, Environmental Protection Act, 2015), Tier I Groundwater Ecological Screening Levels for the Protection of Freshwater and Marine Aquatic Life, adjusted for distance to receiving aquatic environment and soil type (140 m / non-potable / coarse-grained)

BFD: Blind field duplicate

G: Gasoline fraction

LD: Laboratory duplicate

LO: Lube oil

NA: Not applicable

ND: Not detected

PWFO: Possible weathered fuel oil fraction

PWG: Possible weathered gasoline fraction

RDL: Reportable detection limit

WFO: Weathered fuel oil fraction

< 0.001: Concentration is less than reportable detection limit of 0.001 mg/L

-: No established guideline

Bold: Concentration exceeds Tier I GESLs

TABLE 13 (Cont'd): Petroleum Hydrocarbons in Groundwater (Tier I GESLs - Freshwater/Marine Aquatic Life, 140 m)

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	PHRR Tier I GESLs	Groundwater Samples								
				MW23-10, LD	MW23-11	MW23-12	MW23-13	MW23-14	MW23-15	MW23-16	MW23-17	MW23-18
				2023-08-01	2023-08-01	2023-08-01	2023-08-01	2023-08-02	2023-08-02	2023-08-01	2023-08-01	2023-08-01
				493175-08	493175-09	493175-10	493175-21	493175-22	493175-23	493175-24	493175-25	493175-26
Benzene	mg/L	0.001	87	< 0.001	0.094	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	mg/L	0.001	79	< 0.001	0.003	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	mg/L	0.001	60	< 0.001	0.092	0.033	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Xylenes	mg/L	0.001	53	< 0.001	0.074	0.036	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
C6 - C10 (less BTEX)	mg/L	0.01	-	< 0.01	0.49	0.28	< 0.01	< 0.01	0.02	< 0.01	< 0.01	< 0.01
>C10-C16 Hydrocarbons	mg/L	0.05	-	< 0.05	0.17	0.7	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
>C16-C21 Hydrocarbons	mg/L	0.05	-	0.1	< 0.05	0.55	< 0.05	< 0.05	0.08	< 0.05	< 0.05	< 0.05
>C21-<C32 Hydrocarbons	mg/L	0.1	-	< 0.1	< 0.1	0.2	< 0.1	< 0.1	0.1	< 0.1	< 0.1	0.3
Modified TPH	mg/L	0.1	467 (Gasoline) 20 (Fuel Oil) 20 (Lube Oil)	0.1	0.7	1.7	< 0.1	< 0.1	0.2	< 0.1	< 0.1	0.3
Return to Baseline at C32	NA	NA	NA	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Resemblance	NA	NA	NA	WFO	G	G.WFO	ND	ND	PWFO.LO	ND	ND	LO

PHRR: Petroleum Hydrocarbon Remediation Regulations (Prince Edward Island, Environmental Protection Act, 2015), Tier I Groundwater Ecological Screening Levels for the Protection of Freshwater and Marine Aquatic Life, adjusted for distance to receiving aquatic environment and soil type (140 m / non-potable / coarse-grained)

BFD: Blind field duplicate

G: Gasoline fraction

LD: Laboratory duplicate

LO: Lube oil

NA: Not applicable

ND: Not detected

PWFO: Possible weathered fuel oil fraction

PWG: Possible weathered gasoline fraction

RDL: Reportable detection limit

WFO: Weathered fuel oil fraction

< 0.001: Concentration is less than reportable detection limit of 0.001 mg/L

-: No established guideline

Bold: Concentration exceeds Tier I GESLs

TABLE 13 (Cont'd): Petroleum Hydrocarbons in Groundwater (Tier I GESLs - Freshwater/Marine Aquatic Life, 140 m)

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	PHRR Tier I GESLs	Groundwater Samples				
				MW23-18, LD	MW23-19	MW23-20	MW23-21	MW23-22
				2023-08-01	2023-08-01	2023-08-01	2023-08-01	2023-08-01
				493175-26	493175-27	493175-28	493175-29	493175-30
Benzene	mg/L	0.001	87	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	mg/L	0.001	79	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	mg/L	0.001	60	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Xylenes	mg/L	0.001	53	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
C6 - C10 (less BTEX)	mg/L	0.01	-	< 0.01	0.06	< 0.01	< 0.01	< 0.01
>C10-C16 Hydrocarbons	mg/L	0.05	-	< 0.05	0.32	< 0.05	< 0.05	< 0.05
>C16-C21 Hydrocarbons	mg/L	0.05	-	< 0.05	0.21	0.07	< 0.05	< 0.05
>C21-<C32 Hydrocarbons	mg/L	0.1	-	< 0.1	0.2	< 0.1	< 0.1	< 0.1
Modified TPH	mg/L	0.1	467 (Gasoline) 20 (Fuel Oil) 20 (Lube Oil)	< 0.1	0.8	< 0.1	< 0.1	< 0.1
Return to Baseline at C32	NA	NA	NA	Yes	Yes	Yes	Yes	Yes
Resemblance	NA	NA	NA	ND	PWG.WFO	ND	ND	ND

PHRR: Petroleum Hydrocarbon Remediation Regulations (Prince Edward Island, Environmental Protection Act, 2015), Tier I Groundwater Ecological Screening Levels for the Protection of Freshwater and Marine Aquatic Life, adjusted for distance to receiving aquatic environment and soil type (140 m / non-potable / coarse-grained)

BFD: Blind field duplicate

G: Gasoline fraction

LD: Laboratory duplicate

LO: Lube oil

NA: Not applicable

ND: Not detected

PWFO: Possible weathered fuel oil fraction

PWG: Possible weathered gasoline fraction

RDL: Reportable detection limit

WFO: Weathered fuel oil fraction

< 0.001: Concentration is less than reportable detection limit of 0.001 mg/L

-: No established guideline

Bold: Concentration exceeds Tier I GESLs

TABLE 14: Polycyclic Aromatic Hydrocarbons in Groundwater (CWQG - Protection of Aquatic Life, Marine)

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	CCME CWQG (Marine)		Groundwater Samples							
					MW23-02	MW23-03	MW23-04	MW23-05	MW23-14	MW23-15	MW23-18	MW23-19
					2023-08-02	2023-08-02	2023-08-02	2023-08-02	2023-08-02	2023-08-02	2023-08-01	2023-08-01
			Short Term	Long Term	493175-20	493175-01	493175-02	493175-03	493175-22	493175-23	493175-26	493175-27
Naphthalene	µg/L	0.05	-	1.4	< 0.05	< 0.05	< 0.20	< 0.05	< 0.05	< 0.05	< 0.05	< 0.20
Acenaphthylene	µg/L	0.01	-	-	< 0.01	< 0.01	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.05
Acenaphthene	µg/L	0.01	-	-	< 0.01	0.03	< 0.02	< 0.01	0.01	< 0.01	< 0.01	2.2
Fluorene	µg/L	0.01	-	-	< 0.01	< 0.01	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01	1.8
Phenanthrene	µg/L	0.01	-	-	< 0.01	< 0.01	< 0.02	< 0.01	0.02	< 0.01	< 0.01	2.1
Anthracene	µg/L	0.01	-	-	< 0.01	0.02	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01	0.28
Fluoranthene	µg/L	0.01	-	-	< 0.01	< 0.01	< 0.02	< 0.01	0.03	< 0.01	< 0.01	0.37
Pyrene	µg/L	0.01	-	-	< 0.01	< 0.01	< 0.02	< 0.01	0.03	0.02	< 0.01	0.22
Benz(a)anthracene	µg/L	0.01	-	-	< 0.01	< 0.01	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01	0.07
Chrysene/Triphenylene	µg/L	0.01	-	-	< 0.01	< 0.01	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.05
Benzo(b+j)fluoranthene	µg/L	0.01	-	-	< 0.01	< 0.01	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.05
Benzo(k)fluoranthene	µg/L	0.01	-	-	< 0.01	< 0.01	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.05
Benzo(e)pyrene	µg/L	0.01	-	-	< 0.01	< 0.01	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.05
Benzo(a)pyrene	µg/L	0.01	-	-	< 0.01	< 0.01	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.05
Indeno(1,2,3-c,d)pyrene	µg/L	0.01	-	-	< 0.01	< 0.01	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.05
Benzo(g,h,i)perylene	µg/L	0.01	-	-	< 0.01	< 0.01	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.05
Dibenz(a,h)anthracene	µg/L	0.01	-	-	< 0.01	< 0.01	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.05

CCME: Canadian Council of Ministers of the Environment

CWQG: Canadian Water Quality Guidelines for the Protection of Aquatic Life, Marine (short term and long term)

NA: Not applicable

RDL: Reportable detection limit

< 0.05: Concentration is less than reportable detection limit of 0.05 µg/L

-: No established guideline

Bold: Concentration exceeds CCME CWQG (Short Term)

Bold: Concentration exceeds CCME CWQG (Long Term)

TABLE 14: Polycyclic Aromatic Hydrocarbons in Groundwater (CWQG - Protection of Aquatic Life, Marine)

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	CCME CWQG (Marine)		Groundwater Samples		
					MW23-20	MW23-21	MW23-22
					2023-08-01	2023-08-01	2023-08-01
			Short Term	Long Term	493175-28	493175-29	493175-30
Naphthalene	µg/L	0.05	-	1.4	< 0.05	< 0.05	< 0.05
Acenaphthylene	µg/L	0.01	-	-	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/L	0.01	-	-	< 0.01	< 0.01	< 0.01
Fluorene	µg/L	0.01	-	-	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/L	0.01	-	-	< 0.01	< 0.01	< 0.01
Anthracene	µg/L	0.01	-	-	0.01	< 0.01	< 0.01
Fluoranthene	µg/L	0.01	-	-	0.06	< 0.01	< 0.01
Pyrene	µg/L	0.01	-	-	0.04	< 0.01	< 0.01
Benz(a)anthracene	µg/L	0.01	-	-	< 0.01	< 0.01	< 0.01
Chrysene/Triphenylene	µg/L	0.01	-	-	< 0.01	< 0.01	< 0.01
Benzo(b+j)fluoranthene	µg/L	0.01	-	-	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/L	0.01	-	-	< 0.01	< 0.01	< 0.01
Benzo(e)pyrene	µg/L	0.01	-	-	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/L	0.01	-	-	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-c,d)pyrene	µg/L	0.01	-	-	< 0.01	< 0.01	< 0.01
Benzo(g,h,i)perylene	µg/L	0.01	-	-	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/L	0.01	-	-	< 0.01	< 0.01	< 0.01

CCME: Canadian Council of Ministers of the Environment

CWQG: Canadian Water Quality Guidelines for the Protection of Aquatic Life, Marine (short term and long term)

NA: Not applicable

RDL: Reportable detection limit

< 0.05: Concentration is less than reportable detection limit of 0.05 µg/L

-: No established guideline

Bold: Concentration exceeds CCME CWQG (Short Term)

Bold: Concentration exceeds CCME CWQG (Long Term)

TABLE 15: Polychlorinated Biphenyls in Groundwater (CWQG - Protection of Aquatic Life, Marine)

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	CCME CWQG (Marine)		Groundwater Samples		
					MW23-18	MW23-19	MW23-20
					2023-08-01	2023-08-01	2023-08-01
			Short Term	Long Term	493175-26	493175-27	493175-28
Total PCB	µg/L	0.1	-	-	< 0.1	< 0.1	< 0.1
Resemblance	NA	NA	-	-	ND	ND	ND

CCME: Canadian Council of Ministers of the Environment

CWQG: Canadian Water Quality Guidelines for the Protection of Aquatic Life, Marine (short term and long term)

NA: Not applicable

ND: Not detected

RDL: Reportable detection limit

< 0.1: Concentration is less than reportable detection limit of 0.1 µg/L

-: No established guideline

Bold: Concentration exceeds CCME CWQG (Short Term)

Bold: Concentration exceeds CCME CWQG (Long Term)

TABLE 16: Volatile Organic Compounds in Groundwater (CWQG - Protection of Aquatic Life, Marine)

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	CCME CWQG (Marine)		Groundwater Samples							
					MW23-06	MW23-07	MW23-08	MW23-09	MW23-10	MW23-11	MW23-12	MW23-13
					2023-08-01	2023-08-01	2023-08-01	2023-08-01	2023-08-01	2023-08-01	2023-08-01	2023-08-01
			Short Term	Long Term	493175-04	493175-05	493175-06	493175-07	493175-08	493175-09	493175-10	493175-21
Chloromethane	µg/L	5	-	-	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Vinyl Chloride	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromomethane	µg/L	5	-	-	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	µg/L	5	-	-	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Trichlorofluoromethane	µg/L	5	-	-	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1-Dichloroethylene	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Methylene Chloride	µg/L	5	-	-	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,2-Dichloroethylene (trans)	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1-Dichloroethane	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichloroethylene (cis)	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromochloromethane	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	µg/L	0.5	-	-	4.2	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,1-Trichloroethane	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Benzene	µg/L	0.5	-	110	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	90	0.9	< 0.5
1,2-Dichloroethane	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethylene	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichloropropane	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromodichloromethane	µg/L	0.5	-	-	2	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,3-Dichloropropylene (trans)	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	µg/L	0.5	-	215	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	3.3	< 0.5	< 0.5
1,3-Dichloropropylene (cis)	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2-Trichloroethane	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethylene	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Dibromochloromethane	µg/L	0.5	-	-	0.7	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5

CCME: Canadian Council of Ministers of the Environment

CWQG: Canadian Water Quality Guidelines for the Protection of Aquatic Life, Marine (short term and long term)

LD: Laboratory duplicate

RDL: Reportable detection limit

< 5.0: Concentration is less than reportable detection limit of 5.0 µg/L

-: No established guideline

Bold: Concentration exceeds CCME CWQG (Short Term)

Bold: Concentration exceeds CCME CWQG (Long Term)

TABLE 16 (Cont'd): Volatile Organic Compounds in Groundwater (CWQG - Protection of Aquatic Life, Marine)

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	CCME CWQG (Marine)		Groundwater Samples							
					MW23-06	MW23-07	MW23-08	MW23-09	MW23-10	MW23-11	MW23-12	MW23-13
					2023-08-01	2023-08-01	2023-08-01	2023-08-01	2023-08-01	2023-08-01	2023-08-01	2023-08-01
			Short Term	Long Term	493175-04	493175-05	493175-06	493175-07	493175-08	493175-09	493175-10	493175-21
1,2-Dibromoethane	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	µg/L	0.5	-	25	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	**100**	**33**	< 0.5
m,p-Xylenes	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	79	37	< 0.5
o-Xylene	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	3.6	< 0.5	< 0.5
Styrene	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromoform	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,1,2-Tetrachloroethane	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2,2-Tetrachloroethane	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,3-Dichlorobenzene	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,4-Dichlorobenzene	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichlorobenzene	µg/L	0.5	-	42	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5

CCME: Canadian Council of Ministers of the Environment

CWQG: Canadian Water Quality Guidelines for the Protection of Aquatic Life, Marine (short term and long term)

LD: Laboratory duplicate

RDL: Reportable detection limit

< 5.0: Concentration is less than reportable detection limit of 5.0 µg/L

-: No established guideline

Bold: Concentration exceeds CCME CWQG (Short Term)

Bold: Concentration exceeds CCME CWQG (Long Term)

TABLE 16 (Cont'd): Volatile Organic Compounds in Groundwater (CWQG - Protection of Aquatic Life, Marine)

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	CCME CWQG (Marine)		Groundwater Samples							
					MW23-14	MW23-15	MW23-16	MW23-17	MW23-18	MW23-19	MW23-20	MW23-20, LD
					2023-08-02	2023-08-02	2023-08-01	2023-08-01	2023-08-01	2023-08-01	2023-08-01	2023-08-01
			Short Term	Long Term	493175-22	493175-23	493175-24	493175-25	493175-26	493175-27	493175-28	493175-28
Chloromethane	µg/L	5	-	-	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Vinyl Chloride	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.1	1.2
Bromomethane	µg/L	5	-	-	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	µg/L	5	-	-	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Trichlorofluoromethane	µg/L	5	-	-	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1-Dichloroethylene	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Methylene Chloride	µg/L	5	-	-	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,2-Dichloroethylene (trans)	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1-Dichloroethane	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.1	1.1
1,2-Dichloroethylene (cis)	µg/L	0.5	-	-	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromochloromethane	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,1-Trichloroethane	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Benzene	µg/L	0.5	-	110	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichloroethane	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethylene	µg/L	0.5	-	-	0.9	0.6	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichloropropane	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromodichloromethane	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,3-Dichloropropylene (trans)	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	µg/L	0.5	-	215	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,3-Dichloropropylene (cis)	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2-Trichloroethane	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethylene	µg/L	0.5	-	-	8.9	19	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Dibromochloromethane	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5

CCME: Canadian Council of Ministers of the Environment

CWQG: Canadian Water Quality Guidelines for the Protection of Aquatic Life, Marine (short term and long term)

LD: Laboratory duplicate

RDL: Reportable detection limit

< 5.0: Concentration is less than reportable detection limit of 5.0 µg/L

-: No established guideline

Bold: Concentration exceeds CCME CWQG (Short Term)

Bold: Concentration exceeds CCME CWQG (Long Term)

TABLE 16 (Cont'd): Volatile Organic Compounds in Groundwater (CWQG - Protection of Aquatic Life, Marine)

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	CCME CWQG (Marine)		Groundwater Samples							
					MW23-14	MW23-15	MW23-16	MW23-17	MW23-18	MW23-19	MW23-20	MW23-20, LD
					2023-08-02	2023-08-02	2023-08-01	2023-08-01	2023-08-01	2023-08-01	2023-08-01	2023-08-01
			Short Term	Long Term	493175-22	493175-23	493175-24	493175-25	493175-26	493175-27	493175-28	493175-28
1,2-Dibromoethane	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	2.4	< 0.5	< 0.5
Ethylbenzene	µg/L	0.5	-	25	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
m,p-Xylenes	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
o-Xylene	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Styrene	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromoform	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,1,2-Tetrachloroethane	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2,2-Tetrachloroethane	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,3-Dichlorobenzene	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,4-Dichlorobenzene	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	2.4	< 0.5	< 0.5
1,2-Dichlorobenzene	µg/L	0.5	-	42	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5

CCME: Canadian Council of Ministers of the Environment

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LD: Laboratory duplicate

RDL: Reportable detection limit

< 5.0: Concentration is less than reportable detection limit of 5.0 µg/L

-: No established guideline

Bold: Concentration exceeds CCME CWQG (Short Term)

Bold: Concentration exceeds CCME CWQG (Long Term)

TABLE 16 (Cont'd): Volatile Organic Compounds in Groundwater (CWQG - Protection of Aquatic Life, Marine)
Phase II Environmental Site Assessment
Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	CCME CWQG (Marine)		Groundwater Samples	
					MW23-21	MW23-22
					2023-08-01	2023-08-01
			Short Term	Long Term	493175-29	493175-30
Chloromethane	µg/L	5	-	-	< 5.0	< 5.0
Vinyl Chloride	µg/L	0.5	-	-	< 0.5	< 0.5
Bromomethane	µg/L	5	-	-	< 5.0	< 5.0
Chloroethane	µg/L	5	-	-	< 5.0	< 5.0
Trichlorofluoromethane	µg/L	5	-	-	< 5.0	< 5.0
1,1-Dichloroethylene	µg/L	0.5	-	-	< 0.5	< 0.5
Methylene Chloride	µg/L	5	-	-	< 5.0	< 5.0
1,2-Dichloroethylene (trans)	µg/L	0.5	-	-	< 0.5	< 0.5
1,1-Dichloroethane	µg/L	0.5	-	-	< 0.5	< 0.5
1,2-Dichloroethylene (cis)	µg/L	0.5	-	-	< 0.5	0.8
Bromochloromethane	µg/L	0.5	-	-	< 0.5	< 0.5
Chloroform	µg/L	0.5	-	-	< 0.5	< 0.5
1,1,1-Trichloroethane	µg/L	0.5	-	-	< 0.5	< 0.5
Carbon Tetrachloride	µg/L	0.5	-	-	< 0.5	< 0.5
Benzene	µg/L	0.5	-	110	< 0.5	< 0.5
1,2-Dichloroethane	µg/L	0.5	-	-	< 0.5	< 0.5
Trichloroethylene	µg/L	0.5	-	-	< 0.5	0.7
1,2-Dichloropropane	µg/L	0.5	-	-	< 0.5	< 0.5
Bromodichloromethane	µg/L	0.5	-	-	< 0.5	< 0.5
1,3-Dichloropropylene (trans)	µg/L	0.5	-	-	< 0.5	< 0.5
Toluene	µg/L	0.5	-	215	< 0.5	< 0.5
1,3-Dichloropropylene (cis)	µg/L	0.5	-	-	< 0.5	< 0.5
1,1,2-Trichloroethane	µg/L	0.5	-	-	< 0.5	< 0.5
Tetrachloroethylene	µg/L	0.5	-	-	1.3	3.1
Dibromochloromethane	µg/L	0.5	-	-	< 0.5	< 0.5

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CWQG: Canadian Water Quality Guidelines for the Protection of Aquatic Life, Marine (short term and long term)

LD: Laboratory duplicate

RDL: Reportable detection limit

< 5.0: Concentration is less than reportable detection limit of 5.0 µg/L

-: No established guideline

Bold: Concentration exceeds CCME CWQG (Short Term)

Bold: Concentration exceeds CCME CWQG (Long Term)

TABLE 16 (Cont'd): Volatile Organic Compounds in Groundwater (CWQG - Protection of Aquatic Life, Marine)

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	CCME CWQG (Marine)		Groundwater Samples	
					MW23-21	MW23-22
					2023-08-01	2023-08-01
			Short Term	Long Term	493175-29	493175-30
1,2-Dibromoethane	µg/L	0.5	-	-	< 0.5	< 0.5
Chlorobenzene	µg/L	0.5	-	-	< 0.5	< 0.5
Ethylbenzene	µg/L	0.5	-	25	< 0.5	< 0.5
m,p-Xylenes	µg/L	0.5	-	-	< 0.5	< 0.5
o-Xylene	µg/L	0.5	-	-	< 0.5	< 0.5
Styrene	µg/L	0.5	-	-	< 0.5	< 0.5
Bromoform	µg/L	0.5	-	-	< 0.5	< 0.5
1,1,1,2-Tetrachloroethane	µg/L	0.5	-	-	< 0.5	< 0.5
1,1,2,2-Tetrachloroethane	µg/L	0.5	-	-	< 0.5	< 0.5
1,3-Dichlorobenzene	µg/L	0.5	-	-	< 0.5	< 0.5
1,4-Dichlorobenzene	µg/L	0.5	-	-	< 0.5	< 0.5
1,2-Dichlorobenzene	µg/L	0.5	-	42	< 0.5	< 0.5

CCME: Canadian Council of Ministers of the Environment

CWQG: Canadian Water Quality Guidelines for the Protection of Aquatic Life, Marine (short term and long term)

LD: Laboratory duplicate

RDL: Reportable detection limit

< 5.0: Concentration is less than reportable detection limit of 5.0 µg/L

-: No established guideline

Bold: Concentration exceeds CCME CWQG (Short Term)

Bold: Concentration exceeds CCME CWQG (Long Term)

TABLE 17: Volatile Organic Compounds in Groundwater (Atlantic RBCA - Tier II PSSLs - Indoor Air)

Phase II Environmental Site Assessment

Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	Atlantic RBCA Tier II PSSLs Indoor Air		Groundwater Samples							
					MW23-06	MW23-07	MW23-08	MW23-09	MW23-10	MW23-11	MW23-12	MW23-13
					2023-08-01	2023-08-01	2023-08-01	2023-08-01	2023-08-01	2023-08-01	2023-08-01	2023-08-01
			Residential	Commercial	493175-04	493175-05	493175-06	493175-07	493175-08	493175-09	493175-10	493175-21
Chloromethane	µg/L	5	-	-	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Vinyl Chloride	µg/L	0.5	8.6	99	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromomethane	µg/L	5	-	-	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	µg/L	5	-	-	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Trichlorofluoromethane	µg/L	5	-	-	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1-Dichloroethylene	µg/L	0.5	950	5600	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Methylene Chloride	µg/L	5	-	-	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,2-Dichloroethylene (trans)	µg/L	0.5	820	4900	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1-Dichloroethane	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichloroethylene (cis)	µg/L	0.5	770	4600	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromochloromethane	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	µg/L	0.5	-	-	4.2	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,1-Trichloroethane	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Benzene	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	90	0.9	< 0.5
1,2-Dichloroethane	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethylene	µg/L	0.5	19	110	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichloropropane	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromodichloromethane	µg/L	0.5	-	-	2	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,3-Dichloropropylene (trans)	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	3.3	< 0.5	< 0.5
1,3-Dichloropropylene (cis)	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2-Trichloroethane	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethylene	µg/L	0.5	210	1200	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Dibromochloromethane	µg/L	0.5	-	-	0.7	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5

Atlantic RBCA: Atlantic Risk-Based Corrective Action for Impacted Sites in Atlantic Canada, 2022, Tier II Pathway Specific Screening Levels for Groundwater, Indoor Air (residential and commercial / non-potable / coarse-grained)

LD: Laboratory duplicate

RDL: Reportable detection limit

< 5.0: Concentration is less than reportable detection limit of 5.0 µg/L

-: No established guideline

Bold: Concentration exceeds Atlantic RBCA (Residential)

Bold: Concentration exceeds Atlantic RBCA (Commercial)

TABLE 17 (Cont'd): Volatile Organic Compounds in Groundwater (Atlantic RBCA - Tier II PSSLs - Indoor Air)
Phase II Environmental Site Assessment
Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	Atlantic RBCA Tier II PSSLs Indoor Air		Groundwater Samples							
					MW23-06	MW23-07	MW23-08	MW23-09	MW23-10	MW23-11	MW23-12	MW23-13
					2023-08-01	2023-08-01	2023-08-01	2023-08-01	2023-08-01	2023-08-01	2023-08-01	2023-08-01
			Residential	Commercial	493175-04	493175-05	493175-06	493175-07	493175-08	493175-09	493175-10	493175-21
1,2-Dibromoethane	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	100	33	< 0.5
m,p-Xylenes	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	79	37	< 0.5
o-Xylene	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	3.6	< 0.5	< 0.5
Styrene	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromoform	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,1,2-Tetrachloroethane	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2,2-Tetrachloroethane	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,3-Dichlorobenzene	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,4-Dichlorobenzene	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichlorobenzene	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5

Atlantic RBCA: Atlantic Risk-Based Corrective Action for Impacted Sites in Atlantic Canada, 2022, Tier II Pathway Specific Screening Levels for Groundwater, Indoor Air (residential and commercial / non-potable / coarse-grained)

LD: Laboratory duplicate

RDL: Reportable detection limit

< 5.0: Concentration is less than reportable detection limit of 5.0 µg/L

-: No established guideline

Bold: Concentration exceeds Atlantic RBCA (Residential)

Bold: Concentration exceeds Atlantic RBCA (Commercial)

TABLE 17 (Cont'd): Volatile Organic Compounds in Groundwater (Atlantic RBCA - Tier II PSSLs - Indoor Air)
Phase II Environmental Site Assessment
Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	Atlantic RBCA Tier II PSSLs Indoor Air		Groundwater Samples							
					MW23-14	MW23-15	MW23-16	MW23-17	MW23-18	MW23-19	MW23-20	MW23-20, LD
					2023-08-02	2023-08-02	2023-08-01	2023-08-01	2023-08-01	2023-08-01	2023-08-01	2023-08-01
			Residential	Commercial	493175-22	493175-23	493175-24	493175-25	493175-26	493175-27	493175-28	493175-28
Chloromethane	µg/L	5	-	-	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Vinyl Chloride	µg/L	0.5	8.6	99	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.1	1.2
Bromomethane	µg/L	5	-	-	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	µg/L	5	-	-	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Trichlorofluoromethane	µg/L	5	-	-	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1-Dichloroethylene	µg/L	0.5	950	5600	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Methylene Chloride	µg/L	5	-	-	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,2-Dichloroethylene (trans)	µg/L	0.5	820	4900	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1-Dichloroethane	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.1	1.1
1,2-Dichloroethylene (cis)	µg/L	0.5	770	4600	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromochloromethane	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,1-Trichloroethane	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Benzene	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichloroethane	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethylene	µg/L	0.5	19	110	0.9	0.6	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichloropropane	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromodichloromethane	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,3-Dichloropropylene (trans)	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,3-Dichloropropylene (cis)	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2-Trichloroethane	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethylene	µg/L	0.5	210	1200	8.9	19	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Dibromochloromethane	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5

Atlantic RBCA: Atlantic Risk-Based Corrective Action for Impacted Sites in Atlantic Canada, 2022, Tier II Pathway Specific Screening Levels for Groundwater, Indoor Air (residential and commercial / non-potable / coarse-grained)

LD: Laboratory duplicate

RDL: Reportable detection limit

< 5.0: Concentration is less than reportable detection limit of 5.0 µg/L

-: No established guideline

Bold: Concentration exceeds Atlantic RBCA (Residential)

Bold: Concentration exceeds Atlantic RBCA (Commercial)

TABLE 17 (Cont'd): Volatile Organic Compounds in Groundwater (Atlantic RBCA - Tier II PSSLs - Indoor Air)
Phase II Environmental Site Assessment
Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	Atlantic RBCA Tier II PSSLs Indoor Air		Groundwater Samples							
					MW23-14	MW23-15	MW23-16	MW23-17	MW23-18	MW23-19	MW23-20	MW23-20, LD
					2023-08-02	2023-08-02	2023-08-01	2023-08-01	2023-08-01	2023-08-01	2023-08-01	2023-08-01
			Residential	Commercial	493175-22	493175-23	493175-24	493175-25	493175-26	493175-27	493175-28	493175-28
1,2-Dibromoethane	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	2.4	< 0.5	< 0.5
Ethylbenzene	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
m,p-Xylenes	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
o-Xylene	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Styrene	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromoform	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,1,2-Tetrachloroethane	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2,2-Tetrachloroethane	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,3-Dichlorobenzene	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,4-Dichlorobenzene	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	2.4	< 0.5	< 0.5
1,2-Dichlorobenzene	µg/L	0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5

Atlantic RBCA: Atlantic Risk-Based Corrective Action for Impacted Sites in Atlantic Canada, 2022, Tier II Pathway Specific Screening Levels for Groundwater, Indoor Air (residential and commercial / non-potable / coarse-grained)

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< 5.0: Concentration is less than reportable detection limit of 5.0 µg/L

-: No established guideline

Bold: Concentration exceeds Atlantic RBCA (Residential)

Bold: Concentration exceeds Atlantic RBCA (Commercial)

TABLE 17 (Cont'd): Volatile Organic Compounds in Groundwater (Atlantic RBCA - Tier II PSSLs - Indoor Air)
Phase II Environmental Site Assessment
Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	Atlantic RBCA Tier II PSSLs Indoor Air		Groundwater Samples	
					MW23-21	MW23-22
					2023-08-01	2023-08-01
			Residential	Commercial	493175-29	493175-30
Chloromethane	µg/L	5	-	-	< 5.0	< 5.0
Vinyl Chloride	µg/L	0.5	8.6	99	< 0.5	< 0.5
Bromomethane	µg/L	5	-	-	< 5.0	< 5.0
Chloroethane	µg/L	5	-	-	< 5.0	< 5.0
Trichlorofluoromethane	µg/L	5	-	-	< 5.0	< 5.0
1,1-Dichloroethylene	µg/L	0.5	950	5600	< 0.5	< 0.5
Methylene Chloride	µg/L	5	-	-	< 5.0	< 5.0
1,2-Dichloroethylene (trans)	µg/L	0.5	820	4900	< 0.5	< 0.5
1,1-Dichloroethane	µg/L	0.5	-	-	< 0.5	< 0.5
1,2-Dichloroethylene (cis)	µg/L	0.5	770	4600	< 0.5	0.8
Bromochloromethane	µg/L	0.5	-	-	< 0.5	< 0.5
Chloroform	µg/L	0.5	-	-	< 0.5	< 0.5
1,1,1-Trichloroethane	µg/L	0.5	-	-	< 0.5	< 0.5
Carbon Tetrachloride	µg/L	0.5	-	-	< 0.5	< 0.5
Benzene	µg/L	0.5	-	-	< 0.5	< 0.5
1,2-Dichloroethane	µg/L	0.5	-	-	< 0.5	< 0.5
Trichloroethylene	µg/L	0.5	19	110	< 0.5	0.7
1,2-Dichloropropane	µg/L	0.5	-	-	< 0.5	< 0.5
Bromodichloromethane	µg/L	0.5	-	-	< 0.5	< 0.5
1,3-Dichloropropylene (trans)	µg/L	0.5	-	-	< 0.5	< 0.5
Toluene	µg/L	0.5	-	-	< 0.5	< 0.5
1,3-Dichloropropylene (cis)	µg/L	0.5	-	-	< 0.5	< 0.5
1,1,2-Trichloroethane	µg/L	0.5	-	-	< 0.5	< 0.5
Tetrachloroethylene	µg/L	0.5	210	1200	1.3	3.1
Dibromochloromethane	µg/L	0.5	-	-	< 0.5	< 0.5

Atlantic RBCA: Atlantic Risk-Based Corrective Action for Impacted Sites in Atlantic Canada, 2022, Tier II Pathway Specific Screening Levels for Groundwater, Indoor Air (residential and commercial / non-potable / coarse-grained)

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< 5.0: Concentration is less than reportable detection limit of 5.0 µg/L

-: No established guideline

Bold: Concentration exceeds Atlantic RBCA (Residential)

Bold: Concentration exceeds Atlantic RBCA (Commercial)

TABLE 17 (Cont'd): Volatile Organic Compounds in Groundwater (Atlantic RBCA - Tier II PSSLs - Indoor Air)
Phase II Environmental Site Assessment
Former Queens County Highways Depot, Riverside Drive, Charlottetown, Prince Edward Island

Parameter / *Sample ID* / *Sample Date (Y/M/D)* / *RPC Sample ID*	UNITS	RDL	Atlantic RBCA Tier II PSSLs Indoor Air		Groundwater Samples	
					MW23-21	MW23-22
					2023-08-01	2023-08-01
			Residential	Commercial	493175-29	493175-30
1,2-Dibromoethane	µg/L	0.5	-	-	< 0.5	< 0.5
Chlorobenzene	µg/L	0.5	-	-	< 0.5	< 0.5
Ethylbenzene	µg/L	0.5	-	-	< 0.5	< 0.5
m,p-Xylenes	µg/L	0.5	-	-	< 0.5	< 0.5
o-Xylene	µg/L	0.5	-	-	< 0.5	< 0.5
Styrene	µg/L	0.5	-	-	< 0.5	< 0.5
Bromoform	µg/L	0.5	-	-	< 0.5	< 0.5
1,1,1,2-Tetrachloroethane	µg/L	0.5	-	-	< 0.5	< 0.5
1,1,2,2-Tetrachloroethane	µg/L	0.5	-	-	< 0.5	< 0.5
1,3-Dichlorobenzene	µg/L	0.5	-	-	< 0.5	< 0.5
1,4-Dichlorobenzene	µg/L	0.5	-	-	< 0.5	< 0.5
1,2-Dichlorobenzene	µg/L	0.5	-	-	< 0.5	< 0.5

Atlantic RBCA: Atlantic Risk-Based Corrective Action for Impacted Sites in Atlantic Canada, 2022, Tier II Pathway Specific Screening Levels for Groundwater, Indoor Air (residential and commercial / non-potable / coarse-grained)

LD: Laboratory duplicate

RDL: Reportable detection limit

< 5.0: Concentration is less than reportable detection limit of 5.0 µg/L

-: No established guideline

Bold: Concentration exceeds Atlantic RBCA (Residential)

Bold: Concentration exceeds Atlantic RBCA (Commercial)

Appendix G Certificates of Analysis

Report ID: 491420-OAS
Report Date: 25-Jul-23
Date Received: 24-Jul-23

CERTIFICATE OF ANALYSIS

for

All-Tech Environmental Service Ltd
885 Bayside Drive
Saint John, NB E2R 1A3

rpc
921 College Hill Rd
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Canada E3B 6Z9
Tel: 506.452.1212
Fax: 506.452.0594
www.rpc.ca

Attention: Vladimir Trajkovic
Project #: PE23251
Location: PEI Government Garage

Hydrocarbon Analysis in Soil (Atlantic MUST)

RPC Sample ID:			491420-1	491420-2
Client Sample ID:			MW23-13, SA3	MW23-13, SA4
Date Sampled:			20-Jul-23	20-Jul-23
Matrix:			soil	soil
Analytes	Units	RL		
Benzene	mg/kg	0.005	< 0.005	0.011
Toluene	mg/kg	0.05	< 0.05	0.06
Ethylbenzene	mg/kg	0.01	< 0.01	0.02
Xylenes	mg/kg	0.05	< 0.05	0.08
VPH C6-C10 (Less BTEX)	mg/kg	2.5	< 2.5	17
EPH >C10-C16	mg/kg	12	140	350
EPH >C16-C21	mg/kg	12	250	630
EPH >C21-C32	mg/kg	12	990	2400
EPH (>C16-C32)	mg/kg	12	1200	3000
Modified TPH Tier 1	mg/kg	21	1400	3400
VPH Surrogate (IBB)	%		104	117
EPH Surrogate (IBB)	%		99	118
EPH Surrogate (C32)	%		97	comment
Resemblance			WFO.LO	WFO.LO
Return to Baseline at C32			No	No
Moisture Content	%		16	15

This report relates only to the sample(s) and information provided to the laboratory.
RL = Reporting Limit; Soil results are expressed on a dry weight basis.

Angela Colford
Lab Supervisor
Organic Analytical Services

Steven Davenport
Senior Technician
Organic Analytical Services

Report ID: 491420-OAS
Report Date: 25-Jul-23
Date Received: 24-Jul-23

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Tel: 506.452.1212
Fax: 506.452.0594
www.rpc.ca

Attention: Vladimir Trajkovic
Project #: PE23251
Location: PEI Government Garage

Volatile Organic Compounds in Soil

RPC Sample ID:			491420-1
Client Sample ID:			MW23-13, SA3
Date Sampled:			20-Jul-23
Matrix:			soil
Analytes	Units	RL	
Chloromethane	mg/kg	0.4	< 0.4
Vinyl Chloride	mg/kg	0.4	< 0.4
Bromomethane	mg/kg	0.4	< 0.4
Chloroethane	mg/kg	0.4	< 0.4
Trichlorofluoromethane	mg/kg	0.4	< 0.4
1,1-Dichloroethylene	mg/kg	0.1	< 0.1
Methylene Chloride	mg/kg	0.1	< 0.1
1,2-Dichloroethylene (trans)	mg/kg	0.1	< 0.1
1,1-Dichloroethane	mg/kg	0.1	< 0.1
1,2-Dichloroethylylene (cis)	mg/kg	0.1	< 0.1
Bromochloromethane	mg/kg	0.1	< 0.1
Chloroform	mg/kg	0.1	< 0.1
1,1,1-Trichloroethane	mg/kg	0.1	< 0.1
Carbon Tetrachloride	mg/kg	0.1	< 0.1
Benzene	mg/kg	0.1	< 0.1
1,2-Dichloroethane	mg/kg	0.1	< 0.1
Trichloroethylene	mg/kg	0.1	< 0.1
1,2-Dichloropropane	mg/kg	0.1	< 0.1
Bromodichloromethane	mg/kg	0.1	< 0.1
1,3-Dichloropropylene (cis)	mg/kg	0.1	< 0.1

This report relates only to the sample(s) and information provided to the laboratory.
RL = Reporting Limit; Soil results are expressed on a dry weight basis.

Angela Colford
Lab Supervisor
Organic Analytical Services

Steven Davenport
Senior Technician
Organic Analytical Services

Report ID: 491420-OAS
Report Date: 25-Jul-23
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www.rpc.ca

Attention: Vladimir Trajkovic
Project #: PE23251
Location: PEI Government Garage

Volatile Organic Compounds in Soil

RPC Sample ID:			491420-1
Client Sample ID:			MW23-13, SA3
Date Sampled:			20-Jul-23
Matrix:			soil
Analytes	Units	RL	
Toluene	mg/kg	0.1	< 0.1
1,3-Dichloropropylene (trans)	mg/kg	0.1	< 0.1
1,1,2-Trichloroethane	mg/kg	0.1	< 0.1
Tetrachloroethylene	mg/kg	0.1	< 0.1
Dibromochloromethane	mg/kg	0.1	< 0.1
1,2-Dibromoethane	mg/kg	0.1	< 0.1
Chlorobenzene	mg/kg	0.1	< 0.1
Ethylbenzene	mg/kg	0.1	< 0.1
m,p-Xylenes	mg/kg	0.1	< 0.1
o-Xylene	mg/kg	0.1	< 0.1
Styrene	mg/kg	0.1	< 0.1
Bromoform	mg/kg	0.1	< 0.1
1,1,2,2-Tetrachloroethane	mg/kg	0.1	< 0.1
1,3-Dichlorobenzene	mg/kg	0.1	< 0.1
1,4-Dichlorobenzene	mg/kg	0.1	< 0.1
1,2-Dichlorobenzene	mg/kg	0.1	< 0.1
1,2-Dichloroethane-d4	%		101
Toluene-d8	%		99
4-Bromofluorobenzene	%		98
Moisture Content	%		16

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Method Summary

OAS-HC03:The Determination of Petroleum Hydrocarbons (Atlantic MUST) in Soil (VPH)
OAS-HC03: Determination of Petroleum Hydrocarbons (Atlantic MUST) in Soil (EPH)
OAS-HC07: Determination of Volatile Organic Compounds in Soil.

Resemblance Legend

Resemblance Code	Resemblance
COMMENT	See General Report Comments
FO	Fuel Oil Fraction
FO.LO	Fuel Oil and Lube Oil Fraction
G	Gasoline Fraction
LO	Lube Oil Fraction
ND	Not Detected
NR	No Resemblance (not-petrogenic in origin)
NRLR	No Resemblance in the lube oil range (>C21-C32).
OP	One Product (unidentified)

Resemblance Code	Resemblance
PAH	Possible PAHs Detected
PG	Possible Gasoline Fraction
PLO	Possible Lube Oil Fraction
PWFO	Possible Weathered Fuel Oil Fraction
PWG	Possible Weathered Gasoline Fraction
TO	Transformer Oil
UP	Unknown Peaks
WFO	Weathered Fuel Oil Fraction
WG	Weathered Gasoline Fraction

General Report Comments

VPH / EPH surrogate(s) unavailable due to product interference/sample dilution.
Return to Baseline: Samples are considered to have returned to baseline if the area from C32-C36 is less than 10% of the area from C10-C32.

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Fax: 506.452.0594
www.rpc.ca

Project #: PE23251
Location: PEI Government Garage
QA/QC Report

RPC Sample ID:			BLANKD7151	BLANKD7154	SPIKED7151	SPIKED7154
Type:			EPH	VPH	EPH	VPH
Matrix:			soil	soil	soil	soil
Analytes	Units	RL			% Recovery	% Recovery
Benzene	mg/kg	0.005	-	< 0.005	-	107%
Toluene	mg/kg	0.05	-	< 0.05	-	109%
Ethylbenzene	mg/kg	0.01	-	< 0.01	-	113%
Xylenes	mg/kg	0.05	-	< 0.05	-	114%
VPH C6-C10 (Less BTEX)	mg/kg	2.5	-	< 2.5	-	102%
EPH >C10-C16	mg/kg	12	< 12	-	-	-
EPH >C16-C21	mg/kg	12	< 12	-	-	-
EPH >C21-C32	mg/kg	12	< 12	-	-	-
EPH >C10-C32	mg/kg	21	-	-	105%	-

RL = Reporting Limit

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Project #: PE23251
Location: PEI Government Garage
QA/QC Report

RPC Sample ID:			BLANKD7149	SPIKED7149
Matrix:			soil	soil
Analytes	Units	RL		% Recovery
Chloromethane	mg/kg	0.4	< 0.4	126%
Vinyl Chloride	mg/kg	0.4	< 0.4	119%
Bromomethane	mg/kg	0.4	< 0.4	104%
Chloroethane	mg/kg	0.4	< 0.4	107%
Trichlorofluoromethane	mg/kg	0.4	< 0.4	103%
1,1-Dichloroethylene	mg/kg	0.1	< 0.1	113%
Methylene Chloride	mg/kg	0.1	< 0.1	110%
1,2-Dichloroethylene (trans)	mg/kg	0.1	< 0.1	111%
1,1-Dichloroethane	mg/kg	0.1	< 0.1	117%
1,2-Dichloroethylylene (cis)	mg/kg	0.1	< 0.1	112%
Bromochloromethane	mg/kg	0.1	< 0.1	110%
Chloroform	mg/kg	0.1	< 0.1	114%
1,1,1-Trichloroethane	mg/kg	0.1	< 0.1	113%
Carbon Tetrachloride	mg/kg	0.1	< 0.1	114%
Benzene	mg/kg	0.1	< 0.1	121%
1,2-Dichloroethane	mg/kg	0.1	< 0.1	116%
Trichloroethylene	mg/kg	0.1	< 0.1	113%
1,2-Dichloropropane	mg/kg	0.1	< 0.1	112%
Bromodichloromethane	mg/kg	0.1	< 0.1	106%
1,3-Dichloropropylene (cis)	mg/kg	0.1	< 0.1	109%

RL = Reporting Limit

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Project #: PE23251
Location: PEI Government Garage
QA/QC Report

RPC Sample ID:			BLANKD7149	SPIKED7149
Matrix:			soil	soil
Analytes	Units	RL		% Recovery
Toluene	mg/kg	0.1	< 0.1	121%
1,3-Dichloropropylene (trans)	mg/kg	0.1	< 0.1	117%
1,1,2-Trichloroethane	mg/kg	0.1	< 0.1	113%
Tetrachloroethylene	mg/kg	0.1	< 0.1	118%
Dibromochloromethane	mg/kg	0.1	< 0.1	102%
1,2-Dibromoethane	mg/kg	0.1	< 0.1	106%
Chlorobenzene	mg/kg	0.1	< 0.1	118%
Ethylbenzene	mg/kg	0.1	< 0.1	120%
m,p-Xylenes	mg/kg	0.1	< 0.1	117%
o-Xylene	mg/kg	0.1	< 0.1	116%
Styrene	mg/kg	0.1	< 0.1	112%
Bromoform	mg/kg	0.1	< 0.1	98%
1,1,2,2-Tetrachloroethane	mg/kg	0.1	< 0.1	111%
1,3-Dichlorobenzene	mg/kg	0.1	< 0.1	118%
1,4-Dichlorobenzene	mg/kg	0.1	< 0.1	115%
1,2-Dichlorobenzene	mg/kg	0.1	< 0.1	114%

RL = Reporting Limit

Report ID: 491420-OAS
Report Date: 25-Jul-23
Date Received: 24-Jul-23

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Project #: PE23251

Summary of Date Analyzed

	VPH		EPH		VOC	
RPC Sample ID	**Extracted**	**Analyzed**	**Extracted**	**Analyzed**	**Extracted**	**Analyzed**
491420-1	24-Jul-23	25-Jul-23	24-Jul-23	24-Jul-23	24-Jul-23	24-Jul-23
491420-2	24-Jul-23	25-Jul-23	24-Jul-23	24-Jul-23	-	-

Report ID: 491969-OAS
Report Date: 03-Aug-23
Date Received: 26-Jul-23

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Attention: Vladimir Trajkovic
Project #: PE23251
Location: PEI Government Garage

Hydrocarbon Analysis in Soil (Atlantic MUST)

RPC Sample ID:			491969-01	491969-02	491969-03	491969-04	491969-05	491969-06
Client Sample ID:			BH23-02, SA1	BH23-04, SA2	BH23-05, SA1	BH23-06, SA1	BH23-07, SA1	BH23-08, SA1
Date Sampled:			26-Jul-23	19-Jul-23	20-Jul-23	20-Jul-23	20-Jul-23	20-Jul-23
Matrix:			soil	soil	soil	soil	soil	soil
Analytes	Units	RL						
Benzene	mg/kg	0.005	0.064	< 0.005	< 0.005	1.0	0.06	< 0.005
Toluene	mg/kg	0.05	0.12	< 0.05	< 0.05	< 0.2	< 0.1	< 0.05
Ethylbenzene	mg/kg	0.01	0.01	< 0.01	< 0.01	150	30	< 0.01
Xylenes	mg/kg	0.05	0.09	< 0.05	< 0.05	190	45	< 0.05
VPH C6-C10 (Less BTEX)	mg/kg	2.5	< 2.5	< 2.5	< 2.5	3100	850	< 2.5
EPH >C10-C16	mg/kg	12	< 12	< 12	< 12	720	910	< 12
EPH >C16-C21	mg/kg	12	< 12	< 12	< 12	250	350	< 12
EPH >C21-C32	mg/kg	12	33	< 12	24	70	99	< 12
EPH (>C16-C32)	mg/kg	12	33	< 12	24	320	450	< 12
Modified TPH Tier 1	mg/kg	21	33	< 21	24	4100	2200	< 21
VPH Surrogate (IBB)	%		87	92	125	comment	comment	93
EPH Surrogate (IBB)	%		102	98	102	116	comment	99
EPH Surrogate (C32)	%		110	92	115	108	96	92
Resemblance			PLO	ND	PLO	PG.WFO	PG.WFO	ND
Return to Baseline at C32			Yes	Yes	No	Yes	Yes	Yes
Moisture Content	%		25	13	42	51	12	14

This report relates only to the sample(s) and information provided to the laboratory.
RL = Reporting Limit; Soil results are expressed on a dry weight basis.

Angela Colford
Lab Supervisor
Organic Analytical Services

Steven Davenport
Senior Technician
Organic Analytical Services

Report ID: 491969-OAS
Report Date: 03-Aug-23
Date Received: 26-Jul-23

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Attention: Vladimir Trajkovic
Project #: PE23251
Location: PEI Government Garage

Hydrocarbon Analysis in Soil (Atlantic MUST)

RPC Sample ID:			491969-07	491969-08	491969-09	491969-10	491969-11	491969-12
Client Sample ID:			BH23-09, SA1	BH23-10, SA1	BH23-11, SA1	BH23-13, SA1	BH23-14, SA1	BH23-15, SA1
Date Sampled:			20-Jul-23	20-Jul-23	21-Jul-23	21-Jul-23	21-Jul-23	21-Jul-23
Matrix:			soil	soil	soil	soil	soil	soil
Analytes	Units	RL						
Benzene	mg/kg	0.005	< 0.005	0.08	< 0.005	2.7	< 0.005	< 0.005
Toluene	mg/kg	0.05	< 0.05	1.9	< 0.05	25	< 0.05	< 0.05
Ethylbenzene	mg/kg	0.01	< 0.01	3.5	< 0.01	17	< 0.01	< 0.01
Xylenes	mg/kg	0.05	< 0.05	24	< 0.05	120	< 0.05	< 0.05
VPH C6-C10 (Less BTEX)	mg/kg	2.5	< 2.5	1100	< 2.5	2600	< 2.5	< 2.5
EPH >C10-C16	mg/kg	12	< 12	2400	< 12	7000	< 12	< 12
EPH >C16-C21	mg/kg	12	< 12	1000	< 12	3800	< 12	< 12
EPH >C21-C32	mg/kg	12	< 12	6400	< 12	23000	< 12	< 12
EPH (>C16-C32)	mg/kg	12	< 12	7400	< 12	27000	< 12	< 12
Modified TPH Tier 1	mg/kg	21	< 21	11000	< 21	36000	< 21	< 21
VPH Surrogate (IBB)	%		89	comment	94	comment	99	92
EPH Surrogate (IBB)	%		102	comment	90	comment	105	98
EPH Surrogate (C32)	%		95	comment	94	comment	110	92
Resemblance			ND	OP.FO.LO	ND	OP.FO.LO	ND	ND
Return to Baseline at C32			Yes	No	Yes	Yes	Yes	Yes
Moisture Content	%		11	13	12	13	19	15

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Hydrocarbon Analysis in Soil (Atlantic MUST)

RPC Sample ID:			491969-13	491969-14	491969-14 Dup	491969-15	491969-16	491969-17
Client Sample ID:			BH23-16, SA1	BH23-17, SA1	BH23-17, SA1	BH23-18, SA1	BH23-19, SA1	BH23-20, SA1
Date Sampled:			21-Jul-23	21-Jul-23	21-Jul-23	21-Jul-23	21-Jul-23	21-Jul-23
Matrix:			soil	soil	soil	soil	soil	soil
Analytes	Units	RL						
Benzene	mg/kg	0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.17	< 0.005
Toluene	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Ethylbenzene	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	3.5	< 0.01
Xylenes	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	5.2	< 0.05
VPH C6-C10 (Less BTEX)	mg/kg	2.5	< 2.5	< 2.5	< 2.5	< 2.5	190	< 2.5
EPH >C10-C16	mg/kg	12	< 12	< 12	< 12	< 12	1600	14
EPH >C16-C21	mg/kg	12	< 12	< 12	< 12	< 12	850	< 12
EPH >C21-C32	mg/kg	12	< 12	< 12	< 12	< 12	93	< 12
EPH (>C16-C32)	mg/kg	12	< 12	< 12	< 12	< 12	940	< 12
Modified TPH Tier 1	mg/kg	21	< 21	< 21	< 21	< 21	2700	< 21
VPH Surrogate (IBB)	%		95	97	98	95	123	106
EPH Surrogate (IBB)	%		104	101	104	108	108	89
EPH Surrogate (C32)	%		113	112	115	120	104	88
Resemblance			ND	ND	ND	ND	WFO	ND
Return to Baseline at C32			Yes	Yes	Yes	Yes	Yes	Yes
Moisture Content	%		17	13	13	15	16	14

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Attention: Vladimir Trajkovic
Project #: PE23251
Location: PEI Government Garage

Hydrocarbon Analysis in Soil (Atlantic MUST)

RPC Sample ID:			491969-18	491969-19	491969-19 Dup	491969-20	491969-21	491969-22
Client Sample ID:			BH23-21, SA1	BH23-22, SA1	BH23-22, SA1	BH23-23, SA1	BH23-24, SA1	BH23-25, SA1
Date Sampled:			21-Jul-23	24-Jul-23	24-Jul-23	24-Jul-23	25-Jul-23	25-Jul-23
Matrix:			soil	soil	soil	soil	soil	soil
Analytes	Units	RL						
Benzene	mg/kg	0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Toluene	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Ethylbenzene	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Xylenes	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
VPH C6-C10 (Less BTEX)	mg/kg	2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5
EPH >C10-C16	mg/kg	12	< 12	< 12	< 12	< 12	< 12	< 12
EPH >C16-C21	mg/kg	12	< 12	< 12	< 12	< 12	< 12	< 12
EPH >C21-C32	mg/kg	12	< 12	13	19	< 12	< 12	< 12
EPH (>C16-C32)	mg/kg	12	< 12	13	19	< 12	< 12	< 12
Modified TPH Tier 1	mg/kg	21	< 21	< 21	< 21	< 21	< 21	< 21
VPH Surrogate (IBB)	%		108	105	87	100	101	103
EPH Surrogate (IBB)	%		104	98	97	90	103	108
EPH Surrogate (C32)	%		116	109	102	100	106	114
Resemblance			ND	ND	ND	ND	ND	ND
Return to Baseline at C32			Yes	No	No	Yes	Yes	Yes
Moisture Content	%		17	9	9	11	16	12

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Report Date: 03-Aug-23
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Attention: Vladimir Trajkovic
Project #: PE23251
Location: PEI Government Garage

Hydrocarbon Analysis in Soil (Atlantic MUST)

RPC Sample ID:			491969-23	491969-24
Client Sample ID:			BH23-26, SA1	BH23-27, SA1
Date Sampled:			25-Jul-23	25-Jul-23
Matrix:			soil	soil
Analytes	Units	RL		
Benzene	mg/kg	0.005	0.021	< 0.005
Toluene	mg/kg	0.05	0.10	< 0.05
Ethylbenzene	mg/kg	0.01	0.04	< 0.01
Xylenes	mg/kg	0.05	0.20	< 0.05
VPH C6-C10 (Less BTEX)	mg/kg	2.5	3.6	< 2.5
EPH >C10-C16	mg/kg	12	100	< 12
EPH >C16-C21	mg/kg	12	440	< 12
EPH >C21-C32	mg/kg	12	2900	< 12
EPH (>C16-C32)	mg/kg	12	3300	< 12
Modified TPH Tier 1	mg/kg	21	3400	< 21
VPH Surrogate (IBB)	%		123	111
EPH Surrogate (IBB)	%		87	96
EPH Surrogate (C32)	%		comment	96
Resemblance			WFO.LO	ND
Return to Baseline at C32			No	Yes
Moisture Content	%		17	11

Report ID: 491969-OAS
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Attention: Vladimir Trajkovic
Project #: PE23251
Location: PEI Government Garage

PAH in Soil

RPC Sample ID:			491969-01	491969-19	491969-19 Dup	491969-20
Client Sample ID:			BH23-02, SA1	BH23-22, SA1	BH23-22, SA1	BH23-23, SA1
Date Sampled:			26-Jul-23	24-Jul-23	24-Jul-23	24-Jul-23
Matrix:			soil	soil	soil	soil
Analytes	Units	RL				
Naphthalene	mg/kg	0.01	0.04	< 0.01	< 0.01	< 0.01
Acenaphthylene	mg/kg	0.01	0.08	< 0.01	< 0.01	< 0.01
Acenaphthene	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	mg/kg	0.01	0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	mg/kg	0.01	0.15	< 0.01	< 0.01	< 0.01
Anthracene	mg/kg	0.01	0.10	< 0.01	< 0.01	< 0.01
Fluoranthene	mg/kg	0.01	0.89	< 0.01	< 0.01	< 0.01
Pyrene	mg/kg	0.01	0.76	< 0.01	< 0.01	< 0.01
Benz(a)anthracene	mg/kg	0.01	0.46	< 0.01	< 0.01	< 0.01
Chrysene/Triphenylene	mg/kg	0.01	0.46	< 0.01	< 0.01	< 0.01
Benzo(b+j)fluoranthene	mg/kg	0.01	0.65	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	mg/kg	0.01	0.20	< 0.01	< 0.01	< 0.01
Benzo(e)pyrene	mg/kg	0.01	0.28	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	mg/kg	0.01	0.34	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-c,d)pyrene	mg/kg	0.01	0.22	< 0.01	< 0.01	< 0.01
Benzo(g,h,i)perylene	mg/kg	0.01	0.20	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	mg/kg	0.01	0.05	< 0.01	< 0.01	< 0.01
2-fluorobiphenyl (surrogate)	%		94	89	94	89
p-terphenyl-d14 (surrogate)	%		96	91	101	90
Moisture Content	%		25	9	9	11

This report relates only to the sample(s) and information provided to the laboratory.
RL = Reporting Limit; Soil results are expressed on a dry weight basis.

Angela Colford
Lab Supervisor
Organic Analytical Services

Steven Davenport
Senior Technician
Organic Analytical Services

Report ID: 491969-OAS
Report Date: 03-Aug-23
Date Received: 26-Jul-23

CERTIFICATE OF ANALYSIS

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Attention: Vladimir Trajkovic
Project #: PE23251
Location: PEI Government Garage

PCB's in Soil

RPC Sample ID:			491969-01	491969-19	491969-20
Client Sample ID:			BH23-02, SA1	BH23-22, SA1	BH23-23, SA1
Date Sampled:			26-Jul-23	24-Jul-23	24-Jul-23
Matrix:			soil	soil	soil
Analytes	Units	RL			
Total PCB	mg/kg	0.05	< 0.05	< 0.05	< 0.05
PCB Surrogate (DCB)	%		115	120	121
Resemblance			ND	ND	ND
Moisture Content	%		25	9	11

This report relates only to the sample(s) and information provided to the laboratory.
RL = Reporting Limit; Soil results are expressed on a dry weight basis.

Karen Broad
Chemist
Organic Analytical Services

Nigel Skinner
Senior Technician
Organic Analytical Services

Report ID: 491969-OAS
Report Date: 03-Aug-23
Date Received: 26-Jul-23

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Attention: Vladimir Trajkovic
Project #: PE23251
Location: PEI Government Garage

Volatile Organic Compounds in Soil

RPC Sample ID:			491969-06	491969-07	491969-08	491969-09	491969-14	491969-14 Dup
Client Sample ID:			BH23-08, SA1	BH23-09, SA1	BH23-10, SA1	BH23-11, SA1	BH23-17, SA1	BH23-17, SA1
Date Sampled:			20-Jul-23	20-Jul-23	20-Jul-23	21-Jul-23	21-Jul-23	21-Jul-23
Matrix:			soil	soil	soil	soil	soil	soil
Analytes	Units	RL						
Chloromethane	mg/kg	0.2	< 0.2	< 0.2	< 0.6	< 0.2	< 0.2	< 0.2
Vinyl Chloride	mg/kg	0.06	< 0.06	< 0.06	< 0.18	< 0.06	< 0.06	< 0.06
Bromomethane	mg/kg	0.2	< 0.2	< 0.2	< 0.6	< 0.2	< 0.2	< 0.2
Chloroethane	mg/kg	0.2	< 0.2	< 0.2	< 0.6	< 0.2	< 0.2	< 0.2
Trichlorofluoromethane	mg/kg	0.2	< 0.2	< 0.2	< 0.6	< 0.2	< 0.2	< 0.2
1,1-Dichloroethylene	mg/kg	0.04	< 0.04	< 0.04	< 0.12	< 0.04	< 0.04	< 0.04
Methylene Chloride	mg/kg	0.2	< 0.2	< 0.2	< 0.6	< 0.2	< 0.2	< 0.2
1,2-Dichloroethylene (trans)	mg/kg	0.02	< 0.02	< 0.02	< 0.06	< 0.02	< 0.02	< 0.02
1,1-Dichloroethane	mg/kg	0.02	< 0.02	< 0.02	< 0.06	< 0.02	< 0.02	< 0.02
1,2-Dichloroethylylene (cis)	mg/kg	0.02	< 0.02	< 0.02	< 0.06	< 0.02	< 0.02	< 0.02
Bromochloromethane	mg/kg	0.02	< 0.02	< 0.02	< 0.06	< 0.02	< 0.02	< 0.02
Chloroform	mg/kg	0.02	< 0.02	< 0.02	< 0.06	< 0.02	< 0.02	< 0.02
1,1,1-Trichloroethane	mg/kg	0.02	< 0.02	< 0.02	< 0.06	< 0.02	< 0.02	< 0.02
Carbon Tetrachloride	mg/kg	0.04	< 0.04	< 0.04	< 0.12	< 0.04	< 0.04	< 0.04
Benzene	mg/kg	0.02	< 0.02	< 0.02	0.08	< 0.02	< 0.02	< 0.02
1,2-Dichloroethane	mg/kg	0.02	< 0.02	< 0.02	< 0.06	< 0.02	< 0.02	< 0.02
Trichloroethylene	mg/kg	0.02	< 0.02	< 0.02	< 0.06	< 0.02	< 0.02	< 0.02
1,2-Dichloropropane	mg/kg	0.02	< 0.02	< 0.02	< 0.06	< 0.02	< 0.02	< 0.02
Bromodichloromethane	mg/kg	0.02	< 0.02	< 0.02	< 0.06	< 0.02	< 0.02	< 0.02
1,3-Dichloropropylene (cis)	mg/kg	0.02	< 0.02	< 0.02	< 0.06	< 0.02	< 0.02	< 0.02

This report relates only to the sample(s) and information provided to the laboratory.
RL = Reporting Limit; Soil results are expressed on a dry weight basis.

Angela Colford
Lab Supervisor
Organic Analytical Services

Steven Davenport
Senior Technician
Organic Analytical Services

Report ID: 491969-OAS
Report Date: 03-Aug-23
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Attention: Vladimir Trajkovic
Project #: PE23251
Location: PEI Government Garage

Volatile Organic Compounds in Soil

RPC Sample ID:			491969-06	491969-07	491969-08	491969-09	491969-14	491969-14 Dup
Client Sample ID:			BH23-08, SA1	BH23-09, SA1	BH23-10, SA1	BH23-11, SA1	BH23-17, SA1	BH23-17, SA1
Date Sampled:			20-Jul-23	20-Jul-23	20-Jul-23	21-Jul-23	21-Jul-23	21-Jul-23
Matrix:			soil	soil	soil	soil	soil	soil
Analytes	Units	RL						
Toluene	mg/kg	0.02	< 0.02	< 0.02	2.0	< 0.02	< 0.02	< 0.02
1,3-Dichloropropylene (trans)	mg/kg	0.02	< 0.02	< 0.02	< 0.06	< 0.02	< 0.02	< 0.02
1,1,2-Trichloroethane	mg/kg	0.02	< 0.02	< 0.02	< 0.06	< 0.02	< 0.02	< 0.02
Tetrachloroethylene	mg/kg	0.02	< 0.02	< 0.02	0.70	< 0.02	< 0.02	< 0.02
Dibromochloromethane	mg/kg	0.02	< 0.02	< 0.02	< 0.06	< 0.02	< 0.02	< 0.02
1,2-Dibromoethane	mg/kg	0.02	< 0.02	< 0.02	< 0.06	< 0.02	< 0.02	< 0.02
Chlorobenzene	mg/kg	0.02	< 0.02	< 0.02	< 0.06	< 0.02	< 0.02	< 0.02
Ethylbenzene	mg/kg	0.02	< 0.02	< 0.02	3.9	< 0.02	< 0.02	< 0.02
m,p-Xylenes	mg/kg	0.02	< 0.02	< 0.02	15	< 0.02	< 0.02	< 0.02
o-Xylene	mg/kg	0.02	< 0.02	< 0.02	11	< 0.02	< 0.02	< 0.02
Styrene	mg/kg	0.02	< 0.02	< 0.02	< 0.06	< 0.02	< 0.02	< 0.02
Bromoform	mg/kg	0.02	< 0.02	< 0.02	< 0.06	< 0.02	< 0.02	< 0.02
1,1,2,2-Tetrachloroethane	mg/kg	0.02	< 0.02	< 0.02	< 0.06	< 0.02	< 0.02	< 0.02
1,3-Dichlorobenzene	mg/kg	0.02	< 0.02	< 0.02	< 0.06	< 0.02	< 0.02	< 0.02
1,4-Dichlorobenzene	mg/kg	0.02	< 0.02	< 0.02	< 0.06	< 0.02	< 0.02	< 0.02
1,2-Dichlorobenzene	mg/kg	0.02	< 0.02	< 0.02	< 0.06	< 0.02	< 0.02	< 0.02
1,2-Dichloroethane-d4	%	0	101	100	101	103	103	102
Toluene-d8	%		99	98	99	99	100	101
4-Bromofluorobenzene	%		96	99	93	97	96	97
Moisture Content	%		14	11	13	12	13	13

Report ID: 491969-OAS
Report Date: 03-Aug-23
Date Received: 26-Jul-23

CERTIFICATE OF ANALYSIS

for
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www.rpc.ca

Attention: Vladimir Trajkovic
Project #: PE23251
Location: PEI Government Garage

Volatile Organic Compounds in Soil

RPC Sample ID:			491969-15	491969-17	491969-19	491969-20
Client Sample ID:			BH23-18, SA1	BH23-20, SA1	BH23-22, SA1	BH23-23, SA1
Date Sampled:			21-Jul-23	21-Jul-23	24-Jul-23	24-Jul-23
Matrix:			soil	soil	soil	soil
Analytes	Units	RL				
Chloromethane	mg/kg	0.2	< 0.2	< 0.2	< 0.2	< 0.2
Vinyl Chloride	mg/kg	0.06	< 0.06	< 0.06	< 0.06	< 0.06
Bromomethane	mg/kg	0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chloroethane	mg/kg	0.2	< 0.2	< 0.2	< 0.2	< 0.2
Trichlorofluoromethane	mg/kg	0.2	< 0.2	< 0.2	< 0.2	< 0.2
1,1-Dichloroethylene	mg/kg	0.04	< 0.04	< 0.04	< 0.04	< 0.04
Methylene Chloride	mg/kg	0.2	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichloroethylene (trans)	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,1-Dichloroethane	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,2-Dichloroethylylene (cis)	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02
Bromochloromethane	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02
Chloroform	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,1,1-Trichloroethane	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02
Carbon Tetrachloride	mg/kg	0.04	< 0.04	< 0.04	< 0.04	< 0.04
Benzene	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,2-Dichloroethane	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02
Trichloroethylene	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,2-Dichloropropane	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02
Bromodichloromethane	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,3-Dichloropropylene (cis)	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02

Report ID: 491969-OAS
Report Date: 03-Aug-23
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Attention: Vladimir Trajkovic
Project #: PE23251
Location: PEI Government Garage

Volatile Organic Compounds in Soil

RPC Sample ID:			491969-15	491969-17	491969-19	491969-20
Client Sample ID:			BH23-18, SA1	BH23-20, SA1	BH23-22, SA1	BH23-23, SA1
Date Sampled:			21-Jul-23	21-Jul-23	24-Jul-23	24-Jul-23
Matrix:			soil	soil	soil	soil
Analytes	Units	RL				
Toluene	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,3-Dichloropropylene (trans)	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,1,2-Trichloroethane	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02
Tetrachloroethylene	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02
Dibromochloromethane	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,2-Dibromoethane	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02
Chlorobenzene	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02
Ethylbenzene	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02
m,p-Xylenes	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02
o-Xylene	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02
Styrene	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02
Bromoform	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,1,2,2-Tetrachloroethane	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,3-Dichlorobenzene	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,4-Dichlorobenzene	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,2-Dichlorobenzene	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,2-Dichloroethane-d4	%	0	102	104	102	102
Toluene-d8	%		100	99	100	98
4-Bromofluorobenzene	%		95	96	95	94

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Method Summary

OAS-HC03:The Determination of Petroleum Hydrocarbons (Atlantic MUST) in Soil (VPH)
OAS-HC03: Determination of Petroleum Hydrocarbons (Atlantic MUST) in Soil (EPH)
OAS-HC06:The Determination of Polynuclear Aromatic Hydrocarbons in Soil
The Determination of Polychlorinated biphenyls in Soil. (Solvent extraction, followed by GC-ECD analysis; based on USEPA 3570/8082.)
OAS-HC07: Determination of Volatile Organic Compounds in Soil.

Resemblance Legend

Resemblance Code	Resemblance
ARO1242/54	Mix of Aroclors 1242,1254.
ARO1242/60	Mix of Aroclors 1242,1260.
ARO1254/60	Mix of Aroclors 1254, 1260.
ARO.1016	Aroclor 1016
ARO.1242	Aroclor 1242
ARO.1248	Aroclor 1248.
ARO.1254	Aroclor 1254
ARO.1260	Aroclor 1260
COMMENT	See General Report Comments
FO	Fuel Oil Fraction
FO.LO	Fuel Oil and Lube Oil Fraction
G	Gasoline Fraction
LO	Lube Oil Fraction
MIXTURE	Mix of Aroclors 1242, 1254 and 1260.

Resemblance Code	Resemblance
ND	Not Detected
NR	No Resemblance (not-petrogenic in origin)
NRLR	No Resemblance in the lube oil range (>C21-C32).
OP	One Product (unidentified)
PAH	Possible PAHs Detected
PG	Possible Gasoline Fraction
PLO	Possible Lube Oil Fraction
PWFO	Possible Weathered Fuel Oil Fraction
PWG	Possible Weathered Gasoline Fraction
TO	Transformer Oil
UP	Unknown Peaks
WFO	Weathered Fuel Oil Fraction
WG	Weathered Gasoline Fraction

General Report Comments

Samples 491969-7 and -8 - There was a discrepency between the VPH/VOC vial(s) submitted and the EPH soil jar.The VPH/VOC portion was subsampled from the EPH soil jar and used for analysis. Analytical results for VPH/VOC parameters should be regarded as minimum values.
Samples -1, -3, -4, -5, -8, -9, -10, -16, -17, -19, -20, -23 - EPH extracts were treated with silica gel to remove polar interferences.
Elevated RL's due to sample dilution.
Return to Baseline: Samples are considered to have returned to baseline if the area from C32-C36 is less than 10% of the area from C10-C32.

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Project #: PE23251
Location: PEI Government Garage
QA/QC Report

RPC Sample ID:			BLANKD7191	BLANKD7192	BLANKD7210	BLANKD7224	SPIKED7191	SPIKED7192
Type:			VPH	VPH	EPH	EPH	VPH	VPH
Matrix:			soil	soil	soil	soil	soil	soil
Analytes	Units	RL					% Recovery	% Recovery
Benzene	mg/kg	0.005	< 0.005	< 0.005	-	-	110%	105%
Toluene	mg/kg	0.05	< 0.05	< 0.05	-	-	111%	102%
Ethylbenzene	mg/kg	0.01	< 0.01	< 0.01	-	-	115%	100%
Xylenes	mg/kg	0.05	< 0.05	< 0.05	-	-	114%	99%
VPH C6-C10 (Less BTEX)	mg/kg	2.5	< 2.5	< 2.5	-	-	108%	98%
EPH >C10-C16	mg/kg	12	-	-	< 12	< 12	-	-
EPH >C16-C21	mg/kg	12	-	-	< 12	< 12	-	-
EPH >C21-C32	mg/kg	12	-	-	< 12	< 12	-	-
EPH >C10-C32	mg/kg	21	-	-	-	-	-	-

RL = Reporting Limit

Report ID: 491969-OAS
Report Date: 03-Aug-23
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Project #: PE23251
Location: PEI Government Garage
QA/QC Report

RPC Sample ID:			SPIKED7210	SPIKED7224
Type:			EPH	EPH
Matrix:			soil	soil
Analytes	Units	RL	% Recovery	% Recovery
Benzene	mg/kg	0.005	-	-
Toluene	mg/kg	0.05	-	-
Ethylbenzene	mg/kg	0.01	-	-
Xylenes	mg/kg	0.05	-	-
VPH C6-C10 (Less BTEX)	mg/kg	2.5	-	-
EPH >C10-C16	mg/kg	12	-	-
EPH >C16-C21	mg/kg	12	-	-
EPH >C21-C32	mg/kg	12	-	-
EPH >C10-C32	mg/kg	21	89%	93%

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Project #: PE23251
Location: PEI Government Garage
QA/QC Report

RPC Sample ID:			BLANKD7197	SPIKED7197
Matrix:			soil	soil
Analytes	Units	RL		% Recovery
Naphthalene	mg/kg	0.01	< 0.01	93%
Acenaphthylene	mg/kg	0.01	< 0.01	99%
Acenaphthene	mg/kg	0.01	< 0.01	97%
Fluorene	mg/kg	0.01	< 0.01	97%
Phenanthrene	mg/kg	0.01	< 0.01	93%
Anthracene	mg/kg	0.01	< 0.01	101%
Fluoranthene	mg/kg	0.01	< 0.01	102%
Pyrene	mg/kg	0.01	< 0.01	103%
Benz(a)anthracene	mg/kg	0.01	< 0.01	95%
Chrysene/Triphenylene	mg/kg	0.01	< 0.01	92%
Benzo(b+j)fluoranthene	mg/kg	0.01	< 0.01	88%
Benzo(k)fluoranthene	mg/kg	0.01	< 0.01	90%
Benzo(e)pyrene	mg/kg	0.01	< 0.01	112%
Benzo(a)pyrene	mg/kg	0.01	< 0.01	112%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.01	< 0.01	104%
Benzo(g,h,i)perylene	mg/kg	0.01	< 0.01	104%
Dibenz(a,h)anthracene	mg/kg	0.01	< 0.01	101%

RL = Reporting Limit

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Project #: PE23251
Location: PEI Government Garage
QA/QC Report

RPC Sample ID:			BLANKD7206	SPIKED7206
Matrix:			soil	soil
Analytes	Units	RL		% Recovery
Total PCB	mg/kg	0.05	< 0.05	102%

RL = Reporting Limit

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Project #: PE23251
Location: PEI Government Garage
QA/QC Report

RPC Sample ID:			BLANKD7220	SPIKED7220
Matrix:			soil	soil
Analytes	Units	RL		% Recovery
Chloromethane	mg/kg	0.4	< 0.4	134%
Vinyl Chloride	mg/kg	0.4	< 0.4	133%
Bromomethane	mg/kg	0.4	< 0.4	32%
Chloroethane	mg/kg	0.4	< 0.4	101%
Trichlorofluoromethane	mg/kg	0.4	< 0.4	103%
1,1-Dichloroethylene	mg/kg	0.1	< 0.1	113%
Methylene Chloride	mg/kg	0.1	< 0.1	108%
1,2-Dichloroethylene (trans)	mg/kg	0.1	< 0.1	111%
1,1-Dichloroethane	mg/kg	0.1	< 0.1	118%
1,2-Dichloroethylylene (cis)	mg/kg	0.1	< 0.1	111%
Bromochloromethane	mg/kg	0.1	< 0.1	109%
Chloroform	mg/kg	0.1	< 0.1	113%
1,1,1-Trichloroethane	mg/kg	0.1	< 0.1	113%
Carbon Tetrachloride	mg/kg	0.1	< 0.1	111%
Benzene	mg/kg	0.1	< 0.1	119%
1,2-Dichloroethane	mg/kg	0.1	< 0.1	115%
Trichloroethylene	mg/kg	0.1	< 0.1	111%
1,2-Dichloropropane	mg/kg	0.1	< 0.1	111%
Bromodichloromethane	mg/kg	0.1	< 0.1	105%
1,3-Dichloropropylene (cis)	mg/kg	0.1	< 0.1	108%

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Project #: PE23251
Location: PEI Government Garage
QA/QC Report

RPC Sample ID:			BLANKD7220	SPIKED7220
Matrix:			soil	soil
Analytes	Units	RL		% Recovery
Toluene	mg/kg	0.1	< 0.1	121%
1,3-Dichloropropylene (trans)	mg/kg	0.1	< 0.1	114%
1,1,2-Trichloroethane	mg/kg	0.1	< 0.1	110%
Tetrachloroethylene	mg/kg	0.1	< 0.1	113%
Dibromochloromethane	mg/kg	0.1	< 0.1	98%
1,2-Dibromoethane	mg/kg	0.1	< 0.1	105%
Chlorobenzene	mg/kg	0.1	< 0.1	115%
Ethylbenzene	mg/kg	0.1	< 0.1	120%
m,p-Xylenes	mg/kg	0.1	< 0.1	120%
o-Xylene	mg/kg	0.1	< 0.1	119%
Styrene	mg/kg	0.1	< 0.1	115%
Bromoform	mg/kg	0.1	< 0.1	95%
1,1,2,2-Tetrachloroethane	mg/kg	0.1	< 0.1	107%
1,3-Dichlorobenzene	mg/kg	0.1	< 0.1	113%
1,4-Dichlorobenzene	mg/kg	0.1	< 0.1	112%
1,2-Dichlorobenzene	mg/kg	0.1	< 0.1	112%

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Project #: PE23251

Summary of Date Analyzed

	VPH		EPH		PAH	
RPC Sample ID	**Extracted**	**Analyzed**	**Extracted**	**Analyzed**	**Extracted**	**Analyzed**
491969-01	28-Jul-23	29-Jul-23	28-Jul-23	31-Jul-23	28-Jul-23	29-Jul-23
491969-02	28-Jul-23	29-Jul-23	28-Jul-23	29-Jul-23	-	-
491969-03	28-Jul-23	29-Jul-23	28-Jul-23	31-Jul-23	-	-
491969-04	28-Jul-23	29-Jul-23	28-Jul-23	31-Jul-23	-	-
491969-05	28-Jul-23	30-Jul-23	28-Jul-23	31-Jul-23	-	-
491969-06	28-Jul-23	29-Jul-23	28-Jul-23	29-Jul-23	-	-
491969-07	1-Aug-23	1-Aug-23	28-Jul-23	29-Jul-23	-	-
491969-08	1-Aug-23	1-Aug-23	28-Jul-23	31-Jul-23	-	-
491969-09	28-Jul-23	29-Jul-23	28-Jul-23	31-Jul-23	-	-
491969-10	28-Jul-23	30-Jul-23	28-Jul-23	31-Jul-23	-	-
491969-11	28-Jul-23	29-Jul-23	28-Jul-23	29-Jul-23	-	-
491969-12	28-Jul-23	29-Jul-23	28-Jul-23	28-Jul-23	-	-
491969-13	28-Jul-23	29-Jul-23	28-Jul-23	29-Jul-23	-	-
491969-14	28-Jul-23	29-Jul-23	28-Jul-23	30-Jul-23	-	-
491969-14 Dup	28-Jul-23	29-Jul-23	28-Jul-23	30-Jul-23	-	-
491969-15	28-Jul-23	29-Jul-23	28-Jul-23	30-Jul-23	-	-
491969-16	28-Jul-23	30-Jul-23	28-Jul-23	31-Jul-23	-	-
491969-17	28-Jul-23	29-Jul-23	28-Jul-23	31-Jul-23	-	-
491969-18	28-Jul-23	29-Jul-23	28-Jul-23	30-Jul-23	-	-
491969-19	28-Jul-23	29-Jul-23	28-Jul-23	31-Jul-23	28-Jul-23	29-Jul-23

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Summary of Date Analyzed

	VPH		EPH		PAH	
RPC Sample ID	**Extracted**	**Analyzed**	**Extracted**	**Analyzed**	**Extracted**	**Analyzed**
491969-19 Dup	28-Jul-23	29-Jul-23	28-Jul-23	31-Jul-23	28-Jul-23	29-Jul-23
491969-20	28-Jul-23	29-Jul-23	28-Jul-23	31-Jul-23	28-Jul-23	29-Jul-23
491969-21	28-Jul-23	29-Jul-23	28-Jul-23	30-Jul-23	-	-
491969-22	28-Jul-23	29-Jul-23	28-Jul-23	30-Jul-23	-	-
491969-23	28-Jul-23	29-Jul-23	28-Jul-23	1-Aug-23	-	-
491969-24	28-Jul-23	29-Jul-23	28-Jul-23	30-Jul-23	-	-

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Summary of Date Analyzed

	PCB		VOC	
RPC Sample ID	**Extracted**	**Analyzed**	**Extracted**	**Analyzed**
491969-01	28-Jul-23	31-Jul-23	-	-
491969-02	-	-	-	-
491969-03	-	-	-	-
491969-04	-	-	-	-
491969-05	-	-	-	-
491969-06	-	-	28-Jul-23	1-Aug-23
491969-07	-	-	1-Aug-23	1-Aug-23
491969-08	-	-	1-Aug-23	1-Aug-23
491969-09	-	-	28-Jul-23	1-Aug-23
491969-10	-	-	-	-
491969-11	-	-	-	-
491969-12	-	-	-	-
491969-13	-	-	-	-
491969-14	-	-	28-Jul-23	1-Aug-23
491969-14 Dup	-	-	28-Jul-23	1-Aug-23
491969-15	-	-	28-Jul-23	1-Aug-23
491969-16	-	-	-	-
491969-17	-	-	28-Jul-23	1-Aug-23
491969-18	-	-	-	-
491969-19	28-Jul-23	31-Jul-23	28-Jul-23	1-Aug-23

Report ID: 491969-OAS
Report Date: 03-Aug-23
Date Received: 26-Jul-23

CERTIFICATE OF ANALYSIS

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Project #: PE23251

Summary of Date Analyzed

	PCB		VOC	
RPC Sample ID	**Extracted**	**Analyzed**	**Extracted**	**Analyzed**
491969-19 Dup	-	-	-	-
491969-20	28-Jul-23	31-Jul-23	28-Jul-23	1-Aug-23
491969-21	-	-	-	-
491969-22	-	-	-	-
491969-23	-	-	-	-
491969-24	-	-	-	-

Report ID: 491916-OAS
Report Date: 03-Aug-23
Date Received: 26-Jul-23

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Attention: Vladimir Trajkovic
Project #: PE23251
Location: PEI Government Garage

Hydrocarbon Analysis in Soil (Atlantic MUST)

RPC Sample ID:			491916-01	491916-02	491916-03	491916-04	491916-05	491916-06
Client Sample ID:			SS-01	SS-04	SS-05	SS-06	SS-07	SS-08
Date Sampled:			19-Jul-23	19-Jul-23	19-Jul-23	19-Jul-23	19-Jul-23	19-Jul-23
Matrix:			soil	soil	soil	soil	soil	soil
Analytes	Units	RL						
Benzene	mg/kg	0.005	0.95	0.44	1.3	0.30	0.19	0.21
Toluene	mg/kg	0.05	3.2	2.2	5.1	1.4	1.6	1.6
Ethylbenzene	mg/kg	0.01	0.31	0.14	0.37	0.11	0.38	0.25
Xylenes	mg/kg	0.05	4.4	2.9	4.3	1.9	4.3	3.1
VPH C6-C10 (Less BTEX)	mg/kg	2.5	20	11	20	13	20	12
EPH >C10-C16	mg/kg	12	18	< 12	14	16	14	< 12
EPH >C16-C21	mg/kg	12	44	19	22	27	29	18
EPH >C21-C32	mg/kg	12	170	90	73	99	57	68
EPH (>C16-C32)	mg/kg	12	210	110	95	130	86	86
Modified TPH Tier 1	mg/kg	21	250	120	130	160	120	98
VPH Surrogate (IBB)	%		99	105	94	102	96	98
EPH Surrogate (IBB)	%		96	109	102	106	108	107
EPH Surrogate (C32)	%		89	114	95	96	121	92
Resemblance			PG.PAH.LO	PG.PAH.LO	PG.PAH.LO	PG.PAH.LO	PG.PAH.LO	PG.PAH.LO
Return to Baseline at C32			Yes	Yes	Yes	No	Yes	Yes
Moisture Content	%		13	12	16	13	15	17

This report relates only to the sample(s) and information provided to the laboratory.
RL = Reporting Limit; Soil results are expressed on a dry weight basis.

Angela Colford
Lab Supervisor
Organic Analytical Services

Steven Davenport
Senior Technician
Organic Analytical Services

Report ID: 491916-OAS
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Attention: Vladimir Trajkovic
Project #: PE23251
Location: PEI Government Garage

Hydrocarbon Analysis in Soil (Atlantic MUST)

RPC Sample ID:			491916-07	491916-08	491916-09	491916-10	491916-11	491916-12
Client Sample ID:			SS-09	SS-13	SS-16	SS-17	SS-18	SS-19
Date Sampled:			20-Jul-23	21-Jul-23	21-Jul-23	25-Jul-23	25-Jul-23	20-Jul-23
Matrix:			soil	soil	soil	soil	soil	soil
Analytes	Units	RL						
Benzene	mg/kg	0.005	0.084	< 0.005	< 0.005	0.21	0.15	0.025
Toluene	mg/kg	0.05	0.49	< 0.05	< 0.05	19	9.2	0.09
Ethylbenzene	mg/kg	0.01	0.03	< 0.01	< 0.01	0.08	0.08	0.02
Xylenes	mg/kg	0.05	0.43	< 0.05	< 0.05	0.70	0.65	0.17
VPH C6-C10 (Less BTEX)	mg/kg	2.5	5.4	< 2.5	< 2.5	16	8.8	2.8
EPH >C10-C16	mg/kg	12	76	< 12	65	< 12	< 12	75
EPH >C16-C21	mg/kg	12	130	21	290	45	55	130
EPH >C21-C32	mg/kg	12	720	100	290	150	260	640
EPH (>C16-C32)	mg/kg	12	850	120	580	200	320	770
Modified TPH Tier 1	mg/kg	21	930	120	650	210	320	850
VPH Surrogate (IBB)	%		106	97	103	110	89	102
EPH Surrogate (IBB)	%		92	107	95	94	118	95
EPH Surrogate (C32)	%		88	104	94	83	98	85
Resemblance			WFO.LO	WFO.LO	PAH	PWFO.LO	PWFO.LO	WFO.LO
Return to Baseline at C32			No	No	Yes	No	No	No
Moisture Content	%		21	10	10	15	15	21

Report ID: 491916-OAS
Report Date: 03-Aug-23
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Attention: Vladimir Trajkovic
Project #: PE23251
Location: PEI Government Garage

Hydrocarbon Analysis in Soil (Atlantic MUST)

RPC Sample ID:			491916-13	491916-13 Dup	491916-14
Client Sample ID:			SS-21	SS-21	SS-23
Date Sampled:			21-Jul-23	21-Jul-23	26-Jul-23
Matrix:			soil	soil	soil
Analytes	Units	RL			
Benzene	mg/kg	0.005	0.024	0.006	< 0.005
Toluene	mg/kg	0.05	0.14	< 0.05	< 0.05
Ethylbenzene	mg/kg	0.01	0.04	< 0.01	< 0.01
Xylenes	mg/kg	0.05	0.21	< 0.05	< 0.05
VPH C6-C10 (Less BTEX)	mg/kg	2.5	< 2.5	< 2.5	< 2.5
EPH >C10-C16	mg/kg	12	< 12	< 12	< 12
EPH >C16-C21	mg/kg	12	< 12	< 12	39
EPH >C21-C32	mg/kg	12	65	81	150
EPH (>C16-C32)	mg/kg	12	65	81	190
Modified TPH Tier 1	mg/kg	21	65	81	190
VPH Surrogate (IBB)	%		114	95	105
EPH Surrogate (IBB)	%		88	83	92
EPH Surrogate (C32)	%		74	74	83
Resemblance			LO	LO	WFO.LO
Return to Baseline at C32			No	No	No
Moisture Content	%		13	11	14

Report ID: 491916-OAS
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Attention: Vladimir Trajkovic
Project #: PE23251
Location: PEI Government Garage

PAH in Soil

RPC Sample ID:			491916-01	491916-02	491916-03	491916-04	491916-05	491916-06
Client Sample ID:			SS-01	SS-04	SS-05	SS-06	SS-07	SS-08
Date Sampled:			19-Jul-23	19-Jul-23	19-Jul-23	19-Jul-23	19-Jul-23	19-Jul-23
Matrix:			soil	soil	soil	soil	soil	soil
Analytes	Units	RL						
Naphthalene	mg/kg	0.01	0.51	0.25	0.34	0.29	0.64	0.41
Acenaphthylene	mg/kg	0.01	0.73	0.16	0.21	0.26	0.25	0.47
Acenaphthene	mg/kg	0.01	0.06	0.01	0.05	0.05	0.04	0.02
Fluorene	mg/kg	0.01	0.08	0.02	0.06	0.05	0.04	0.03
Phenanthrene	mg/kg	0.01	1.1	0.41	0.76	0.91	0.62	0.45
Anthracene	mg/kg	0.01	0.55	0.13	0.22	0.30	0.20	0.26
Fluoranthene	mg/kg	0.01	3.1	0.94	1.1	2.1	1.7	1.7
Pyrene	mg/kg	0.01	3.3	0.87	1.0	2.1	1.6	1.6
Benz(a)anthracene	mg/kg	0.01	1.7	0.48	0.65	1.3	0.99	1.0
Chrysene/Triphenylene	mg/kg	0.01	1.5	0.44	0.58	1.2	0.92	1.0
Benzo(b+j)fluoranthene	mg/kg	0.01	2.8	0.84	1.3	2.5	2.2	3.1
Benzo(k)fluoranthene	mg/kg	0.01	0.96	0.30	0.47	0.75	0.73	0.92
Benzo(e)pyrene	mg/kg	0.01	1.5	0.43	0.65	1.3	1.1	1.6
Benzo(a)pyrene	mg/kg	0.01	1.8	0.49	0.77	1.5	1.4	1.9
Indeno(1,2,3-c,d)pyrene	mg/kg	0.01	1.0	0.33	0.53	1.1	0.82	1.4
Benzo(g,h,i)perylene	mg/kg	0.01	1.1	0.27	0.40	0.89	0.64	1.2
Dibenz(a,h)anthracene	mg/kg	0.01	0.45	0.08	0.15	0.32	0.21	0.34
2-fluorobiphenyl (surrogate)	%		89	90	86	85	85	86
p-terphenyl-d14 (surrogate)	%		96	96	92	92	87	94
Moisture Content	%		13	12	16	13	15	17

This report relates only to the sample(s) and information provided to the laboratory.
RL = Reporting Limit; Soil results are expressed on a dry weight basis.

Angela Colford
Lab Supervisor
Organic Analytical Services

Steven Davenport
Senior Technician
Organic Analytical Services

Report ID: 491916-OAS
Report Date: 03-Aug-23
Date Received: 26-Jul-23

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Attention: Vladimir Trajkovic
Project #: PE23251
Location: PEI Government Garage

PAH in Soil

RPC Sample ID:			491916-07	491916-08	491916-09	491916-10	491916-11	491916-12
Client Sample ID:			SS-09	SS-13	SS-16	SS-17	SS-18	SS-19
Date Sampled:			20-Jul-23	21-Jul-23	21-Jul-23	25-Jul-23	25-Jul-23	20-Jul-23
Matrix:			soil	soil	soil	soil	soil	soil
Analytes	Units	RL						
Naphthalene	mg/kg	0.01	0.08	< 0.01	13	0.14	0.13	0.12
Acenaphthylene	mg/kg	0.01	0.06	0.03	0.27	0.01	0.01	0.05
Acenaphthene	mg/kg	0.01	0.13	0.02	14	0.06	0.09	0.07
Fluorene	mg/kg	0.01	0.09	0.01	10	0.04	0.05	0.05
Phenanthrene	mg/kg	0.01	0.72	0.14	73	0.47	0.72	0.43
Anthracene	mg/kg	0.01	0.21	0.06	14	0.07	0.09	0.16
Fluoranthene	mg/kg	0.01	1.3	0.42	79	0.51	0.91	1.0
Pyrene	mg/kg	0.01	1.1	0.42	61	0.41	0.74	0.91
Benz(a)anthracene	mg/kg	0.01	0.58	0.20	29	0.20	0.35	0.53
Chrysene/Triphenylene	mg/kg	0.01	0.59	0.20	24	0.17	0.34	0.41
Benzo(b+j)fluoranthene	mg/kg	0.01	0.73	0.42	33	0.27	0.47	0.70
Benzo(k)fluoranthene	mg/kg	0.01	0.25	0.13	13	0.10	0.18	0.24
Benzo(e)pyrene	mg/kg	0.01	0.39	0.25	15	0.15	0.24	0.37
Benzo(a)pyrene	mg/kg	0.01	0.55	0.25	29	0.19	0.34	0.55
Indeno(1,2,3-c,d)pyrene	mg/kg	0.01	0.21	0.17	14	0.10	0.14	0.21
Benzo(g,h,i)perylene	mg/kg	0.01	0.19	0.19	12	0.09	0.13	0.20
Dibenz(a,h)anthracene	mg/kg	0.01	0.05	0.03	3.3	0.02	0.03	0.05
2-fluorobiphenyl (surrogate)	%		83	85	90	83	85	85
p-terphenyl-d14 (surrogate)	%		79	82	96	77	84	82
Moisture Content	%		21	10	10	15	15	21

Report ID: 491916-OAS
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Attention: Vladimir Trajkovic
Project #: PE23251
Location: PEI Government Garage

PAH in Soil

RPC Sample ID:			491916-13	491916-13 Dup	491916-14
Client Sample ID:			SS-21	SS-21	SS-23
Date Sampled:			21-Jul-23	21-Jul-23	26-Jul-23
Matrix:			soil	soil	soil
Analytes	Units	RL			
Naphthalene	mg/kg	0.01	0.01	0.01	0.02
Acenaphthylene	mg/kg	0.01	0.01	0.02	< 0.01
Acenaphthene	mg/kg	0.01	0.01	0.02	0.07
Fluorene	mg/kg	0.01	< 0.01	0.01	0.05
Phenanthrene	mg/kg	0.01	0.07	0.10	0.52
Anthracene	mg/kg	0.01	0.02	0.03	0.10
Fluoranthene	mg/kg	0.01	0.16	0.22	0.81
Pyrene	mg/kg	0.01	0.15	0.20	0.68
Benz(a)anthracene	mg/kg	0.01	0.09	0.13	0.34
Chrysene/Triphenylene	mg/kg	0.01	0.09	0.09	0.29
Benzo(b+j)fluoranthene	mg/kg	0.01	0.18	0.22	0.49
Benzo(k)fluoranthene	mg/kg	0.01	0.06	0.07	0.16
Benzo(e)pyrene	mg/kg	0.01	0.11	0.12	0.26
Benzo(a)pyrene	mg/kg	0.01	0.13	0.17	0.41
Indeno(1,2,3-c,d)pyrene	mg/kg	0.01	0.09	0.11	0.23
Benzo(g,h,i)perylene	mg/kg	0.01	0.09	0.10	0.21
Dibenz(a,h)anthracene	mg/kg	0.01	0.02	0.02	0.05
2-fluorobiphenyl (surrogate)	%		85	84	85
p-terphenyl-d14 (surrogate)	%		86	87	84
Moisture Content	%		13	11	14

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Method Summary

OAS-HC03:The Determination of Petroleum Hydrocarbons (Atlantic MUST) in Soil (VPH)
OAS-HC03: Determination of Petroleum Hydrocarbons (Atlantic MUST) in Soil (EPH)
OAS-HC06:The Determination of Polynuclear Aromatic Hydrocarbons in Soil

Resemblance Legend

Resemblance Code	Resemblance
COMMENT	See General Report Comments
FO	Fuel Oil Fraction
FO.LO	Fuel Oil and Lube Oil Fraction
G	Gasoline Fraction
LO	Lube Oil Fraction
ND	Not Detected
NR	No Resemblance (not-petrogenic in origin)
NRLR	No Resemblance in the lube oil range (>C21-C32).
OP	One Product (unidentified)

Resemblance Code	Resemblance
PAH	Possible PAHs Detected
PG	Possible Gasoline Fraction
PLO	Possible Lube Oil Fraction
PWFO	Possible Weathered Fuel Oil Fraction
PWG	Possible Weathered Gasoline Fraction
TO	Transformer Oil
UP	Unknown Peaks
WFO	Weathered Fuel Oil Fraction
WG	Weathered Gasoline Fraction

General Report Comments

Samples 491916-1 to -14 - EPH extracts were treated with silica gel to remove polar interferences.
Return to Baseline: Samples are considered to have returned to baseline if the area from C32-C36 is less than 10% of the area from C10-C32.

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Project #: PE23251
Location: PEI Government Garage
QA/QC Report

RPC Sample ID:			BLANKD7200	BLANKD7230	SPIKED7200	SPIKED7230
Type:			VPH	EPH	VPH	EPH
Matrix:			soil	soil	soil	soil
Analytes	Units	RL			% Recovery	% Recovery
Benzene	mg/kg	0.005	< 0.005	-	106%	-
Toluene	mg/kg	0.05	< 0.05	-	99%	-
Ethylbenzene	mg/kg	0.01	< 0.01	-	99%	-
Xylenes	mg/kg	0.05	< 0.05	-	97%	-
VPH C6-C10 (Less BTEX)	mg/kg	2.5	< 2.5	-	98%	-
EPH >C10-C16	mg/kg	12	-	< 12	-	-
EPH >C16-C21	mg/kg	12	-	< 12	-	-
EPH >C21-C32	mg/kg	12	-	< 12	-	-
EPH >C10-C32	mg/kg	21	-	-	-	90%

RL = Reporting Limit

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Project #: PE23251
Location: PEI Government Garage
QA/QC Report

RPC Sample ID:			BLANKD7216	SPIKED7216
Matrix:			soil	soil
Analytes	Units	RL		% Recovery
Naphthalene	mg/kg	0.01	< 0.01	99%
Acenaphthylene	mg/kg	0.01	< 0.01	98%
Acenaphthene	mg/kg	0.01	< 0.01	97%
Fluorene	mg/kg	0.01	< 0.01	96%
Phenanthrene	mg/kg	0.01	< 0.01	96%
Anthracene	mg/kg	0.01	< 0.01	95%
Fluoranthene	mg/kg	0.01	< 0.01	95%
Pyrene	mg/kg	0.01	< 0.01	94%
Benz(a)anthracene	mg/kg	0.01	< 0.01	89%
Chrysene/Triphenylene	mg/kg	0.01	< 0.01	96%
Benzo(b+j)fluoranthene	mg/kg	0.01	< 0.01	90%
Benzo(k)fluoranthene	mg/kg	0.01	< 0.01	90%
Benzo(e)pyrene	mg/kg	0.01	< 0.01	102%
Benzo(a)pyrene	mg/kg	0.01	< 0.01	102%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.01	< 0.01	86%
Benzo(g,h,i)perylene	mg/kg	0.01	< 0.01	87%
Dibenz(a,h)anthracene	mg/kg	0.01	< 0.01	87%

RL = Reporting Limit

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Project #: PE23251

Summary of Date Analyzed

	VPH		EPH		PAH	
RPC Sample ID	**Extracted**	**Analyzed**	**Extracted**	**Analyzed**	**Extracted**	**Analyzed**
491916-01	28-Jul-23	30-Jul-23	28-Jul-23	1-Aug-23	28-Jul-23	28-Jul-23
491916-02	28-Jul-23	30-Jul-23	28-Jul-23	2-Aug-23	28-Jul-23	28-Jul-23
491916-03	28-Jul-23	30-Jul-23	28-Jul-23	1-Aug-23	28-Jul-23	28-Jul-23
491916-04	28-Jul-23	30-Jul-23	28-Jul-23	1-Aug-23	28-Jul-23	28-Jul-23
491916-05	28-Jul-23	30-Jul-23	28-Jul-23	1-Aug-23	28-Jul-23	28-Jul-23
491916-06	28-Jul-23	30-Jul-23	28-Jul-23	1-Aug-23	28-Jul-23	28-Jul-23
491916-07	28-Jul-23	30-Jul-23	28-Jul-23	2-Aug-23	28-Jul-23	29-Jul-23
491916-08	28-Jul-23	29-Jul-23	28-Jul-23	2-Aug-23	28-Jul-23	29-Jul-23
491916-09	28-Jul-23	29-Jul-23	31-Jul-23	2-Aug-23	28-Jul-23	1-Aug-23
491916-10	28-Jul-23	30-Jul-23	28-Jul-23	2-Aug-23	28-Jul-23	29-Jul-23
491916-11	28-Jul-23	30-Jul-23	28-Jul-23	2-Aug-23	28-Jul-23	29-Jul-23
491916-12	28-Jul-23	29-Jul-23	28-Jul-23	2-Aug-23	28-Jul-23	29-Jul-23
491916-13	28-Jul-23	30-Jul-23	28-Jul-23	2-Aug-23	28-Jul-23	29-Jul-23
491916-13 Dup	28-Jul-23	30-Jul-23	28-Jul-23	2-Aug-23	28-Jul-23	29-Jul-23
491916-14	28-Jul-23	29-Jul-23	28-Jul-23	2-Aug-23	28-Jul-23	29-Jul-23

Report ID: 491990-OAS
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Attention: Vladimir Trajkovic
Project #: PE23251
Location: PEI Government Garage

Hydrocarbon Analysis in Soil (Atlantic MUST)

RPC Sample ID:			491990-01	491990-02	491990-03	491990-04	491990-05	491990-06
Client Sample ID:			MW23-01, SA1	MW23-01, SA2	MW23-02, SA1	MW23-02, SA2	MW23-03, SA2	MW23-04, SA2
Date Sampled:			18-Jul-23	18-Jul-23	18-Jul-23	18-Jul-23	18-Jul-23	18-Jul-23
Matrix:			soil	soil	soil	soil	soil	soil
Analytes	Units	RL						
Benzene	mg/kg	0.005	0.020	< 0.005	0.097	0.75	< 0.005	0.007
Toluene	mg/kg	0.05	< 0.05	< 0.05	0.39	1.7	< 0.05	< 0.05
Ethylbenzene	mg/kg	0.01	0.03	< 0.01	0.03	0.09	< 0.01	< 0.01
Xylenes	mg/kg	0.05	0.20	< 0.05	0.27	1.0	< 0.05	< 0.05
VPH C6-C10 (Less BTEX)	mg/kg	2.5	2.5	< 2.5	< 2.5	3.8	< 2.5	< 2.5
EPH >C10-C16	mg/kg	12	< 12	< 12	< 12	< 12	16	< 12
EPH >C16-C21	mg/kg	12	25	< 12	< 12	< 12	18	< 12
EPH >C21-C32	mg/kg	12	73	< 12	33	25	59	37
EPH (>C16-C32)	mg/kg	12	98	< 12	33	25	77	37
Modified TPH Tier 1	mg/kg	21	100	< 21	33	29	93	37
VPH Surrogate (IBB)	%		111	111	106	110	109	85
EPH Surrogate (IBB)	%		95	96	102	96	107	100
EPH Surrogate (C32)	%		107	105	117	107	115	106
Resemblance			PAH.PLO	ND	PLO	PG.PAH.PLO	PAH.PLO	LO
Return to Baseline at C32			Yes	Yes	Yes	Yes	Yes	Yes
Moisture Content	%		29	24	20	18	13	13

This report relates only to the sample(s) and information provided to the laboratory.
RL = Reporting Limit; Soil results are expressed on a dry weight basis.

Angela Colford
Lab Supervisor
Organic Analytical Services

Steven Davenport
Senior Technician
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Attention: Vladimir Trajkovic
Project #: PE23251
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Hydrocarbon Analysis in Soil (Atlantic MUST)

RPC Sample ID:			491990-07	491990-08	491990-09	491990-09 Dup	491990-10	491990-11
Client Sample ID:			MW23-05, SA2	MW23-05, SA3	MW23-06, SA1	MW23-06, SA1	MW23-07, SA1	MW23-08, SA1
Date Sampled:			18-Jul-23	18-Jul-23	18-Jul-23	18-Jul-23	19-Jul-23	19-Jul-23
Matrix:			soil	soil	soil	soil	soil	soil
Analytes	Units	RL						
Benzene	mg/kg	0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Toluene	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Ethylbenzene	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Xylenes	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
VPH C6-C10 (Less BTEX)	mg/kg	2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5
EPH >C10-C16	mg/kg	12	< 12	< 12	< 12	< 12	< 12	< 12
EPH >C16-C21	mg/kg	12	< 12	< 12	< 12	< 12	< 12	< 12
EPH >C21-C32	mg/kg	12	19	< 12	< 12	< 12	< 12	< 12
EPH (>C16-C32)	mg/kg	12	19	< 12	< 12	< 12	< 12	< 12
Modified TPH Tier 1	mg/kg	21	< 21	< 21	< 21	< 21	< 21	< 21
VPH Surrogate (IBB)	%		101	104	100	98	102	101
EPH Surrogate (IBB)	%		100	93	100	98	103	96
EPH Surrogate (C32)	%		106	102	105	105	107	101
Resemblance			ND	ND	ND	ND	ND	ND
Return to Baseline at C32			Yes	Yes	Yes	Yes	Yes	Yes
Moisture Content	%		21	21	13	13	11	12

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Hydrocarbon Analysis in Soil (Atlantic MUST)

RPC Sample ID:			491990-12	491990-13	491990-14	491990-15	491990-16	491990-17
Client Sample ID:			MW23-08, SA2	MW23-09, SA1	MW23-10, SA1	MW23-11, SA3	MW23-12, SA3	MW23-13, SA1
Date Sampled:			19-Jul-23	19-Jul-23	19-Jul-23	19-Jul-23	19-Jul-23	19-Jul-23
Matrix:			soil	soil	soil	soil	soil	soil
Analytes	Units	RL						
Benzene	mg/kg	0.005	< 0.005	< 0.005	< 0.005	< 0.1	< 0.005	< 0.005
Toluene	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05
Ethylbenzene	mg/kg	0.01	< 0.01	< 0.01	< 0.01	12	< 0.01	< 0.01
Xylenes	mg/kg	0.05	< 0.05	< 0.05	< 0.05	13	< 0.05	< 0.05
VPH C6-C10 (Less BTEX)	mg/kg	2.5	< 2.5	< 2.5	< 2.5	710	< 2.5	< 2.5
EPH >C10-C16	mg/kg	12	< 12	< 12	< 12	2500	< 12	< 12
EPH >C16-C21	mg/kg	12	< 12	< 12	< 12	1100	< 12	15
EPH >C21-C32	mg/kg	12	26	< 12	< 12	260	< 12	74
EPH (>C16-C32)	mg/kg	12	26	< 12	< 12	1400	< 12	89
Modified TPH Tier 1	mg/kg	21	26	< 21	< 21	4600	< 21	89
VPH Surrogate (IBB)	%		103	103	103	comment	101	96
EPH Surrogate (IBB)	%		105	83	100	comment	98	91
EPH Surrogate (C32)	%		110	84	107	87	104	93
Resemblance			LO	ND	ND	WFO	ND	PAH.LO
Return to Baseline at C32			No	Yes	Yes	Yes	Yes	No
Moisture Content	%		14	12	12	16	17	12

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Hydrocarbon Analysis in Soil (Atlantic MUST)

RPC Sample ID:			491990-18	491990-19	491990-20	491990-21	491990-22	491990-23
Client Sample ID:			MW23-14, SA1	MW23-15, SA1	MW23-15, SA2	MW23-16, SA1	MW23-17, SA1	MW23-17, SA2
Date Sampled:			20-Jul-23	20-Jul-23	20-Jul-23	20-Jul-23	21-Jul-23	21-Jul-23
Matrix:			soil	soil	soil	soil	soil	soil
Analytes	Units	RL						
Benzene	mg/kg	0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Toluene	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Ethylbenzene	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Xylenes	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
VPH C6-C10 (Less BTEX)	mg/kg	2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5
EPH >C10-C16	mg/kg	12	< 12	< 12	< 12	< 12	< 12	< 12
EPH >C16-C21	mg/kg	12	< 12	< 12	18	< 12	< 12	< 12
EPH >C21-C32	mg/kg	12	< 12	53	130	< 12	< 12	< 12
EPH (>C16-C32)	mg/kg	12	< 12	53	150	< 12	< 12	< 12
Modified TPH Tier 1	mg/kg	21	< 21	53	150	< 21	< 21	< 21
VPH Surrogate (IBB)	%		100	97	94	97	81	103
EPH Surrogate (IBB)	%		98	97	90	93	106	102
EPH Surrogate (C32)	%		109	103	98	96	103	102
Resemblance			ND	LO	WFO.LO	ND	ND	ND
Return to Baseline at C32			Yes	No	No	Yes	Yes	Yes
Moisture Content	%		12	11	10	14	14	15

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Hydrocarbon Analysis in Soil (Atlantic MUST)

RPC Sample ID:			491990-24	491990-25	491990-26	491990-27	491990-28	491990-29
Client Sample ID:			MW23-18, SA1	MW23-18, SA2	MW23-19, SA1	MW23-20, SA1	MW23-21, SA2	MW23-22, SA1
Date Sampled:			24-Jul-23	24-Jul-23	24-Jul-23	24-Jul-23	24-Jul-23	24-Jul-23
Matrix:			soil	soil	soil	soil	soil	soil
Analytes	Units	RL						
Benzene	mg/kg	0.005	< 0.005	< 0.005	0.087	0.009	< 0.005	< 0.005
Toluene	mg/kg	0.05	< 0.05	< 0.05	0.12	< 0.05	< 0.05	< 0.05
Ethylbenzene	mg/kg	0.01	< 0.01	< 0.01	0.07	< 0.01	< 0.01	< 0.01
Xylenes	mg/kg	0.05	< 0.05	< 0.05	0.36	0.05	< 0.05	< 0.05
VPH C6-C10 (Less BTEX)	mg/kg	2.5	< 2.5	< 2.5	10	< 2.5	< 2.5	< 2.5
EPH >C10-C16	mg/kg	12	< 12	< 12	28	< 12	< 12	< 12
EPH >C16-C21	mg/kg	12	< 12	< 12	43	< 12	< 12	< 12
EPH >C21-C32	mg/kg	12	< 12	< 12	240	67	< 12	< 12
EPH (>C16-C32)	mg/kg	12	< 12	< 12	280	67	< 12	< 12
Modified TPH Tier 1	mg/kg	21	< 21	< 21	320	67	< 21	< 21
VPH Surrogate (IBB)	%		103	96	102	102	100	98
EPH Surrogate (IBB)	%		109	119	90	106	111	97
EPH Surrogate (C32)	%		81	92	93	108	111	97
Resemblance			ND	ND	WFO.PAH.LO	LO	ND	ND
Return to Baseline at C32			Yes	Yes	No	No	Yes	Yes
Moisture Content	%		12	12	14	13	14	16

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Project #: PE23251
Location: PEI Government Garage

PAH in Soil

RPC Sample ID:			491990-03	491990-05	491990-06	491990-07	491990-18	491990-19
Client Sample ID:			MW23-02, SA1	MW23-03, SA2	MW23-04, SA2	MW23-05, SA2	MW23-14, SA1	MW23-15, SA1
Date Sampled:			18-Jul-23	18-Jul-23	18-Jul-23	18-Jul-23	20-Jul-23	20-Jul-23
Matrix:			soil	soil	soil	soil	soil	soil
Analytes	Units	RL						
Naphthalene	mg/kg	0.01	0.03	0.36	0.03	< 0.01	< 0.01	< 0.01
Acenaphthylene	mg/kg	0.01	0.02	0.16	0.02	< 0.01	< 0.01	< 0.01
Acenaphthene	mg/kg	0.01	0.02	0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	mg/kg	0.01	0.02	0.02	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	mg/kg	0.01	0.25	0.41	0.07	0.01	0.03	0.02
Anthracene	mg/kg	0.01	0.07	0.17	0.03	< 0.01	< 0.01	< 0.01
Fluoranthene	mg/kg	0.01	0.39	0.78	0.15	0.02	0.04	0.03
Pyrene	mg/kg	0.01	0.36	0.69	0.14	0.02	0.04	0.02
Benz(a)anthracene	mg/kg	0.01	0.22	0.45	0.09	0.01	0.02	0.01
Chrysene/Triphenylene	mg/kg	0.01	0.16	0.37	0.08	0.01	0.02	< 0.01
Benzo(b+j)fluoranthene	mg/kg	0.01	0.28	0.80	0.15	0.01	0.03	0.01
Benzo(k)fluoranthene	mg/kg	0.01	0.09	0.24	0.04	< 0.01	< 0.01	< 0.01
Benzo(e)pyrene	mg/kg	0.01	0.16	0.38	0.08	< 0.01	0.02	0.01
Benzo(a)pyrene	mg/kg	0.01	0.25	0.53	0.11	0.01	0.02	< 0.01
Indeno(1,2,3-c,d)pyrene	mg/kg	0.01	0.12	0.34	0.08	< 0.01	0.01	< 0.01
Benzo(g,h,i)perylene	mg/kg	0.01	0.11	0.28	0.08	< 0.01	0.01	< 0.01
Dibenz(a,h)anthracene	mg/kg	0.01	0.03	0.08	0.02	< 0.01	< 0.01	< 0.01
2-fluorobiphenyl (surrogate)	%		86	98	102	102	104	104
p-terphenyl-d14 (surrogate)	%		83	100	100	102	98	102
Moisture Content	%		20	13	13	21	12	11

This report relates only to the sample(s) and information provided to the laboratory.
RL = Reporting Limit; Soil results are expressed on a dry weight basis.

Angela Colford
Lab Supervisor
Organic Analytical Services

Steven Davenport
Senior Technician
Organic Analytical Services

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PAH in Soil

RPC Sample ID:			491990-24	491990-26	491990-27	491990-28	491990-29	491990-29 Dup
Client Sample ID:			MW23-18, SA1	MW23-19, SA1	MW23-20, SA1	MW23-21, SA2	MW23-22, SA1	MW23-22, SA1
Date Sampled:			24-Jul-23	24-Jul-23	24-Jul-23	24-Jul-23	24-Jul-23	24-Jul-23
Matrix:			soil	soil	soil	soil	soil	soil
Analytes	Units	RL						
Naphthalene	mg/kg	0.01	< 0.01	0.08	0.02	< 0.01	< 0.01	< 0.01
Acenaphthylene	mg/kg	0.01	< 0.01	0.09	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	mg/kg	0.01	< 0.01	0.13	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	mg/kg	0.01	< 0.01	0.13	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	mg/kg	0.01	< 0.01	1.0	0.04	< 0.01	< 0.01	0.01
Anthracene	mg/kg	0.01	< 0.01	0.45	0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	mg/kg	0.01	< 0.01	1.7	0.05	< 0.01	0.01	0.02
Pyrene	mg/kg	0.01	< 0.01	1.5	0.04	< 0.01	< 0.01	0.01
Benz(a)anthracene	mg/kg	0.01	< 0.01	0.80	0.03	< 0.01	< 0.01	< 0.01
Chrysene/Triphenylene	mg/kg	0.01	< 0.01	0.67	0.02	< 0.01	< 0.01	< 0.01
Benzo(b+j)fluoranthene	mg/kg	0.01	< 0.01	1.1	0.03	< 0.01	< 0.01	0.01
Benzo(k)fluoranthene	mg/kg	0.01	< 0.01	0.34	0.01	< 0.01	< 0.01	< 0.01
Benzo(e)pyrene	mg/kg	0.01	< 0.01	0.64	0.03	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	mg/kg	0.01	< 0.01	0.80	0.03	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-c,d)pyrene	mg/kg	0.01	< 0.01	0.51	0.02	< 0.01	< 0.01	< 0.01
Benzo(g,h,i)perylene	mg/kg	0.01	< 0.01	0.50	0.02	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	mg/kg	0.01	< 0.01	0.12	< 0.01	< 0.01	< 0.01	< 0.01
2-fluorobiphenyl (surrogate)	%		103	102	94	104	108	107
p-terphenyl-d14 (surrogate)	%		98	113	97	100	104	105
Moisture Content	%		12	14	13	14	16	17

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Attention: Vladimir Trajkovic
Project #: PE23251
Location: PEI Government Garage

PCB's in Soil

RPC Sample ID:			491990-24	491990-26	491990-27	491990-27 Dup
Client Sample ID:			MW23-18, SA1	MW23-19, SA1	MW23-20, SA1	MW23-20, SA1
Date Sampled:			24-Jul-23	24-Jul-23	24-Jul-23	24-Jul-23
Matrix:			soil	soil	soil	soil
Analytes	Units	RL				
Total PCB	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
PCB Surrogate (DCB)	%		115	117	113	112
Resemblance			ND	ND	ND	ND
Moisture Content	%		12	14	13	13

This report relates only to the sample(s) and information provided to the laboratory.
RL = Reporting Limit; Soil results are expressed on a dry weight basis.

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Nigel Skinner
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Volatile Organic Compounds in Soil

RPC Sample ID:			491990-09	491990-09 Dup	491990-10	491990-11	491990-13	491990-14
Client Sample ID:			MW23-06, SA1	MW23-06, SA1	MW23-07, SA1	MW23-08, SA1	MW23-09, SA1	MW23-10, SA1
Date Sampled:			18-Jul-23	18-Jul-23	19-Jul-23	19-Jul-23	19-Jul-23	19-Jul-23
Matrix:			soil	soil	soil	soil	soil	soil
Analytes	Units	RL						
Chloromethane	mg/kg	0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Vinyl Chloride	mg/kg	0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06
Bromomethane	mg/kg	0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chloroethane	mg/kg	0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Trichlorofluoromethane	mg/kg	0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
1,1-Dichloroethylene	mg/kg	0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04
Methylene Chloride	mg/kg	0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichloroethylene (trans)	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,1-Dichloroethane	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,2-Dichloroethylylene (cis)	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Bromochloromethane	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Chloroform	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,1,1-Trichloroethane	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Carbon Tetrachloride	mg/kg	0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04
Benzene	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,2-Dichloroethane	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Trichloroethylene	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,2-Dichloropropane	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Bromodichloromethane	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,3-Dichloropropylene (cis)	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02

This report relates only to the sample(s) and information provided to the laboratory.
RL = Reporting Limit; Soil results are expressed on a dry weight basis.

Angela Colford
Lab Supervisor
Organic Analytical Services

Steven Davenport
Senior Technician
Organic Analytical Services

Report ID: 491990-OAS
Report Date: 03-Aug-23
Date Received: 26-Jul-23

CERTIFICATE OF ANALYSIS

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www.rpc.ca

Attention: Vladimir Trajkovic
Project #: PE23251
Location: PEI Government Garage

Volatile Organic Compounds in Soil

RPC Sample ID:			491990-09	491990-09 Dup	491990-10	491990-11	491990-13	491990-14
Client Sample ID:			MW23-06, SA1	MW23-06, SA1	MW23-07, SA1	MW23-08, SA1	MW23-09, SA1	MW23-10, SA1
Date Sampled:			18-Jul-23	18-Jul-23	19-Jul-23	19-Jul-23	19-Jul-23	19-Jul-23
Matrix:			soil	soil	soil	soil	soil	soil
Analytes	Units	RL						
Toluene	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,3-Dichloropropylene (trans)	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,1,2-Trichloroethane	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Tetrachloroethylene	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Dibromochloromethane	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,2-Dibromoethane	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Chlorobenzene	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Ethylbenzene	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
m,p-Xylenes	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
o-Xylene	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Styrene	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Bromoform	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,1,2,2-Tetrachloroethane	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,3-Dichlorobenzene	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,4-Dichlorobenzene	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,2-Dichlorobenzene	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,2-Dichloroethane-d4	%		103	101	101	101	104	102
Toluene-d8	%		101	100	100	99	100	100
4-Bromofluorobenzene	%		99	98	96	97	98	97
Moisture Content	%		13	13	11	12	12	12

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Attention: Vladimir Trajkovic
Project #: PE23251
Location: PEI Government Garage

Volatile Organic Compounds in Soil

RPC Sample ID:			491990-15	491990-16	491990-17	491990-18	491990-19	491990-21
Client Sample ID:			MW23-11, SA3	MW23-12, SA3	MW23-13, SA1	MW23-14, SA1	MW23-15, SA1	MW23-16, SA1
Date Sampled:			19-Jul-23	19-Jul-23	19-Jul-23	20-Jul-23	20-Jul-23	20-Jul-23
Matrix:			soil	soil	soil	soil	soil	soil
Analytes	Units	RL						
Chloromethane	mg/kg	0.2	< 0.8	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Vinyl Chloride	mg/kg	0.06	< 0.2	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06
Bromomethane	mg/kg	0.2	< 0.8	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chloroethane	mg/kg	0.2	< 0.8	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Trichlorofluoromethane	mg/kg	0.2	< 0.8	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
1,1-Dichloroethylene	mg/kg	0.04	< 0.2	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04
Methylene Chloride	mg/kg	0.2	< 0.8	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichloroethylene (trans)	mg/kg	0.02	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,1-Dichloroethane	mg/kg	0.02	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,2-Dichloroethylylene (cis)	mg/kg	0.02	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Bromochloromethane	mg/kg	0.02	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Chloroform	mg/kg	0.02	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,1,1-Trichloroethane	mg/kg	0.02	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Carbon Tetrachloride	mg/kg	0.04	< 0.2	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04
Benzene	mg/kg	0.02	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,2-Dichloroethane	mg/kg	0.02	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Trichloroethylene	mg/kg	0.02	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,2-Dichloropropane	mg/kg	0.02	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Bromodichloromethane	mg/kg	0.02	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,3-Dichloropropylene (cis)	mg/kg	0.02	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02

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Attention: Vladimir Trajkovic
Project #: PE23251
Location: PEI Government Garage

Volatile Organic Compounds in Soil

RPC Sample ID:			491990-15	491990-16	491990-17	491990-18	491990-19	491990-21
Client Sample ID:			MW23-11, SA3	MW23-12, SA3	MW23-13, SA1	MW23-14, SA1	MW23-15, SA1	MW23-16, SA1
Date Sampled:			19-Jul-23	19-Jul-23	19-Jul-23	20-Jul-23	20-Jul-23	20-Jul-23
Matrix:			soil	soil	soil	soil	soil	soil
Analytes	Units	RL						
Toluene	mg/kg	0.02	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,3-Dichloropropylene (trans)	mg/kg	0.02	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,1,2-Trichloroethane	mg/kg	0.02	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Tetrachloroethylene	mg/kg	0.02	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Dibromochloromethane	mg/kg	0.02	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,2-Dibromoethane	mg/kg	0.02	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Chlorobenzene	mg/kg	0.02	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Ethylbenzene	mg/kg	0.02	13	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
m,p-Xylenes	mg/kg	0.02	13	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
o-Xylene	mg/kg	0.02	0.2	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Styrene	mg/kg	0.02	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Bromoform	mg/kg	0.02	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,1,2,2-Tetrachloroethane	mg/kg	0.02	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,3-Dichlorobenzene	mg/kg	0.02	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,4-Dichlorobenzene	mg/kg	0.02	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,2-Dichlorobenzene	mg/kg	0.02	< 0.1	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,2-Dichloroethane-d4	%		99	102	103	102	103	103
Toluene-d8	%		99	99	99	100	100	101
4-Bromofluorobenzene	%		95	97	97	99	98	97

Report ID: 491990-OAS
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Attention: Vladimir Trajkovic
Project #: PE23251
Location: PEI Government Garage

Volatile Organic Compounds in Soil

RPC Sample ID:			491990-22	491990-24	491990-26	491990-27	491990-28	491990-29
Client Sample ID:			MW23-17, SA1	MW23-18, SA1	MW23-19, SA1	MW23-20, SA1	MW23-21, SA2	MW23-22, SA1
Date Sampled:			21-Jul-23	24-Jul-23	24-Jul-23	24-Jul-23	24-Jul-23	24-Jul-23
Matrix:			soil	soil	soil	soil	soil	soil
Analytes	Units	RL						
Chloromethane	mg/kg	0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Vinyl Chloride	mg/kg	0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06
Bromomethane	mg/kg	0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chloroethane	mg/kg	0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Trichlorofluoromethane	mg/kg	0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
1,1-Dichloroethylene	mg/kg	0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04
Methylene Chloride	mg/kg	0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichloroethylene (trans)	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,1-Dichloroethane	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,2-Dichloroethylylene (cis)	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Bromochloromethane	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Chloroform	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,1,1-Trichloroethane	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Carbon Tetrachloride	mg/kg	0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04
Benzene	mg/kg	0.02	< 0.02	< 0.02	0.11	< 0.02	< 0.02	< 0.02
1,2-Dichloroethane	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Trichloroethylene	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,2-Dichloropropane	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Bromodichloromethane	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,3-Dichloropropylene (cis)	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02

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Attention: Vladimir Trajkovic
Project #: PE23251
Location: PEI Government Garage

Volatile Organic Compounds in Soil

RPC Sample ID:			491990-22	491990-24	491990-26	491990-27	491990-28	491990-29
Client Sample ID:			MW23-17, SA1	MW23-18, SA1	MW23-19, SA1	MW23-20, SA1	MW23-21, SA2	MW23-22, SA1
Date Sampled:			21-Jul-23	24-Jul-23	24-Jul-23	24-Jul-23	24-Jul-23	24-Jul-23
Matrix:			soil	soil	soil	soil	soil	soil
Analytes	Units	RL						
Toluene	mg/kg	0.02	< 0.02	< 0.02	0.17	0.03	< 0.02	< 0.02
1,3-Dichloropropylene (trans)	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,1,2-Trichloroethane	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Tetrachloroethylene	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Dibromochloromethane	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,2-Dibromoethane	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Chlorobenzene	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Ethylbenzene	mg/kg	0.02	< 0.02	< 0.02	0.08	< 0.02	< 0.02	< 0.02
m,p-Xylenes	mg/kg	0.02	< 0.02	< 0.02	0.30	0.03	< 0.02	< 0.02
o-Xylene	mg/kg	0.02	< 0.02	< 0.02	0.11	< 0.02	< 0.02	< 0.02
Styrene	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Bromoform	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,1,2,2-Tetrachloroethane	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,3-Dichlorobenzene	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,4-Dichlorobenzene	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,2-Dichlorobenzene	mg/kg	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
1,2-Dichloroethane-d4	%		103	102	102	103	102	102
Toluene-d8	%		99	101	99	100	99	100
4-Bromofluorobenzene	%		97	97	99	99	97	97

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Method Summary

OAS-HC03:The Determination of Petroleum Hydrocarbons (Atlantic MUST) in Soil (VPH)
OAS-HC03: Determination of Petroleum Hydrocarbons (Atlantic MUST) in Soil (EPH)
OAS-HC06:The Determination of Polynuclear Aromatic Hydrocarbons in Soil
The Determination of Polychlorinated biphenyls in Soil. (Solvent extraction, followed by GC-ECD analysis; based on USEPA 3570/8082.)
OAS-HC07: Determination of Volatile Organic Compounds in Soil.

Resemblance Legend

Resemblance Code	Resemblance
ARO1242/54	Mix of Aroclors 1242,1254.
ARO1242/60	Mix of Aroclors 1242,1260.
ARO1254/60	Mix of Aroclors 1254, 1260.
ARO.1016	Aroclor 1016
ARO.1242	Aroclor 1242
ARO.1248	Aroclor 1248.
ARO.1254	Aroclor 1254
ARO.1260	Aroclor 1260
COMMENT	See General Report Comments
FO	Fuel Oil Fraction
FO.LO	Fuel Oil and Lube Oil Fraction
G	Gasoline Fraction
LO	Lube Oil Fraction
MIXTURE	Mix of Aroclors 1242, 1254 and 1260.

Resemblance Code	Resemblance
ND	Not Detected
NR	No Resemblance (not-petrogenic in origin)
NRLR	No Resemblance in the lube oil range (>C21-C32).
OP	One Product (unidentified)
PAH	Possible PAHs Detected
PG	Possible Gasoline Fraction
PLO	Possible Lube Oil Fraction
PWFO	Possible Weathered Fuel Oil Fraction
PWG	Possible Weathered Gasoline Fraction
TO	Transformer Oil
UP	Unknown Peaks
WFO	Weathered Fuel Oil Fraction
WG	Weathered Gasoline Fraction

General Report Comments

491990-1, 2, 3, 4, 5, 6, 7, 8, 10, 12, 13, 15, 17, 19, 20, 21, 26, 27, and 29 - EPH extracts were treated with silica gel to remove polar interferences. VPH / EPH surrogate(s) unavailable due to product interference/sample dilution. Elevated VPH and VOC RL's due to sample dilution.
Sample 491990-15 - There was a discrepency between the VPH/VOC vial(s) submitted and the EPH soil jar.The VPH/VOC portion was subsampled from the EPH soil jar and used for analysis. Analytical results for VPH/VOC parameters should be regarded as minimum values.
Return to Baseline: Samples are considered to have returned to baseline if the area from C32-C36 is less than 10% of the area from C10-C32.

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Project #: PE23251
Location: PEI Government Garage
QA/QC Report

RPC Sample ID:			BLANKD7190	BLANKD7192	BLANKD7196	BLANKD7224	BLANKD7226	BLANKD7228
Type:			VPH	VPH	VPH	EPH	EPH	EPH
Matrix:			soil	soil	soil	soil	soil	soil
Analytes	Units	RL						
Benzene	mg/kg	0.005	< 0.005	< 0.005	< 0.005	-	-	-
Toluene	mg/kg	0.05	< 0.05	< 0.05	< 0.05	-	-	-
Ethylbenzene	mg/kg	0.01	< 0.01	< 0.01	< 0.01	-	-	-
Xylenes	mg/kg	0.05	< 0.05	< 0.05	< 0.05	-	-	-
VPH C6-C10 (Less BTEX)	mg/kg	2.5	< 2.5	< 2.5	< 2.5	-	-	-
EPH >C10-C16	mg/kg	12	-	-	-	< 12	< 12	< 12
EPH >C16-C21	mg/kg	12	-	-	-	< 12	< 12	< 12
EPH >C21-C32	mg/kg	12	-	-	-	< 12	< 12	< 12
EPH >C10-C32	mg/kg	21	-	-	-	-	-	-

RL = Reporting Limit

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Fax: 506.452.0594
www.rpc.ca

Project #: PE23251
Location: PEI Government Garage
QA/QC Report

RPC Sample ID:			SPIKED7190	SPIKED7192	SPIKED7196	SPIKED7224	SPIKED7226	SPIKED7228
Type:			VPH	VPH	VPH	EPH	EPH	EPH
Matrix:			soil	soil	soil	soil	soil	soil
Analytes	Units	RL	% Recovery	% Recovery	% Recovery	% Recovery	% Recovery	% Recovery
Benzene	mg/kg	0.005	107%	105%	107%	-	-	-
Toluene	mg/kg	0.05	105%	102%	91%	-	-	-
Ethylbenzene	mg/kg	0.01	102%	100%	85%	-	-	-
Xylenes	mg/kg	0.05	101%	99%	82%	-	-	-
VPH C6-C10 (Less BTEX)	mg/kg	2.5	100%	98%	111%	-	-	-
EPH >C10-C16	mg/kg	12	-	-	-	-	-	-
EPH >C16-C21	mg/kg	12	-	-	-	-	-	-
EPH >C21-C32	mg/kg	12	-	-	-	-	-	-
EPH >C10-C32	mg/kg	21	-	-	-	93%	95%	94%

Report ID: 491990-OAS
Report Date: 03-Aug-23
Date Received: 26-Jul-23

CERTIFICATE OF ANALYSIS

for
All-Tech Environmental Service
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Project #: PE23251
Location: PEI Government Garage
QA/QC Report

RPC Sample ID:			BLANKD7216	BLANKD7217	SPIKED7216	SPIKED7217
Matrix:			soil	soil	soil	soil
Analytes	Units	RL			% Recovery	% Recovery
Naphthalene	mg/kg	0.01	< 0.01	< 0.01	99%	97%
Acenaphthylene	mg/kg	0.01	< 0.01	< 0.01	98%	100%
Acenaphthene	mg/kg	0.01	< 0.01	< 0.01	97%	97%
Fluorene	mg/kg	0.01	< 0.01	< 0.01	96%	91%
Phenanthrene	mg/kg	0.01	< 0.01	< 0.01	96%	96%
Anthracene	mg/kg	0.01	< 0.01	< 0.01	95%	97%
Fluoranthene	mg/kg	0.01	< 0.01	< 0.01	95%	94%
Pyrene	mg/kg	0.01	< 0.01	< 0.01	94%	94%
Benz(a)anthracene	mg/kg	0.01	< 0.01	< 0.01	89%	93%
Chrysene/Triphenylene	mg/kg	0.01	< 0.01	< 0.01	96%	98%
Benzo(b+j)fluoranthene	mg/kg	0.01	< 0.01	< 0.01	90%	95%
Benzo(k)fluoranthene	mg/kg	0.01	< 0.01	< 0.01	90%	95%
Benzo(e)pyrene	mg/kg	0.01	< 0.01	< 0.01	102%	109%
Benzo(a)pyrene	mg/kg	0.01	< 0.01	< 0.01	102%	109%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.01	< 0.01	< 0.01	86%	97%
Benzo(g,h,i)perylene	mg/kg	0.01	< 0.01	< 0.01	87%	97%
Dibenz(a,h)anthracene	mg/kg	0.01	< 0.01	< 0.01	87%	96%

RL = Reporting Limit

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Project #: PE23251
Location: PEI Government Garage
QA/QC Report

RPC Sample ID:			BLANKD7206	SPIKED7206
Matrix:			soil	soil
Analytes	Units	RL		% Recovery
Total PCB	mg/kg	0.05	< 0.05	102%

RL = Reporting Limit

Report ID: 491990-OAS
Report Date: 03-Aug-23
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Project #: PE23251
Location: PEI Government Garage
QA/QC Report

RPC Sample ID:			BLANKD7219	BLANKD7220	SPIKED7219	SPIKED7220
Matrix:			soil	soil	soil	soil
Analytes	Units	RL			% Recovery	% Recovery
Chloromethane	mg/kg	0.4	< 0.4	< 0.4	129%	134%
Vinyl Chloride	mg/kg	0.4	< 0.4	< 0.4	123%	133%
Bromomethane	mg/kg	0.4	< 0.4	< 0.4	35%	32%
Chloroethane	mg/kg	0.4	< 0.4	< 0.4	96%	101%
Trichlorofluoromethane	mg/kg	0.4	< 0.4	< 0.4	101%	103%
1,1-Dichloroethylene	mg/kg	0.1	< 0.1	< 0.1	111%	113%
Methylene Chloride	mg/kg	0.1	< 0.1	< 0.1	105%	108%
1,2-Dichloroethylene (trans)	mg/kg	0.1	< 0.1	< 0.1	108%	111%
1,1-Dichloroethane	mg/kg	0.1	< 0.1	< 0.1	114%	118%
1,2-Dichloroethylylene (cis)	mg/kg	0.1	< 0.1	< 0.1	109%	111%
Bromochloromethane	mg/kg	0.1	< 0.1	< 0.1	106%	109%
Chloroform	mg/kg	0.1	< 0.1	< 0.1	110%	113%
1,1,1-Trichloroethane	mg/kg	0.1	< 0.1	< 0.1	110%	113%
Carbon Tetrachloride	mg/kg	0.1	< 0.1	< 0.1	109%	111%
Benzene	mg/kg	0.1	< 0.1	< 0.1	117%	119%
1,2-Dichloroethane	mg/kg	0.1	< 0.1	< 0.1	111%	115%
Trichloroethylene	mg/kg	0.1	< 0.1	< 0.1	110%	111%
1,2-Dichloropropane	mg/kg	0.1	< 0.1	< 0.1	109%	111%
Bromodichloromethane	mg/kg	0.1	< 0.1	< 0.1	102%	105%
1,3-Dichloropropylene (cis)	mg/kg	0.1	< 0.1	< 0.1	110%	108%

RL = Reporting Limit

Report ID: 491990-OAS
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Project #: PE23251
Location: PEI Government Garage
QA/QC Report

RPC Sample ID:			BLANKD7219	BLANKD7220	SPIKED7219	SPIKED7220
Matrix:			soil	soil	soil	soil
Analytes	Units	RL			% Recovery	% Recovery
Toluene	mg/kg	0.1	< 0.1	< 0.1	119%	121%
1,3-Dichloropropylene (trans)	mg/kg	0.1	< 0.1	< 0.1	117%	114%
1,1,2-Trichloroethane	mg/kg	0.1	< 0.1	< 0.1	109%	110%
Tetrachloroethylene	mg/kg	0.1	< 0.1	< 0.1	114%	113%
Dibromochloromethane	mg/kg	0.1	< 0.1	< 0.1	98%	98%
1,2-Dibromoethane	mg/kg	0.1	< 0.1	< 0.1	103%	105%
Chlorobenzene	mg/kg	0.1	< 0.1	< 0.1	114%	115%
Ethylbenzene	mg/kg	0.1	< 0.1	< 0.1	119%	120%
m,p-Xylenes	mg/kg	0.1	< 0.1	< 0.1	119%	120%
o-Xylene	mg/kg	0.1	< 0.1	< 0.1	117%	119%
Styrene	mg/kg	0.1	< 0.1	< 0.1	115%	115%
Bromoform	mg/kg	0.1	< 0.1	< 0.1	94%	95%
1,1,2,2-Tetrachloroethane	mg/kg	0.1	< 0.1	< 0.1	105%	107%
1,3-Dichlorobenzene	mg/kg	0.1	< 0.1	< 0.1	113%	113%
1,4-Dichlorobenzene	mg/kg	0.1	< 0.1	< 0.1	111%	112%
1,2-Dichlorobenzene	mg/kg	0.1	< 0.1	< 0.1	110%	112%

RL = Reporting Limit

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Project #: PE23251

Summary of Date Analyzed

	VPH		EPH		PAH	
RPC Sample ID	**Extracted**	**Analyzed**	**Extracted**	**Analyzed**	**Extracted**	**Analyzed**
491990-01	28-Jul-23	29-Jul-23	28-Jul-23	31-Jul-23	-	-
491990-02	28-Jul-23	29-Jul-23	28-Jul-23	31-Jul-23	-	-
491990-03	28-Jul-23	29-Jul-23	28-Jul-23	31-Jul-23	28-Jul-23	29-Jul-23
491990-04	28-Jul-23	29-Jul-23	28-Jul-23	31-Jul-23	-	-
491990-05	28-Jul-23	29-Jul-23	28-Jul-23	31-Jul-23	28-Jul-23	29-Jul-23
491990-06	28-Jul-23	29-Jul-23	28-Jul-23	31-Jul-23	28-Jul-23	29-Jul-23
491990-07	28-Jul-23	29-Jul-23	28-Jul-23	31-Jul-23	28-Jul-23	30-Jul-23
491990-08	28-Jul-23	29-Jul-23	28-Jul-23	1-Aug-23	-	-
491990-09	28-Jul-23	29-Jul-23	28-Jul-23	29-Jul-23	-	-
491990-09 Dup	28-Jul-23	29-Jul-23	28-Jul-23	29-Jul-23	-	-
491990-10	28-Jul-23	29-Jul-23	28-Jul-23	1-Aug-23	-	-
491990-11	28-Jul-23	29-Jul-23	28-Jul-23	29-Jul-23	-	-
491990-12	28-Jul-23	29-Jul-23	28-Jul-23	1-Aug-23	-	-
491990-13	28-Jul-23	29-Jul-23	28-Jul-23	1-Aug-23	-	-
491990-14	28-Jul-23	29-Jul-23	28-Jul-23	29-Jul-23	-	-
491990-15	3-Aug-23	3-Aug-23	28-Jul-23	1-Aug-23	-	-
491990-16	28-Jul-23	29-Jul-23	28-Jul-23	29-Jul-23	-	-
491990-17	28-Jul-23	29-Jul-23	28-Jul-23	1-Aug-23	-	-
491990-18	28-Jul-23	29-Jul-23	28-Jul-23	29-Jul-23	28-Jul-23	30-Jul-23
491990-19	28-Jul-23	29-Jul-23	28-Jul-23	1-Aug-23	28-Jul-23	30-Jul-23

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Project #: PE23251

Summary of Date Analyzed

	VPH		EPH		PAH	
RPC Sample ID	**Extracted**	**Analyzed**	**Extracted**	**Analyzed**	**Extracted**	**Analyzed**
491990-20	28-Jul-23	29-Jul-23	28-Jul-23	1-Aug-23	-	-
491990-21	28-Jul-23	29-Jul-23	28-Jul-23	1-Aug-23	-	-
491990-22	28-Jul-23	29-Jul-23	28-Jul-23	30-Jul-23	-	-
491990-23	28-Jul-23	29-Jul-23	28-Jul-23	30-Jul-23	-	-
491990-24	28-Jul-23	29-Jul-23	28-Jul-23	29-Jul-23	28-Jul-23	29-Jul-23
491990-25	28-Jul-23	29-Jul-23	28-Jul-23	29-Jul-23	-	-
491990-26	28-Jul-23	29-Jul-23	28-Jul-23	1-Aug-23	28-Jul-23	30-Jul-23
491990-27	28-Jul-23	29-Jul-23	28-Jul-23	1-Aug-23	28-Jul-23	30-Jul-23
491990-27 Dup	-	-	-	-	-	-
491990-28	28-Jul-23	29-Jul-23	28-Jul-23	29-Jul-23	28-Jul-23	29-Jul-23
491990-29	28-Jul-23	29-Jul-23	28-Jul-23	1-Aug-23	28-Jul-23	29-Jul-23
491990-29 Dup	-	-	-	-	28-Jul-23	29-Jul-23

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Project #: PE23251

Summary of Date Analyzed

	PCB		VOC	
RPC Sample ID	**Extracted**	**Analyzed**	**Extracted**	**Analyzed**
491990-01	-	-	-	-
491990-02	-	-	-	-
491990-03	-	-	-	-
491990-04	-	-	-	-
491990-05	-	-	-	-
491990-06	-	-	-	-
491990-07	-	-	-	-
491990-08	-	-	-	-
491990-09	-	-	28-Jul-23	31-Jul-23
491990-09 Dup	-	-	28-Jul-23	31-Jul-23
491990-10	-	-	28-Jul-23	31-Jul-23
491990-11	-	-	28-Jul-23	31-Jul-23
491990-12	-	-	-	-
491990-13	-	-	28-Jul-23	31-Jul-23
491990-14	-	-	28-Jul-23	31-Jul-23
491990-15	-	-	3-Aug-23	3-Aug-23
491990-16	-	-	28-Jul-23	31-Jul-23
491990-17	-	-	28-Jul-23	31-Jul-23
491990-18	-	-	28-Jul-23	31-Jul-23
491990-19	-	-	28-Jul-23	31-Jul-23

Report ID: 491990-OAS
Report Date: 03-Aug-23
Date Received: 26-Jul-23

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Project #: PE23251

Summary of Date Analyzed

	PCB		VOC	
RPC Sample ID	**Extracted**	**Analyzed**	**Extracted**	**Analyzed**
491990-20	-	-	-	-
491990-21	-	-	28-Jul-23	31-Jul-23
491990-22	-	-	28-Jul-23	31-Jul-23
491990-23	-	-	-	-
491990-24	28-Jul-23	31-Jul-23	28-Jul-23	31-Jul-23
491990-25	-	-	-	-
491990-26	28-Jul-23	31-Jul-23	28-Jul-23	31-Jul-23
491990-27	28-Jul-23	31-Jul-23	28-Jul-23	31-Jul-23
491990-27 Dup	28-Jul-23	31-Jul-23	-	-
491990-28	-	-	28-Jul-23	31-Jul-23
491990-29	-	-	28-Jul-23	1-Aug-23
491990-29 Dup	-	-	-	-

Report ID: 491969-IAS
Report Date: 04-Aug-23
Date Received: 26-Jul-23

CERTIFICATE OF ANALYSIS

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Attention: Vladimir Trajkovic
Project #: PE23251
Location: PEI Government Garage

Analysis of Metals in Soil

RPC Sample ID:			491969-19	491969-20
Client Sample ID:			BH23-22, SA1	BH23-23, SA1
Date Sampled:			24-Jul-23	24-Jul-23
Analytes	**Units**	**RL**		
Aluminum	mg/kg	1	9640	5550
Antimony	mg/kg	0.1	0.2	0.1
Arsenic	mg/kg	1	2	2
Barium	mg/kg	1	33	17
Beryllium	mg/kg	0.1	0.5	0.3
Bismuth	mg/kg	1	< 1	< 1
Boron	mg/kg	1	3	2
Cadmium	mg/kg	0.01	0.01	< 0.01
Calcium	mg/kg	50	370	230
Chromium	mg/kg	1	20	13
Cobalt	mg/kg	0.1	7.3	5.0
Copper	mg/kg	1	8	5
Iron	mg/kg	20	21000	14200
Lead	mg/kg	0.1	5.6	4.2
Lithium	mg/kg	0.1	25.4	15.9
Magnesium	mg/kg	10	3680	2250
Manganese	mg/kg	1	424	512
Molybdenum	mg/kg	0.1	0.3	0.2
Nickel	mg/kg	1	17	11
Potassium	mg/kg	20	1530	840
Rubidium	mg/kg	0.1	10.4	5.9
Selenium	mg/kg	1	2	1
Silver	mg/kg	0.1	< 0.1	< 0.1
Sodium	mg/kg	50	770	980
Strontium	mg/kg	1	4	3
Tellurium	mg/kg	0.1	< 0.1	< 0.1
Thallium	mg/kg	0.1	< 0.1	< 0.1
Tin	mg/kg	1	< 1	< 1
Uranium	mg/kg	0.1	0.6	0.5
Vanadium	mg/kg	1	13	9
Zinc	mg/kg	1	33	22

This report relates only to the sample(s) and information provided to the laboratory.

RL = Reporting Limit

Matthew Norman
Senior Chemist
Inorganic Analytical Chemistry

Brannen Burhoe
Supervisor
Inorganic Analytical Services

Report ID: 491969-IAS
Report Date: 04-Aug-23
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General Report Comments

Samples were air dried and sieved at 2 mm. A portion of each was digested according to EPA Method 3050B. The resulting solutions were analyzed for trace elements by ICP-MS.

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Project #: PE23251
Location: PEI Government Garage
QA/QC Report

RPC Sample ID:			CRM191034	RB103366
Type:			CRM NIST 2706	Blank
Analytes	**Units**	**RL**		
Aluminum	mg/kg	1	9580	< 1
Antimony	mg/kg	0.1	45.5	< 0.1
Arsenic	mg/kg	1	30	< 1
Barium	mg/kg	1	110	< 1
Beryllium	mg/kg	0.1	0.5	< 0.1
Bismuth	mg/kg	1	< 1	< 1
Boron	mg/kg	1	12	< 1
Cadmium	mg/kg	0.01	0.23	< 0.01
Calcium	mg/kg	50	4750	< 50
Chromium	mg/kg	1	21	< 1
Cobalt	mg/kg	0.1	4.7	< 0.1
Copper	mg/kg	1	86	< 1
Iron	mg/kg	20	18000	< 20
Lead	mg/kg	0.1	626.	< 0.1
Lithium	mg/kg	0.1	8.2	< 0.1
Magnesium	mg/kg	10	1750	< 10
Manganese	mg/kg	1	170	< 1
Molybdenum	mg/kg	0.1	0.9	< 0.1
Nickel	mg/kg	1	17	< 1
Potassium	mg/kg	20	1840	< 20
Rubidium	mg/kg	0.1	13.5	< 0.1
Selenium	mg/kg	1	1	< 1
Silver	mg/kg	0.1	0.1	< 0.1
Sodium	mg/kg	50	210	< 50
Strontium	mg/kg	1	27	< 1
Tellurium	mg/kg	0.1	< 0.1	< 0.1
Thallium	mg/kg	0.1	0.1	< 0.1
Tin	mg/kg	1	25	4
Uranium	mg/kg	0.1	0.8	< 0.1
Vanadium	mg/kg	1	33	< 1
Zinc	mg/kg	1	128	2

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Methods

Analyte	RPC SOP #	Method Reference	Method Principle
EPA 3050B Digestion	IAS-M19	EPA 3050B	Nitric Acid/Hydrogen Peroxide Digestion
Trace Metals	IAS-M01/IAS-M29	EPA 200.8/EPA 200.7	ICP-MS/ICP-ES

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Attention: Vladimir Trajkovic
Project #: PE23251
Location: PEI Government Garage

Analysis of Metals in Soil

RPC Sample ID:			491990-03	491990-05	491990-06
Client Sample ID:			MW23-02, SA1	MW23-03, SA2	MW23-04, SA2
Date Sampled:			18-Jul-23	18-Jul-23	18-Jul-23
Analytes	**Units**	**RL**			
Aluminum	mg/kg	1	10800	10000	10000
Antimony	mg/kg	0.1	0.7	0.5	0.4
Arsenic	mg/kg	1	13	4	8
Barium	mg/kg	1	138	40	55
Beryllium	mg/kg	0.1	0.6	0.5	0.5
Bismuth	mg/kg	1	< 1	< 1	< 1
Boron	mg/kg	1	4	4	4
Cadmium	mg/kg	0.01	0.25	0.05	0.56
Calcium	mg/kg	50	1520	1220	10800
Chromium	mg/kg	1	24	20	19
Cobalt	mg/kg	0.1	8.0	8.4	8.1
Copper	mg/kg	1	28	21	38
Iron	mg/kg	20	24300	24600	25600
Lead	mg/kg	0.1	138.	22.3	79.6
Lithium	mg/kg	0.1	27.3	27.4	25.5
Magnesium	mg/kg	10	3760	4290	8220
Manganese	mg/kg	1	327	582	486
Molybdenum	mg/kg	0.1	0.9	0.7	1.6
Nickel	mg/kg	1	27	20	19
Potassium	mg/kg	20	1430	1660	1210
Rubidium	mg/kg	0.1	10.7	11.8	10.3
Selenium	mg/kg	1	2	1	1
Silver	mg/kg	0.1	0.1	< 0.1	< 0.1
Sodium	mg/kg	50	100	80	380
Strontium	mg/kg	1	17	8	17
Tellurium	mg/kg	0.1	< 0.1	< 0.1	< 0.1
Thallium	mg/kg	0.1	0.3	< 0.1	0.1
Tin	mg/kg	1	5	1	10
Uranium	mg/kg	0.1	0.6	0.7	0.7
Vanadium	mg/kg	1	57	17	23
Zinc	mg/kg	1	163	53	201

This report relates only to the sample(s) and information provided to the laboratory.

RL = Reporting Limit

Matthew Norman
Senior Chemist
Inorganic Analytical Chemistry

Brannen Burhoe
Supervisor
Inorganic Analytical Services

Report ID: 491990-IAS
Report Date: 04-Aug-23
Date Received: 26-Jul-23

CERTIFICATE OF ANALYSIS

for
All-Tech Environmental Service Ltd
885 Bayside Drive
Saint John, NB E2R 1A3

rpc
921 College Hill Rd
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Canada E3B 6Z9
Tel: 506.452.1212
Fax: 506.452.0594
www.rpc.ca

Attention: Vladimir Trajkovic
Project #: PE23251
Location: PEI Government Garage

Analysis of Metals in Soil

RPC Sample ID:			491990-24	491990-26	491990-27
Client Sample ID:			MW23-18, SA1	MW23-19, SA1	MW23-20, SA1
Date Sampled:			24-Jul-23	24-Jul-23	24-Jul-23
Analytes	**Units**	**RL**			
Aluminum	mg/kg	1	8280	6720	8750
Antimony	mg/kg	0.1	0.2	0.3	0.2
Arsenic	mg/kg	1	2	6	3
Barium	mg/kg	1	30	27	23
Beryllium	mg/kg	0.1	0.5	0.5	0.5
Bismuth	mg/kg	1	< 1	< 1	< 1
Boron	mg/kg	1	3	2	3
Cadmium	mg/kg	0.01	0.01	0.12	0.04
Calcium	mg/kg	50	310	5760	1180
Chromium	mg/kg	1	18	13	16
Cobalt	mg/kg	0.1	7.1	5.5	6.7
Copper	mg/kg	1	7	13	9
Iron	mg/kg	20	18900	15000	19100
Lead	mg/kg	0.1	5.3	28.2	12.1
Lithium	mg/kg	0.1	25.9	12.8	22.8
Magnesium	mg/kg	10	3490	4720	3160
Manganese	mg/kg	1	515	392	301
Molybdenum	mg/kg	0.1	0.2	0.6	0.4
Nickel	mg/kg	1	16	12	15
Potassium	mg/kg	20	1350	700	1270
Rubidium	mg/kg	0.1	10.3	4.9	8.9
Selenium	mg/kg	1	2	1	1
Silver	mg/kg	0.1	< 0.1	< 0.1	< 0.1
Sodium	mg/kg	50	310	200	200
Strontium	mg/kg	1	4	8	5
Tellurium	mg/kg	0.1	< 0.1	< 0.1	< 0.1
Thallium	mg/kg	0.1	< 0.1	< 0.1	< 0.1
Tin	mg/kg	1	< 1	< 1	< 1
Uranium	mg/kg	0.1	0.6	0.6	0.6
Vanadium	mg/kg	1	12	37	13
Zinc	mg/kg	1	32	346	36

Report ID: 491990-IAS
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General Report Comments

Samples were air dried and sieved at 2 mm. A portion of each was digested according to EPA Method 3050B. The resulting solutions were analyzed for trace elements by ICP-MS.

Report ID: 491990-IAS
Report Date: 04-Aug-23
Date Received: 26-Jul-23

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Project #: PE23251
Location: PEI Government Garage
QA/QC Report

RPC Sample ID:			CRM191034	RB103366
Type:			CRM NIST 2706	Blank
Analytes	**Units**	**RL**		
Aluminum	mg/kg	1	9580	< 1
Antimony	mg/kg	0.1	45.5	< 0.1
Arsenic	mg/kg	1	30	< 1
Barium	mg/kg	1	110	< 1
Beryllium	mg/kg	0.1	0.5	< 0.1
Bismuth	mg/kg	1	< 1	< 1
Boron	mg/kg	1	12	< 1
Cadmium	mg/kg	0.01	0.23	< 0.01
Calcium	mg/kg	50	4750	< 50
Chromium	mg/kg	1	21	< 1
Cobalt	mg/kg	0.1	4.7	< 0.1
Copper	mg/kg	1	86	< 1
Iron	mg/kg	20	18000	< 20
Lead	mg/kg	0.1	626.	< 0.1
Lithium	mg/kg	0.1	8.2	< 0.1
Magnesium	mg/kg	10	1750	< 10
Manganese	mg/kg	1	170	< 1
Molybdenum	mg/kg	0.1	0.9	< 0.1
Nickel	mg/kg	1	17	< 1
Potassium	mg/kg	20	1840	< 20
Rubidium	mg/kg	0.1	13.5	< 0.1
Selenium	mg/kg	1	1	< 1
Silver	mg/kg	0.1	0.1	< 0.1
Sodium	mg/kg	50	210	< 50
Strontium	mg/kg	1	27	< 1
Tellurium	mg/kg	0.1	< 0.1	< 0.1
Thallium	mg/kg	0.1	0.1	< 0.1
Tin	mg/kg	1	25	4
Uranium	mg/kg	0.1	0.8	< 0.1
Vanadium	mg/kg	1	33	< 1
Zinc	mg/kg	1	128	2

Report ID: 491990-IAS
Report Date: 04-Aug-23
Date Received: 26-Jul-23

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Methods

Analyte	RPC SOP #	Method Reference	Method Principle
EPA 3050B Digestion	IAS-M19	EPA 3050B	Nitric Acid/Hydrogen Peroxide Digestion
Trace Metals	IAS-M01/IAS-M29	EPA 200.8/EPA 200.7	ICP-MS/ICP-ES

Report ID: 493176-IAS
Report Date: 10-Aug-23
Date Received: 03-Aug-23

CERTIFICATE OF ANALYSIS

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Attention: Vladimir Trajkovic
Project #: PE23251
Location: PEI Government Garage

Analysis of Metals in Soil

RPC Sample ID:			493176-1
Client Sample ID:			BH23-02, Sa2
Date Sampled:			3-Aug-23
Analytes	**Units**	**RL**	
Aluminum	mg/kg	1	9280
Antimony	mg/kg	0.1	4.1
Arsenic	mg/kg	1	29
Barium	mg/kg	1	196
Beryllium	mg/kg	0.1	0.7
Bismuth	mg/kg	1	< 1
Boron	mg/kg	1	7
Cadmium	mg/kg	0.01	0.14
Calcium	mg/kg	50	7200
Chromium	mg/kg	1	31
Cobalt	mg/kg	0.1	8.6
Copper	mg/kg	1	88
Iron	mg/kg	20	48100
Lead	mg/kg	0.1	894.
Lithium	mg/kg	0.1	19.4
Magnesium	mg/kg	10	3180
Manganese	mg/kg	1	396
Molybdenum	mg/kg	0.1	5.0
Nickel	mg/kg	1	34
Potassium	mg/kg	20	1020
Rubidium	mg/kg	0.1	8.7
Selenium	mg/kg	1	< 1
Silver	mg/kg	0.1	0.6
Sodium	mg/kg	50	480
Strontium	mg/kg	1	35
Tellurium	mg/kg	0.1	< 0.1
Thallium	mg/kg	0.1	0.3
Tin	mg/kg	1	251
Uranium	mg/kg	0.1	1.0
Vanadium	mg/kg	1	27
Zinc	mg/kg	1	753

This report relates only to the sample(s) and information provided to the laboratory.

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Matthew Norman
Senior Chemist
Inorganic Analytical Chemistry

Brannen Burhoe
Supervisor
Inorganic Analytical Services

Report ID: 493176-IAS
Report Date: 10-Aug-23
Date Received: 03-Aug-23

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General Report Comments

Sample was air dried and sieved at 2 mm. A portion was digested according to EPA Method 3050B.
The resulting solution was analyzed for trace elements by ICP-MS.

Report ID: 493176-IAS
Report Date: 10-Aug-23
Date Received: 03-Aug-23

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Project #: PE23251
Location: PEI Government Garage
QA/QC Report

RPC Sample ID:			CRM191372	RB103506
Type:			CRM NIST 2706	Blank
Analytes	**Units**	**RL**		
Aluminum	mg/kg	1	10800	2
Antimony	mg/kg	0.1	45.8	0.2
Arsenic	mg/kg	1	30	< 1
Barium	mg/kg	1	109	< 1
Beryllium	mg/kg	0.1	0.5	< 0.1
Bismuth	mg/kg	1	< 1	< 1
Boron	mg/kg	1	12	< 1
Cadmium	mg/kg	0.01	0.26	< 0.01
Calcium	mg/kg	50	4540	< 50
Chromium	mg/kg	1	21	< 1
Cobalt	mg/kg	0.1	4.8	< 0.1
Copper	mg/kg	1	85	< 1
Iron	mg/kg	20	19200	< 20
Lead	mg/kg	0.1	690.	< 0.1
Lithium	mg/kg	0.1	8.3	< 0.1
Magnesium	mg/kg	10	1800	< 10
Manganese	mg/kg	1	174	< 1
Molybdenum	mg/kg	0.1	0.9	< 0.1
Nickel	mg/kg	1	17	< 1
Potassium	mg/kg	20	1880	< 20
Rubidium	mg/kg	0.1	14.0	< 0.1
Selenium	mg/kg	1	< 1	< 1
Silver	mg/kg	0.1	< 0.1	< 0.1
Sodium	mg/kg	50	200	< 50
Strontium	mg/kg	1	27	< 1
Tellurium	mg/kg	0.1	< 0.1	< 0.1
Thallium	mg/kg	0.1	0.1	< 0.1
Tin	mg/kg	1	25	4
Uranium	mg/kg	0.1	0.8	< 0.1
Vanadium	mg/kg	1	33	< 1
Zinc	mg/kg	1	126	< 1

Report ID: 493176-IAS
Report Date: 10-Aug-23
Date Received: 03-Aug-23

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Methods

Analyte	RPC SOP #	Method Reference	Method Principle
EPA 3050B Digestion	IAS-M19	EPA 3050B	Nitric Acid/Hydrogen Peroxide Digestion
Trace Metals	IAS-M01/IAS-M29	EPA 200.8/EPA 200.7	ICP-MS/ICP-ES

Report ID: 491916-IAS
Report Date: 04-Aug-23
Date Received: 26-Jul-23

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Attention: Vladimir Trajkovic
Project #: PE23251
Location: PEI Government Garage

Analysis of Metals in Soil

RPC Sample ID:			491916-01	491916-01 Dup	491916-02
Client Sample ID:			SS-01	Lab Duplicate	SS-04
Date Sampled:			19-Jul-23	19-Jul-23	19-Jul-23
Analytes	**Units**	**RL**			
Aluminum	mg/kg	1	8030	8220	5210
Antimony	mg/kg	0.1	2.3	2.1	6.0
Arsenic	mg/kg	1	19	18	27
Barium	mg/kg	1	94	95	208
Beryllium	mg/kg	0.1	0.7	0.7	0.5
Bismuth	mg/kg	1	< 1	< 1	< 1
Boron	mg/kg	1	4	5	3
Cadmium	mg/kg	0.01	0.46	0.43	0.24
Calcium	mg/kg	50	11200	12300	7340
Chromium	mg/kg	1	23	23	13
Cobalt	mg/kg	0.1	7.2	7.4	7.4
Copper	mg/kg	1	100	92	121
Iron	mg/kg	20	42500	48100	50200
Lead	mg/kg	0.1	166.	150.	258.
Lithium	mg/kg	0.1	14.1	14.2	10.8
Magnesium	mg/kg	10	3910	4320	3120
Manganese	mg/kg	1	558	595	451
Molybdenum	mg/kg	0.1	5.1	6.4	5.7
Nickel	mg/kg	1	19	19	19
Potassium	mg/kg	20	820	800	600
Rubidium	mg/kg	0.1	7.1	6.5	4.8
Selenium	mg/kg	1	2	2	1
Silver	mg/kg	0.1	< 0.1	< 0.1	< 0.1
Sodium	mg/kg	50	1520	1460	540
Strontium	mg/kg	1	39	40	24
Tellurium	mg/kg	0.1	< 0.1	< 0.1	< 0.1
Thallium	mg/kg	0.1	0.3	0.3	0.2
Tin	mg/kg	1	10	9	25
Uranium	mg/kg	0.1	0.9	0.8	0.5
Vanadium	mg/kg	1	37	42	20
Zinc	mg/kg	1	169	162	115

This report relates only to the sample(s) and information provided to the laboratory.

RL = Reporting Limit

Matthew Norman
Senior Chemist
Inorganic Analytical Chemistry

Brannen Burhoe
Supervisor
Inorganic Analytical Services

Report ID: 491916-IAS
Report Date: 04-Aug-23
Date Received: 26-Jul-23

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Attention: Vladimir Trajkovic
Project #: PE23251
Location: PEI Government Garage

Analysis of Metals in Soil

RPC Sample ID:			491916-03	491916-04	491916-05
Client Sample ID:			SS-05	SS-06	SS-07
Date Sampled:			19-Jul-23	19-Jul-23	19-Jul-23
Analytes	**Units**	**RL**			
Aluminum	mg/kg	1	6650	6820	6530
Antimony	mg/kg	0.1	2.7	1.8	1.9
Arsenic	mg/kg	1	25	31	18
Barium	mg/kg	1	84	93	76
Beryllium	mg/kg	0.1	0.6	0.6	0.6
Bismuth	mg/kg	1	< 1	< 1	< 1
Boron	mg/kg	1	4	4	4
Cadmium	mg/kg	0.01	0.53	1.51	0.65
Calcium	mg/kg	50	5090	7780	9300
Chromium	mg/kg	1	25	32	16
Cobalt	mg/kg	0.1	8.2	8.3	7.7
Copper	mg/kg	1	178	169	83
Iron	mg/kg	20	61400	46900	39400
Lead	mg/kg	0.1	199.	192.	114.
Lithium	mg/kg	0.1	13.6	12.6	12.2
Magnesium	mg/kg	10	2010	2580	4280
Manganese	mg/kg	1	481	500	549
Molybdenum	mg/kg	0.1	4.5	4.5	5.4
Nickel	mg/kg	1	25	23	24
Potassium	mg/kg	20	730	740	690
Rubidium	mg/kg	0.1	6.4	6.6	6.3
Selenium	mg/kg	1	1	2	1
Silver	mg/kg	0.1	< 0.1	0.1	< 0.1
Sodium	mg/kg	50	480	860	200
Strontium	mg/kg	1	28	34	28
Tellurium	mg/kg	0.1	< 0.1	< 0.1	< 0.1
Thallium	mg/kg	0.1	0.3	0.4	0.2
Tin	mg/kg	1	16	14	9
Uranium	mg/kg	0.1	0.5	0.9	0.6
Vanadium	mg/kg	1	24	32	26
Zinc	mg/kg	1	228	505	234

Report ID: 491916-IAS
Report Date: 04-Aug-23
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Attention: Vladimir Trajkovic
Project #: PE23251
Location: PEI Government Garage

Analysis of Metals in Soil

RPC Sample ID:			491916-06	491916-07	491916-08
Client Sample ID:			SS-08	SS-09	SS-13
Date Sampled:			19-Jul-23	20-Jul-23	21-Jul-23
Analytes	**Units**	**RL**			
Aluminum	mg/kg	1	5570	11400	7940
Antimony	mg/kg	0.1	1.4	0.8	0.1
Arsenic	mg/kg	1	13	8	3
Barium	mg/kg	1	58	60	29
Beryllium	mg/kg	0.1	0.4	0.6	0.5
Bismuth	mg/kg	1	< 1	< 1	< 1
Boron	mg/kg	1	3	5	2
Cadmium	mg/kg	0.01	0.25	0.53	0.25
Calcium	mg/kg	50	5040	3240	1570
Chromium	mg/kg	1	14	27	16
Cobalt	mg/kg	0.1	7.2	8.9	6.3
Copper	mg/kg	1	77	69	15
Iron	mg/kg	20	39400	30200	17800
Lead	mg/kg	0.1	127.	147.	33.2
Lithium	mg/kg	0.1	12.2	28.1	15.9
Magnesium	mg/kg	10	2540	4710	3000
Manganese	mg/kg	1	466	464	479
Molybdenum	mg/kg	0.1	2.9	1.9	0.5
Nickel	mg/kg	1	20	23	21
Potassium	mg/kg	20	650	1370	930
Rubidium	mg/kg	0.1	5.2	11.3	7.4
Selenium	mg/kg	1	< 1	1	1
Silver	mg/kg	0.1	< 0.1	< 0.1	< 0.1
Sodium	mg/kg	50	130	180	230
Strontium	mg/kg	1	20	15	7
Tellurium	mg/kg	0.1	< 0.1	< 0.1	< 0.1
Thallium	mg/kg	0.1	0.2	0.1	< 0.1
Tin	mg/kg	1	7	8	< 1
Uranium	mg/kg	0.1	0.5	0.8	0.7
Vanadium	mg/kg	1	18	43	32
Zinc	mg/kg	1	120	324	152

Report ID: 491916-IAS
Report Date: 04-Aug-23
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Attention: Vladimir Trajkovic
Project #: PE23251
Location: PEI Government Garage

Analysis of Metals in Soil

RPC Sample ID:			491916-09	491916-10	491916-11
Client Sample ID:			SS-16	SS-17	SS-18
Date Sampled:			21-Jul-23	25-Jul-23	25-Jul-23
Analytes	**Units**	**RL**			
Aluminum	mg/kg	1	9050	6850	7220
Antimony	mg/kg	0.1	0.2	0.8	1.0
Arsenic	mg/kg	1	3	7	7
Barium	mg/kg	1	27	27	32
Beryllium	mg/kg	0.1	0.5	0.4	0.4
Bismuth	mg/kg	1	< 1	< 1	< 1
Boron	mg/kg	1	3	3	3
Cadmium	mg/kg	0.01	0.11	0.63	0.57
Calcium	mg/kg	50	11700	1160	900
Chromium	mg/kg	1	16	13	14
Cobalt	mg/kg	0.1	6.3	5.3	5.5
Copper	mg/kg	1	15	45	43
Iron	mg/kg	20	18500	16200	17300
Lead	mg/kg	0.1	24.4	139.	146.
Lithium	mg/kg	0.1	19.1	15.1	16.1
Magnesium	mg/kg	10	8400	1700	1740
Manganese	mg/kg	1	418	355	344
Molybdenum	mg/kg	0.1	1.5	2.1	1.7
Nickel	mg/kg	1	13	17	18
Potassium	mg/kg	20	980	810	860
Rubidium	mg/kg	0.1	9.0	6.3	6.7
Selenium	mg/kg	1	< 1	1	1
Silver	mg/kg	0.1	< 0.1	< 0.1	< 0.1
Sodium	mg/kg	50	140	250	250
Strontium	mg/kg	1	10	11	9
Tellurium	mg/kg	0.1	< 0.1	< 0.1	< 0.1
Thallium	mg/kg	0.1	< 0.1	< 0.1	< 0.1
Tin	mg/kg	1	< 1	3	4
Uranium	mg/kg	0.1	0.6	0.6	0.5
Vanadium	mg/kg	1	19	46	39
Zinc	mg/kg	1	72	187	191

Report ID: 491916-IAS
Report Date: 04-Aug-23
Date Received: 26-Jul-23

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Attention: Vladimir Trajkovic
Project #: PE23251
Location: PEI Government Garage

Analysis of Metals in Soil

RPC Sample ID:			491916-12	491916-13	491916-14
Client Sample ID:			SS-19	SS-21	SS-23
Date Sampled:			20-Jul-23	21-Jul-23	26-Jul-23
Analytes	**Units**	**RL**			
Aluminum	mg/kg	1	11800	8540	9290
Antimony	mg/kg	0.1	0.5	0.2	0.2
Arsenic	mg/kg	1	9	4	3
Barium	mg/kg	1	65	29	28
Beryllium	mg/kg	0.1	0.6	0.5	0.7
Bismuth	mg/kg	1	< 1	< 1	< 1
Boron	mg/kg	1	5	3	5
Cadmium	mg/kg	0.01	0.61	0.12	0.03
Calcium	mg/kg	50	3040	2910	640
Chromium	mg/kg	1	25	15	18
Cobalt	mg/kg	0.1	8.8	6.7	6.9
Copper	mg/kg	1	43	15	9
Iron	mg/kg	20	30300	18600	21800
Lead	mg/kg	0.1	142.	58.3	7.2
Lithium	mg/kg	0.1	28.5	20.3	25.7
Magnesium	mg/kg	10	4670	3410	3720
Manganese	mg/kg	1	501	392	305
Molybdenum	mg/kg	0.1	1.8	0.6	0.4
Nickel	mg/kg	1	23	15	17
Potassium	mg/kg	20	1420	1100	1590
Rubidium	mg/kg	0.1	11.8	8.5	10.3
Selenium	mg/kg	1	1	1	1
Silver	mg/kg	0.1	< 0.1	< 0.1	< 0.1
Sodium	mg/kg	50	170	80	840
Strontium	mg/kg	1	16	8	5
Tellurium	mg/kg	0.1	< 0.1	< 0.1	< 0.1
Thallium	mg/kg	0.1	0.2	< 0.1	< 0.1
Tin	mg/kg	1	5	< 1	< 1
Uranium	mg/kg	0.1	0.8	0.5	0.6
Vanadium	mg/kg	1	43	19	15
Zinc	mg/kg	1	327	60	38

Report ID: 491916-IAS
Report Date: 04-Aug-23
Date Received: 26-Jul-23

CERTIFICATE OF ANALYSIS

for

All-Tech Environmental Service Ltd
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General Report Comments

Samples were air dried and sieved at 2 mm. A portion of each was digested according to EPA Method 3050B. The resulting solutions were analyzed for trace elements by ICP-MS.

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Project #: PE23251
Location: PEI Government Garage
QA/QC Report

RPC Sample ID:			CRM191034	RB103366
Type:			CRM NIST 2706	Blank
Analytes	**Units**	**RL**		
Aluminum	mg/kg	1	9580	< 1
Antimony	mg/kg	0.1	45.5	< 0.1
Arsenic	mg/kg	1	30	< 1
Barium	mg/kg	1	110	< 1
Beryllium	mg/kg	0.1	0.5	< 0.1
Bismuth	mg/kg	1	< 1	< 1
Boron	mg/kg	1	12	< 1
Cadmium	mg/kg	0.01	0.23	< 0.01
Calcium	mg/kg	50	4750	< 50
Chromium	mg/kg	1	21	< 1
Cobalt	mg/kg	0.1	4.7	< 0.1
Copper	mg/kg	1	86	< 1
Iron	mg/kg	20	18000	< 20
Lead	mg/kg	0.1	626.	< 0.1
Lithium	mg/kg	0.1	8.2	< 0.1
Magnesium	mg/kg	10	1750	< 10
Manganese	mg/kg	1	170	< 1
Molybdenum	mg/kg	0.1	0.9	< 0.1
Nickel	mg/kg	1	17	< 1
Potassium	mg/kg	20	1840	< 20
Rubidium	mg/kg	0.1	13.5	< 0.1
Selenium	mg/kg	1	1	< 1
Silver	mg/kg	0.1	0.1	< 0.1
Sodium	mg/kg	50	210	< 50
Strontium	mg/kg	1	27	< 1
Tellurium	mg/kg	0.1	< 0.1	< 0.1
Thallium	mg/kg	0.1	0.1	< 0.1
Tin	mg/kg	1	25	4
Uranium	mg/kg	0.1	0.8	< 0.1
Vanadium	mg/kg	1	33	< 1
Zinc	mg/kg	1	128	2

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Methods

Analyte	RPC SOP #	Method Reference	Method Principle
EPA 3050B Digestion	IAS-M19	EPA 3050B	Nitric Acid/Hydrogen Peroxide Digestion
Trace Metals	IAS-M01/IAS-M29	EPA 200.8/EPA 200.7	ICP-MS/ICP-ES

Report ID: 493175-OAS
Report Date: 11-Aug-23
Date Received: 03-Aug-23

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Attention: Vladimir Trajkovic
Project #: PE23251
Location: PEI Government Garage

Hydrocarbon Analysis in Water (Atlantic MUST)

RPC Sample ID:			493175-01	493175-02	493175-03	493175-04	493175-05	493175-06
Client Sample ID:			MW23-03	MW23-04	MW23-05	MW23-06	MW23-07	MW23-08
Date Sampled:			2-Aug-23	2-Aug-23	2-Aug-23	1-Aug-23	1-Aug-23	1-Aug-23
Matrix:			water	water	water	water	water	water
Analytes	Units	RL						
Benzene	mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Xylenes	mg/L	0.001	< 0.001	0.001	< 0.001	< 0.001	< 0.001	< 0.001
VPH C6-C10 (Less BTEX)	mg/L	0.01	< 0.01	0.10	< 0.01	< 0.01	< 0.01	< 0.01
EPH >C10 - C16	mg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EPH >C16 - C21	mg/L	0.05	< 0.05	< 0.05	0.07	< 0.05	< 0.05	< 0.05
EPH >C21-C32	mg/L	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Modified TPH Tier 1	mg/L	0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1
VPH Surrogate (IBB)	%		106	102	101	95	99	97
EPH Surrogate (IBB)	%		110	108	104	108	105	104
EPH Surrogate (C32)	%		109	105	101	107	104	102
Resemblance			ND	PWG	ND	ND	ND	ND
Return to Baseline at C32			Yes	Yes	Yes	Yes	Yes	Yes

This report relates only to the sample(s) and information provided to the laboratory.
RL = Reporting Limit

Angela Colford
Lab Supervisor
Organic Analytical Services

Steven Davenport
Senior Technician
Organic Analytical Services

Report ID: 493175-OAS
Report Date: 11-Aug-23
Date Received: 03-Aug-23

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Attention: Vladimir Trajkovic
Project #: PE23251
Location: PEI Government Garage

Hydrocarbon Analysis in Water (Atlantic MUST)

RPC Sample ID:			493175-07	493175-08	493175-08 Dup	493175-09	493175-10	493175-11
Client Sample ID:			MW23-09	MW23-10	MW23-10	MW23-11	MW23-12	MW22-01
Date Sampled:			1-Aug-23	1-Aug-23	1-Aug-23	1-Aug-23	1-Aug-23	1-Aug-23
Matrix:			water	water	water	water	water	water
Analytes	Units	RL						
Benzene	mg/L	0.001	< 0.001	< 0.001	< 0.001	0.094	0.001	< 0.001
Toluene	mg/L	0.001	< 0.001	< 0.001	< 0.001	0.003	< 0.001	< 0.001
Ethylbenzene	mg/L	0.001	< 0.001	< 0.001	< 0.001	0.092	0.033	< 0.001
Xylenes	mg/L	0.001	< 0.001	< 0.001	< 0.001	0.074	0.036	< 0.001
VPH C6-C10 (Less BTEX)	mg/L	0.01	< 0.01	< 0.01	< 0.01	0.49	0.28	< 0.01
EPH >C10 - C16	mg/L	0.05	< 0.05	< 0.05	< 0.05	0.17	0.70	< 0.05
EPH >C16 - C21	mg/L	0.05	< 0.05	0.10	0.10	< 0.05	0.55	< 0.05
EPH >C21-C32	mg/L	0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.2	< 0.1
Modified TPH Tier 1	mg/L	0.1	< 0.1	0.1	0.1	0.7	1.7	< 0.1
VPH Surrogate (IBB)	%		99	96	93	104	110	95
EPH Surrogate (IBB)	%		106	110	111	108	107	98
EPH Surrogate (C32)	%		106	110	110	105	108	99
Resemblance			ND	WFO	WFO	G	G.WFO	ND
Return to Baseline at C32			Yes	Yes	Yes	Yes	Yes	Yes

Report ID: 493175-OAS
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Attention: Vladimir Trajkovic
Project #: PE23251
Location: PEI Government Garage

Hydrocarbon Analysis in Water (Atlantic MUST)

RPC Sample ID:			493175-12	493175-13	493175-14	493175-15	493175-16	493175-17
Client Sample ID:			MW22-02	MW22-03	MW22-04	MW22-05	MW22-06	MW22-07
Date Sampled:			1-Aug-23	1-Aug-23	1-Aug-23	2-Aug-23	2-Aug-23	2-Aug-23
Matrix:			water	water	water	water	water	water
Analytes	Units	RL						
Benzene	mg/L	0.001	0.087	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	mg/L	0.001	0.004	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	mg/L	0.001	0.083	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Xylenes	mg/L	0.001	0.068	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
VPH C6-C10 (Less BTEX)	mg/L	0.01	0.44	0.06	< 0.01	0.02 (comment)	< 0.01	< 0.01
EPH >C10 - C16	mg/L	0.05	0.22	0.36	< 0.05	< 0.05	< 0.05	< 0.05
EPH >C16 - C21	mg/L	0.05	< 0.05	0.22	< 0.05	0.09	0.07	< 0.05
EPH >C21-C32	mg/L	0.1	< 0.1	0.2	0.1	0.2	0.1	< 0.1
Modified TPH Tier 1	mg/L	0.1	0.7	0.8	0.1	0.3	0.2	< 0.1
VPH Surrogate (IBB)	%		107	106	101	94	99	97
EPH Surrogate (IBB)	%		108	112	112	97	108	108
EPH Surrogate (C32)	%		108	114	116	97	105	115
Resemblance			G	PWG.WFO	LO	PWFO.LO	PWFO.LO	ND
Return to Baseline at C32			Yes	Yes	Yes	Yes	Yes	Yes

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Attention: Vladimir Trajkovic
Project #: PE23251
Location: PEI Government Garage

Hydrocarbon Analysis in Water (Atlantic MUST)

RPC Sample ID:			493175-18	493175-19	493175-20	493175-21	493175-22	493175-23
Client Sample ID:			MW22-08	MW23-01	MW23-02	MW23-13	MW23-14	MW23-15
Date Sampled:			2-Aug-23	2-Aug-23	2-Aug-23	1-Aug-23	2-Aug-23	2-Aug-23
Matrix:			water	water	water	water	water	water
Analytes	Units	RL						
Benzene	mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Xylenes	mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
VPH C6-C10 (Less BTEX)	mg/L	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02 (comment)
EPH >C10 - C16	mg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
EPH >C16 - C21	mg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.08
EPH >C21-C32	mg/L	0.1	0.3	< 0.1	< 0.1	< 0.1	< 0.1	0.1
Modified TPH Tier 1	mg/L	0.1	0.3	< 0.1	< 0.1	< 0.1	< 0.1	0.2
VPH Surrogate (IBB)	%		100	96	97	98	96	97
EPH Surrogate (IBB)	%		116	108	107	112	110	105
EPH Surrogate (C32)	%		120	112	111	118	112	106
Resemblance			LO	ND	ND	ND	ND	PWFO.LO
Return to Baseline at C32			Yes	Yes	Yes	Yes	Yes	Yes

Report ID: 493175-OAS
Report Date: 11-Aug-23
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Attention: Vladimir Trajkovic
Project #: PE23251
Location: PEI Government Garage

Hydrocarbon Analysis in Water (Atlantic MUST)

RPC Sample ID:			493175-24	493175-25	493175-26	493175-26 Dup	493175-27	493175-28
Client Sample ID:			MW23-16	MW23-17	MW23-18	MW23-18	MW23-19	MW23-20
Date Sampled:			1-Aug-23	1-Aug-23	1-Aug-23	1-Aug-23	1-Aug-23	1-Aug-23
Matrix:			water	water	water	water	water	water
Analytes	Units	RL						
Benzene	mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Xylenes	mg/L	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
VPH C6-C10 (Less BTEX)	mg/L	0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.06	< 0.01
EPH >C10 - C16	mg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.32	< 0.05
EPH >C16 - C21	mg/L	0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.21	0.07
EPH >C21-C32	mg/L	0.1	< 0.1	< 0.1	0.3	< 0.1	0.2	< 0.1
Modified TPH Tier 1	mg/L	0.1	< 0.1	< 0.1	0.3	< 0.1	0.8	< 0.1
VPH Surrogate (IBB)	%		96	94	95	96	105	93
EPH Surrogate (IBB)	%		106	105	106	110	109	84
EPH Surrogate (C32)	%		122	113	116	117	116	82
Resemblance			ND	ND	LO	ND	PWG.WFO	ND
Return to Baseline at C32			Yes	Yes	Yes	Yes	Yes	Yes

Report ID: 493175-OAS
Report Date: 11-Aug-23
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Attention: Vladimir Trajkovic
Project #: PE23251
Location: PEI Government Garage

Hydrocarbon Analysis in Water (Atlantic MUST)

RPC Sample ID:			493175-29	493175-30
Client Sample ID:			MW23-21	MW23-22
Date Sampled:			1-Aug-23	1-Aug-23
Matrix:			water	water
Analytes	Units	RL		
Benzene	mg/L	0.001	< 0.001	< 0.001
Toluene	mg/L	0.001	< 0.001	< 0.001
Ethylbenzene	mg/L	0.001	< 0.001	< 0.001
Xylenes	mg/L	0.001	< 0.001	< 0.001
VPH C6-C10 (Less BTEX)	mg/L	0.01	< 0.01	< 0.01
EPH >C10 - C16	mg/L	0.05	< 0.05	< 0.05
EPH >C16 - C21	mg/L	0.05	< 0.05	< 0.05
EPH >C21-C32	mg/L	0.1	< 0.1	< 0.1
Modified TPH Tier 1	mg/L	0.1	< 0.1	< 0.1
VPH Surrogate (IBB)	%		94	97
EPH Surrogate (IBB)	%		92	86
EPH Surrogate (C32)	%		93	87
Resemblance			ND	ND
Return to Baseline at C32			Yes	Yes

Report ID: 493175-OAS
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Attention: Vladimir Trajkovic
Project #: PE23251
Location: PEI Government Garage

PAH in Water

RPC Sample ID:			493175-01	493175-02	493175-03	493175-20	493175-22	493175-23
Client Sample ID:			MW23-03	MW23-04	MW23-05	MW23-02	MW23-14	MW23-15
Date Sampled:			2-Aug-23	2-Aug-23	2-Aug-23	2-Aug-23	2-Aug-23	2-Aug-23
Matrix:			water	water	water	water	water	water
Analytes	Units	RL						
Naphthalene	µg/L	0.05	< 0.05	< 0.20	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	µg/L	0.01	< 0.01	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/L	0.01	0.03	< 0.02	< 0.01	< 0.01	0.01	< 0.01
Fluorene	µg/L	0.01	< 0.01	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/L	0.01	< 0.01	< 0.02	< 0.01	< 0.01	0.02	< 0.01
Anthracene	µg/L	0.01	0.02	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/L	0.01	< 0.01	< 0.02	< 0.01	< 0.01	0.03	< 0.01
Pyrene	µg/L	0.01	< 0.01	< 0.02	< 0.01	< 0.01	0.03	0.02
Benz(a)anthracene	µg/L	0.01	< 0.01	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene/Triphenylene	µg/L	0.01	< 0.01	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b+j)fluoranthene	µg/L	0.01	< 0.01	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/L	0.01	< 0.01	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(e)pyrene	µg/L	0.01	< 0.01	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/L	0.01	< 0.01	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-c,d)pyrene	µg/L	0.01	< 0.01	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(g,h,i)perylene	µg/L	0.01	< 0.01	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/L	0.01	< 0.01	< 0.02	< 0.01	< 0.01	< 0.01	< 0.01
2-fluorobiphenyl (surrogate)	%		64	69	64	73	73	63
p-terphenyl-d14 (surrogate)	%		85	83	72	80	80	75

This report relates only to the sample(s) and information provided to the laboratory.
RL = Reporting Limit

Angela Colford
Lab Supervisor
Organic Analytical Services

Steven Davenport
Senior Technician
Organic Analytical Services

Report ID: 493175-OAS
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Attention: Vladimir Trajkovic
Project #: PE23251
Location: PEI Government Garage

PAH in Water

RPC Sample ID:			493175-26	493175-27	493175-28	493175-29	493175-30
Client Sample ID:			MW23-18	MW23-19	MW23-20	MW23-21	MW23-22
Date Sampled:			1-Aug-23	1-Aug-23	1-Aug-23	1-Aug-23	1-Aug-23
Matrix:			water	water	water	water	water
Analytes	Units	RL					
Naphthalene	µg/L	0.05	< 0.05	< 0.20	< 0.05	< 0.05	< 0.05
Acenaphthylene	µg/L	0.01	< 0.01	< 0.05	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/L	0.01	< 0.01	2.2	< 0.01	< 0.01	< 0.01
Fluorene	µg/L	0.01	< 0.01	1.8	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/L	0.01	< 0.01	2.1	< 0.01	< 0.01	< 0.01
Anthracene	µg/L	0.01	< 0.01	0.28	0.01	< 0.01	< 0.01
Fluoranthene	µg/L	0.01	< 0.01	0.37	0.06	< 0.01	< 0.01
Pyrene	µg/L	0.01	< 0.01	0.22	0.04	< 0.01	< 0.01
Benz(a)anthracene	µg/L	0.01	< 0.01	0.07	< 0.01	< 0.01	< 0.01
Chrysene/Triphenylene	µg/L	0.01	< 0.01	< 0.05	< 0.01	< 0.01	< 0.01
Benzo(b+j)fluoranthene	µg/L	0.01	< 0.01	< 0.05	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/L	0.01	< 0.01	< 0.05	< 0.01	< 0.01	< 0.01
Benzo(e)pyrene	µg/L	0.01	< 0.01	< 0.05	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/L	0.01	< 0.01	< 0.05	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-c,d)pyrene	µg/L	0.01	< 0.01	< 0.05	< 0.01	< 0.01	< 0.01
Benzo(g,h,i)perylene	µg/L	0.01	< 0.01	< 0.05	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/L	0.01	< 0.01	< 0.05	< 0.01	< 0.01	< 0.01
2-fluorobiphenyl (surrogate)	%		77	69	68	62	52
p-terphenyl-d14 (surrogate)	%		85	74	75	72	76

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Attention: Vladimir Trajkovic
Project #: PE23251
Location: PEI Government Garage

PCB's in Water

RPC Sample ID:			493175-26	493175-27	493175-28
Client Sample ID:			MW23-18	MW23-19	MW23-20
Date Sampled:			1-Aug-23	1-Aug-23	1-Aug-23
Matrix:			water	water	water
Analytes	Units	RL			
Total PCB	µg/L	0.1	< 0.1	< 0.1	< 0.1
PCB Surrogate (DCB)	%		102	60	87
Resemblance			ND	ND	ND

This report relates only to the sample(s) and information provided to the laboratory.
RL = Reporting Limit

Karen Broad
Chemist
Organic Analytical Services

Nigel Skinner
Senior Technician
Organic Analytical Services

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Project #: PE23251
Location: PEI Government Garage

Volatile Organic Compounds in Water

RPC Sample ID:			493175-04	493175-05	493175-06	493175-07	493175-08	493175-09
Client Sample ID:			MW23-06	MW23-07	MW23-08	MW23-09	MW23-10	MW23-11
Date Sampled:			1-Aug-23	1-Aug-23	1-Aug-23	1-Aug-23	1-Aug-23	1-Aug-23
Matrix:			water	water	water	water	water	water
Analytes	Units	RL						
Chloromethane	µg/L	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Vinyl Chloride	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromomethane	µg/L	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	µg/L	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Trichlorofluoromethane	µg/L	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1-Dichloroethylene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Methylene Chloride	µg/L	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,2-Dichloroethylene (trans)	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1-Dichloroethane	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichloroethylene (cis)	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromochloromethane	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	µg/L	0.5	4.2	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,1-Trichloroethane	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Benzene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	90
1,2-Dichloroethane	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethylene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichloropropane	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromodichloromethane	µg/L	0.5	2.0	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,3-Dichloropropylene (trans)	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5

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RL = Reporting Limit

Angela Colford
Lab Supervisor
Organic Analytical Services

Steven Davenport
Senior Technician
Organic Analytical Services

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Attention: Vladimir Trajkovic
Project #: PE23251
Location: PEI Government Garage

Volatile Organic Compounds in Water

RPC Sample ID:			493175-04	493175-05	493175-06	493175-07	493175-08	493175-09
Client Sample ID:			MW23-06	MW23-07	MW23-08	MW23-09	MW23-10	MW23-11
Date Sampled:			1-Aug-23	1-Aug-23	1-Aug-23	1-Aug-23	1-Aug-23	1-Aug-23
Matrix:			water	water	water	water	water	water
Analytes	Units	RL						
Toluene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	3.3
1,3-Dichloropropylene (cis)	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2-Trichloroethane	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethylene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Dibromochloromethane	µg/L	0.5	0.7	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dibromoethane	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	100
m,p-Xylenes	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	79
o-Xylene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	3.6
Styrene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromoform	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,1,2-Tetrachloroethane	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2,2-Tetrachloroethane	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,3-Dichlorobenzene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,4-Dichlorobenzene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichlorobenzene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichloroethane-d4	%		102	102	101	101	103	101
Toluene-d8	%		100	101	101	100	99	100
4-Bromofluorobenzene	%		99	103	100	101	101	100

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Attention: Vladimir Trajkovic
Project #: PE23251
Location: PEI Government Garage

Volatile Organic Compounds in Water

RPC Sample ID:			493175-10	493175-21	493175-22	493175-23	493175-24	493175-25
Client Sample ID:			MW23-12	MW23-13	MW23-14	MW23-15	MW23-16	MW23-17
Date Sampled:			1-Aug-23	1-Aug-23	2-Aug-23	2-Aug-23	1-Aug-23	1-Aug-23
Matrix:			water	water	water	water	water	water
Analytes	Units	RL						
Chloromethane	µg/L	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Vinyl Chloride	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromomethane	µg/L	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	µg/L	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Trichlorofluoromethane	µg/L	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1-Dichloroethylene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Methylene Chloride	µg/L	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,2-Dichloroethylene (trans)	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1-Dichloroethane	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichloroethylene (cis)	µg/L	0.5	< 0.5	< 0.5	0.5	< 0.5	< 0.5	< 0.5
Bromochloromethane	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,1-Trichloroethane	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Benzene	µg/L	0.5	0.9	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichloroethane	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethylene	µg/L	0.5	< 0.5	< 0.5	0.9	0.6	< 0.5	< 0.5
1,2-Dichloropropane	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromodichloromethane	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,3-Dichloropropylene (trans)	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5

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Attention: Vladimir Trajkovic
Project #: PE23251
Location: PEI Government Garage

Volatile Organic Compounds in Water

RPC Sample ID:			493175-10	493175-21	493175-22	493175-23	493175-24	493175-25
Client Sample ID:			MW23-12	MW23-13	MW23-14	MW23-15	MW23-16	MW23-17
Date Sampled:			1-Aug-23	1-Aug-23	2-Aug-23	2-Aug-23	1-Aug-23	1-Aug-23
Matrix:			water	water	water	water	water	water
Analytes	Units	RL						
Toluene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,3-Dichloropropylene (cis)	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2-Trichloroethane	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethylene	µg/L	0.5	< 0.5	< 0.5	8.9	19	< 0.5	< 0.5
Dibromochloromethane	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dibromoethane	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	µg/L	0.5	33	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
m,p-Xylenes	µg/L	0.5	37	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
o-Xylene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Styrene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromoform	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,1,2-Tetrachloroethane	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2,2-Tetrachloroethane	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,3-Dichlorobenzene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,4-Dichlorobenzene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichlorobenzene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichloroethane-d4	%		100	104	103	104	104	104
Toluene-d8	%		97	100	99	99	99	100
4-Bromofluorobenzene	%		98	100	101	101	101	100

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Attention: Vladimir Trajkovic
Project #: PE23251
Location: PEI Government Garage

Volatile Organic Compounds in Water

RPC Sample ID:			493175-26	493175-27	493175-28	493175-28 Dup	493175-29	493175-30
Client Sample ID:			MW23-18	MW23-19	MW23-20	MW23-20	MW23-21	MW23-22
Date Sampled:			1-Aug-23	1-Aug-23	1-Aug-23	1-Aug-23	1-Aug-23	1-Aug-23
Matrix:			water	water	water	water	water	water
Analytes	Units	RL						
Chloromethane	µg/L	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Vinyl Chloride	µg/L	0.5	< 0.5	< 0.5	1.1	1.2	< 0.5	< 0.5
Bromomethane	µg/L	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	µg/L	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Trichlorofluoromethane	µg/L	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1-Dichloroethylene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Methylene Chloride	µg/L	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,2-Dichloroethylene (trans)	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1-Dichloroethane	µg/L	0.5	< 0.5	< 0.5	1.1	1.1	< 0.5	< 0.5
1,2-Dichloroethylene (cis)	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.8
Bromochloromethane	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chloroform	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,1-Trichloroethane	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Benzene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichloroethane	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethylene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.7
1,2-Dichloropropane	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromodichloromethane	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,3-Dichloropropylene (trans)	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5

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Attention: Vladimir Trajkovic
Project #: PE23251
Location: PEI Government Garage

Volatile Organic Compounds in Water

RPC Sample ID:			493175-26	493175-27	493175-28	493175-28 Dup	493175-29	493175-30
Client Sample ID:			MW23-18	MW23-19	MW23-20	MW23-20	MW23-21	MW23-22
Date Sampled:			1-Aug-23	1-Aug-23	1-Aug-23	1-Aug-23	1-Aug-23	1-Aug-23
Matrix:			water	water	water	water	water	water
Analytes	Units	RL						
Toluene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,3-Dichloropropylene (cis)	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2-Trichloroethane	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethylene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.3	3.1
Dibromochloromethane	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dibromoethane	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chlorobenzene	µg/L	0.5	< 0.5	2.4	< 0.5	< 0.5	< 0.5	< 0.5
Ethylbenzene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
m,p-Xylenes	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
o-Xylene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Styrene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bromoform	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,1,2-Tetrachloroethane	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2,2-Tetrachloroethane	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,3-Dichlorobenzene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,4-Dichlorobenzene	µg/L	0.5	< 0.5	2.4	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichlorobenzene	µg/L	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-Dichloroethane-d4	%		103	103	103	103	102	104
Toluene-d8	%		99	99	100	99	100	99
4-Bromofluorobenzene	%		101	98	101	98	100	100

Report ID: 493175-OAS
Report Date: 11-Aug-23
Date Received: 03-Aug-23

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Method Summary

OAS-HC04: The Determination of Petroleum Hydrocarbons (Atlantic MUST) in Water(VPH)
OAS-HC04: Determination of Petroleum Hydrocarbons (Atlantic MUST) in Water (EPH)
OAS-HC07:Determination of Polynuclear Aromatic Hydrocarbons in Water
OAS-SV04: Determination of Polychlorinated Biphenyls in Water.
OAS-HC02: Determination of Volatile Organic Compounds in Water.

Resemblance Legend

Resemblance Code	Resemblance
ARO1242/54	Mix of Aroclors 1242,1254.
ARO1242/60	Mix of Aroclors 1242,1260.
ARO1254/60	Mix of Aroclors 1254, 1260.
ARO.1016	Aroclor 1016
ARO.1242	Aroclor 1242
ARO.1248	Aroclor 1248.
ARO.1254	Aroclor 1254
ARO.1260	Aroclor 1260
COMMENT	See General Report Comments
FO	Fuel Oil Fraction
FO.LO	Fuel Oil and Lube Oil Fraction
G	Gasoline Fraction
LO	Lube Oil Fraction
MIXTURE	Mix of Aroclors 1242, 1254 and 1260.

Resemblance Code	Resemblance
ND	Not Detected
NR	No Resemblance (not-petrogenic in origin)
NRLR	No Resemblance in the lube oil range (>C21-C32).
OP	One Product (unidentified)
PAH	Possible PAHs Detected
PG	Possible Gasoline Fraction
PLO	Possible Lube Oil Fraction
PWFO	Possible Weathered Fuel Oil Fraction
PWG	Possible Weathered Gasoline Fraction
TO	Transformer Oil
UP	Unknown Peaks
WFO	Weathered Fuel Oil Fraction
WG	Weathered Gasoline Fraction

General Report Comments

Sample 493175-27: Total PCB Surrogate (DCB) recovery was below acceptance limit due to sample matrix.
Sample 493175-26 - EPH values reported for sample and duplicate are outside acceptance limits, likely due to sample inhomogeneity.
Elevated PAH RL's due to sample matrix interference and/or limited sample volume available for extraction.
Sample 493175-15 and -23 - VPH C6-C10 result consists mainly of the chlorinated VOC Tetrachloroethylene.
Return to Baseline: Samples are considered to have returned to baseline if the area from C32-C36 is less than 10% of the area from C10-C32.

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Project #: PE23251
Location: PEI Government Garage
QA/QC Report

RPC Sample ID:			BLANKD7270	BLANKD7272	BLANKD7283	BLANKD7284	BLANKD7285	SPIKED7270
Type:			VPH	VPH	EPH	EPH	EPH	VPH
Matrix:			water	water	water	water	water	water
Analytes	Units	RL						% Recovery
Benzene	mg/L	0.001	< 0.001	< 0.001	-	-	-	112%
Toluene	mg/L	0.001	< 0.001	< 0.001	-	-	-	98%
Ethylbenzene	mg/L	0.001	< 0.001	< 0.001	-	-	-	89%
Xylenes	mg/L	0.001	< 0.001	< 0.001	-	-	-	90%
VPH C6-C10 (Less BTEX)	mg/L	0.01	< 0.01	< 0.01	-	-	-	95%
EPH >C10 - C16	mg/L	0.05	-	-	< 0.05	< 0.05	< 0.05	-
EPH >C16 - C21	mg/L	0.05	-	-	< 0.05	< 0.05	< 0.05	-
EPH >C21-C32	mg/L	0.1	-	-	< 0.1	< 0.1	< 0.1	-
EPH >C10 - C32	mg/L		-	-	-	-	-	-

RL = Reporting Limit

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Project #: PE23251
Location: PEI Government Garage
QA/QC Report

RPC Sample ID:			SPIKED7272	SPIKED7283	SPIKED7284	SPIKED7285
Type:			VPH	EPH	EPH	EPH
Matrix:			water	water	water	water
Analytes	Units	RL	% Recovery	% Recovery	% Recovery	% Recovery
Benzene	mg/L	0.001	114%	-	-	-
Toluene	mg/L	0.001	99%	-	-	-
Ethylbenzene	mg/L	0.001	87%	-	-	-
Xylenes	mg/L	0.001	88%	-	-	-
VPH C6-C10 (Less BTEX)	mg/L	0.01	92%	-	-	-
EPH >C10 - C16	mg/L	0.05	-	-	-	-
EPH >C16 - C21	mg/L	0.05	-	-	-	-
EPH >C21-C32	mg/L	0.1	-	-	-	-
EPH >C10 - C32	mg/L		-	135%	134%	133%

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Project #: PE23251
Location: PEI Government Garage
QA/QC Report

RPC Sample ID:			BLANKD7331	SPIKED7331
Matrix:			water	water
Analytes	Units	RL		% Recovery
Naphthalene	µg/L	0.05	< 0.05	87%
Acenaphthylene	µg/L	0.01	< 0.01	88%
Acenaphthene	µg/L	0.01	< 0.01	84%
Fluorene	µg/L	0.01	< 0.01	80%
Phenanthrene	µg/L	0.01	< 0.01	84%
Anthracene	µg/L	0.01	< 0.01	82%
Fluoranthene	µg/L	0.01	< 0.01	82%
Pyrene	µg/L	0.01	< 0.01	83%
Benz(a)anthracene	µg/L	0.01	< 0.01	91%
Chrysene/Triphenylene	µg/L	0.01	< 0.01	95%
Benzo(b+j)fluoranthene	µg/L	0.01	< 0.01	88%
Benzo(k)fluoranthene	µg/L	0.01	< 0.01	90%
Benzo(e)pyrene	µg/L	0.01	< 0.01	105%
Benzo(a)pyrene	µg/L	0.01	< 0.01	105%
Indeno(1,2,3-c,d)pyrene	µg/L	0.01	< 0.01	87%
Benzo(g,h,i)perylene	µg/L	0.01	< 0.01	87%
Dibenz(a,h)anthracene	µg/L	0.01	< 0.01	74%

RL = Reporting Limit

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Project #: PE23251

Location: PEI Government Garage

QA/QC Report

RPC Sample ID:			BLANKD7300	SPIKED7300
Matrix:			water	water
Analytes	Units	RL		% Recovery
Total PCB	µg/L	0.1	< 0.1	93%

RL = Reporting Limit

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Project #: PE23251
Location: PEI Government Garage
QA/QC Report

RPC Sample ID:			BLANKD7304	BLANKD7306	SPIKED7304	SPIKED7306
Matrix:			water	water	water	water
Analytes	Units	RL			% Recovery	% Recovery
Chloromethane	µg/L	5.0	< 5.0	< 5.0	105%	112%
Vinyl Chloride	µg/L	0.5	< 0.5	< 0.5	100%	110%
Bromomethane	µg/L	5.0	< 5.0	< 5.0	100%	110%
Chloroethane	µg/L	5.0	< 5.0	< 5.0	90%	99%
Trichlorofluoromethane	µg/L	5.0	< 5.0	< 5.0	89%	96%
1,1-Dichloroethylene	µg/L	0.5	< 0.5	< 0.5	100%	103%
Methylene Chloride	µg/L	5.0	< 5.0	< 5.0	98%	104%
1,2-Dichloroethylene (trans)	µg/L	0.5	< 0.5	< 0.5	95%	102%
1,1-Dichloroethane	µg/L	0.5	< 0.5	< 0.5	103%	112%
1,2-Dichloroethylene (cis)	µg/L	0.5	< 0.5	< 0.5	97%	103%
Bromochloromethane	µg/L	0.5	< 0.5	< 0.5	100%	108%
Chloroform	µg/L	0.5	< 0.5	< 0.5	103%	109%
1,1,1-Trichloroethane	µg/L	0.5	< 0.5	< 0.5	99%	106%
Carbon Tetrachloride	µg/L	0.5	< 0.5	< 0.5	97%	106%
Benzene	µg/L	0.5	< 0.5	< 0.5	104%	111%
1,2-Dichloroethane	µg/L	0.5	< 0.5	< 0.5	104%	112%
Trichloroethylene	µg/L	0.5	< 0.5	< 0.5	97%	106%
1,2-Dichloropropane	µg/L	0.5	< 0.5	< 0.5	99%	107%
Bromodichloromethane	µg/L	0.5	< 0.5	< 0.5	96%	103%
1,3-Dichloropropylene (trans)	µg/L	0.5	< 0.5	< 0.5	109%	110%

RL = Reporting Limit

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Project #: PE23251
Location: PEI Government Garage
QA/QC Report

RPC Sample ID:			BLANKD7304	BLANKD7306	SPIKED7304	SPIKED7306
Matrix:			water	water	water	water
Analytes	Units	RL			% Recovery	% Recovery
Toluene	µg/L	0.5	< 0.5	< 0.5	108%	113%
1,3-Dichloropropylene (cis)	µg/L	0.5	< 0.5	< 0.5	99%	100%
1,1,2-Trichloroethane	µg/L	0.5	< 0.5	< 0.5	105%	108%
Tetrachloroethylene	µg/L	0.5	< 0.5	< 0.5	103%	106%
Dibromochloromethane	µg/L	0.5	< 0.5	< 0.5	95%	101%
1,2-Dibromoethane	µg/L	0.5	< 0.5	< 0.5	99%	104%
Chlorobenzene	µg/L	0.5	< 0.5	< 0.5	105%	110%
Ethylbenzene	µg/L	0.5	< 0.5	< 0.5	101%	105%
m,p-Xylenes	µg/L	0.5	< 0.5	< 0.5	101%	106%
o-Xylene	µg/L	0.5	< 0.5	< 0.5	101%	105%
Styrene	µg/L	0.5	< 0.5	< 0.5	97%	101%
Bromoform	µg/L	0.5	< 0.5	< 0.5	93%	97%
1,1,1,2-Tetrachloroethane	µg/L	0.5	< 0.5	< 0.5	108%	111%
1,1,2,2-Tetrachloroethane	µg/L	0.5	< 0.5	< 0.5	111%	111%
1,3-Dichlorobenzene	µg/L	0.5	< 0.5	< 0.5	106%	110%
1,4-Dichlorobenzene	µg/L	0.5	< 0.5	< 0.5	103%	108%
1,2-Dichlorobenzene	µg/L	0.5	< 0.5	< 0.5	102%	107%

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Project #: PE23251

Summary of Date Analyzed

	VPH		EPH		PAH	
RPC Sample ID	**Extracted**	**Analyzed**	**Extracted**	**Analyzed**	**Extracted**	**Analyzed**
493175-01	4-Aug-23	4-Aug-23	4-Aug-23	6-Aug-23	8-Aug-23	10-Aug-23
493175-02	4-Aug-23	4-Aug-23	4-Aug-23	6-Aug-23	8-Aug-23	10-Aug-23
493175-03	4-Aug-23	4-Aug-23	4-Aug-23	6-Aug-23	8-Aug-23	10-Aug-23
493175-04	4-Aug-23	4-Aug-23	4-Aug-23	6-Aug-23	-	-
493175-05	4-Aug-23	4-Aug-23	4-Aug-23	6-Aug-23	-	-
493175-06	4-Aug-23	4-Aug-23	4-Aug-23	6-Aug-23	-	-
493175-07	4-Aug-23	4-Aug-23	4-Aug-23	6-Aug-23	-	-
493175-08	4-Aug-23	4-Aug-23	4-Aug-23	6-Aug-23	-	-
493175-08 Dup	9-Aug-23	9-Aug-23	4-Aug-23	6-Aug-23	-	-
493175-09	4-Aug-23	4-Aug-23	4-Aug-23	6-Aug-23	-	-
493175-10	4-Aug-23	4-Aug-23	4-Aug-23	6-Aug-23	-	-
493175-11	4-Aug-23	4-Aug-23	4-Aug-23	7-Aug-23	-	-
493175-12	4-Aug-23	4-Aug-23	4-Aug-23	7-Aug-23	-	-
493175-13	4-Aug-23	4-Aug-23	4-Aug-23	7-Aug-23	-	-
493175-14	4-Aug-23	4-Aug-23	4-Aug-23	7-Aug-23	-	-
493175-15	4-Aug-23	4-Aug-23	4-Aug-23	7-Aug-23	-	-
493175-16	4-Aug-23	4-Aug-23	4-Aug-23	7-Aug-23	-	-
493175-17	4-Aug-23	4-Aug-23	4-Aug-23	7-Aug-23	-	-
493175-18	4-Aug-23	4-Aug-23	4-Aug-23	7-Aug-23	-	-
493175-19	5-Aug-23	5-Aug-23	4-Aug-23	7-Aug-23	-	-

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Project #: PE23251

Summary of Date Analyzed

	VPH		EPH		PAH	
RPC Sample ID	**Extracted**	**Analyzed**	**Extracted**	**Analyzed**	**Extracted**	**Analyzed**
493175-20	5-Aug-23	5-Aug-23	4-Aug-23	7-Aug-23	8-Aug-23	10-Aug-23
493175-21	5-Aug-23	5-Aug-23	4-Aug-23	7-Aug-23	-	-
493175-22	5-Aug-23	5-Aug-23	4-Aug-23	7-Aug-23	8-Aug-23	10-Aug-23
493175-23	5-Aug-23	5-Aug-23	4-Aug-23	7-Aug-23	8-Aug-23	10-Aug-23
493175-24	5-Aug-23	5-Aug-23	4-Aug-23	7-Aug-23	-	-
493175-25	5-Aug-23	5-Aug-23	4-Aug-23	7-Aug-23	-	-
493175-26	5-Aug-23	5-Aug-23	4-Aug-23	7-Aug-23	8-Aug-23	10-Aug-23
493175-26 Dup	9-Aug-23	9-Aug-23	4-Aug-23	7-Aug-23	-	-
493175-27	5-Aug-23	5-Aug-23	4-Aug-23	7-Aug-23	8-Aug-23	11-Aug-23
493175-28	5-Aug-23	5-Aug-23	4-Aug-23	7-Aug-23	8-Aug-23	10-Aug-23
493175-28 Dup	-	-	-	-	-	-
493175-29	5-Aug-23	5-Aug-23	4-Aug-23	7-Aug-23	8-Aug-23	10-Aug-23
493175-30	5-Aug-23	5-Aug-23	4-Aug-23	7-Aug-23	8-Aug-23	10-Aug-23

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Project #: PE23251

Summary of Date Analyzed

	PCB		VOC	
RPC Sample ID	**Extracted**	**Analyzed**	**Extracted**	**Analyzed**
493175-01	-	-	-	-
493175-02	-	-	-	-
493175-03	-	-	-	-
493175-04	-	-	8-Aug-23	8-Aug-23
493175-05	-	-	8-Aug-23	8-Aug-23
493175-06	-	-	8-Aug-23	8-Aug-23
493175-07	-	-	8-Aug-23	8-Aug-23
493175-08	-	-	8-Aug-23	8-Aug-23
493175-08 Dup	-	-	-	-
493175-09	-	-	9-Aug-23	9-Aug-23
493175-10	-	-	9-Aug-23	9-Aug-23
493175-11	-	-	-	-
493175-12	-	-	-	-
493175-13	-	-	-	-
493175-14	-	-	-	-
493175-15	-	-	-	-
493175-16	-	-	-	-
493175-17	-	-	-	-
493175-18	-	-	-	-
493175-19	-	-	-	-

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Project #: PE23251

Summary of Date Analyzed

	PCB		VOC	
RPC Sample ID	**Extracted**	**Analyzed**	**Extracted**	**Analyzed**
493175-20	-	-	-	-
493175-21	-	-	8-Aug-23	8-Aug-23
493175-22	-	-	8-Aug-23	8-Aug-23
493175-23	-	-	8-Aug-23	8-Aug-23
493175-24	-	-	8-Aug-23	8-Aug-23
493175-25	-	-	8-Aug-23	8-Aug-23
493175-26	8-Aug-23	9-Aug-23	8-Aug-23	8-Aug-23
493175-26 Dup	-	-	-	-
493175-27	8-Aug-23	9-Aug-23	9-Aug-23	9-Aug-23
493175-28	8-Aug-23	9-Aug-23	8-Aug-23	8-Aug-23
493175-28 Dup	-	-	9-Aug-23	9-Aug-23
493175-29	-	-	8-Aug-23	8-Aug-23
493175-30	-	-	8-Aug-23	8-Aug-23

Report ID: 493175-IAS
Report Date: 11-Aug-23
Date Received: 03-Aug-23

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Attention: Vladimir Trajkovic
Project #: PE23251
Location: PEI Government Garage

Analysis of Metals in Water

RPC Sample ID:			493175-01	493175-02	493175-20
Client Sample ID:			MW23-03	MW23-04	MW23-02
Date Sampled:			2-Aug-23	2-Aug-23	2-Aug-23
Analytes	**Units**	**RL**			
Aluminum	µg/L	1	21	9	7
Antimony	µg/L	0.1	0.2	< 0.5	1.1
Arsenic	µg/L	1	< 1	< 5	< 1
Barium	µg/L	1	115	118	164
Beryllium	µg/L	0.1	< 0.1	< 0.5	< 0.1
Bismuth	µg/L	1	< 1	< 5	< 1
Boron	µg/L	1	299	48	176
Cadmium	µg/L	0.01	< 0.01	< 0.05	0.76
Calcium	µg/L	50	109000	84300	72400
Chromium	µg/L	1	< 1	< 5	< 1
Cobalt	µg/L	0.1	0.7	< 0.5	0.4
Copper	µg/L	1	< 1	< 5	8
Iron	µg/L	20	550	< 100	< 20
Lead	µg/L	0.1	< 0.1	< 0.5	< 0.1
Lithium	µg/L	0.1	9.4	2.6	10.6
Magnesium	µg/L	10	45100	35400	25000
Manganese	µg/L	1	8420	1180	225
Molybdenum	µg/L	0.1	1.0	2.3	2.4
Nickel	µg/L	1	1	< 5	37
Potassium	µg/L	20	17700	7800	11500
Rubidium	µg/L	0.1	16.2	5.9	12.6
Selenium	µg/L	1	< 1	< 5	< 1
Silver	µg/L	0.1	< 0.1	< 0.5	< 0.1
Sodium	µg/L	50	117000	653000	43000
Strontium	µg/L	1	453	268	264
Tellurium	µg/L	0.1	< 0.1	< 0.5	< 0.1
Thallium	µg/L	0.1	< 0.1	< 0.5	0.2
Tin	µg/L	0.1	< 0.1	< 0.5	< 0.1
Uranium	µg/L	0.1	0.7	1.0	0.1
Vanadium	µg/L	1	< 1	< 5	1
Zinc	µg/L	1	20	7	642

This report relates only to the sample(s) and information provided to the laboratory.

RL = Reporting Limit

Peter Crowhurst, B.Sc., C.Chem.
Director
Inorganic Analytical Chemistry

Brannen Burhoe
Supervisor
Inorganic Analytical Services

Report ID: 493175-IAS
Report Date: 11-Aug-23
Date Received: 03-Aug-23

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Attention: Vladimir Trajkovic
Project #: PE23251
Location: PEI Government Garage

Analysis of Metals in Water

RPC Sample ID:			493175-26	493175-27	493175-28
Client Sample ID:			MW23-18	MW23-19	MW23-20
Date Sampled:			1-Aug-23	1-Aug-23	1-Aug-23
Analytes	**Units**	**RL**			
Aluminum	µg/L	1	< 5	5	7
Antimony	µg/L	0.1	< 0.5	0.3	< 0.5
Arsenic	µg/L	1	< 5	< 2	< 5
Barium	µg/L	1	397	109	139
Beryllium	µg/L	0.1	< 0.5	< 0.2	< 0.5
Bismuth	µg/L	1	< 5	< 2	< 5
Boron	µg/L	1	78	274	106
Cadmium	µg/L	0.01	0.08	< 0.02	< 0.05
Calcium	µg/L	50	241000	98600	101000
Chromium	µg/L	1	< 5	< 2	< 5
Cobalt	µg/L	0.1	< 0.5	0.8	< 0.5
Copper	µg/L	1	< 5	< 2	< 5
Iron	µg/L	20	< 100	150	< 100
Lead	µg/L	0.1	< 0.5	< 0.2	< 0.5
Lithium	µg/L	0.1	4.3	2.9	3.6
Magnesium	µg/L	10	140000	6920	14400
Manganese	µg/L	1	361	1170	5700
Molybdenum	µg/L	0.1	0.5	1.1	0.7
Nickel	µg/L	1	6	< 2	< 5
Potassium	µg/L	20	17400	13600	10800
Rubidium	µg/L	0.1	4.2	20.7	12.3
Selenium	µg/L	1	< 5	< 2	< 5
Silver	µg/L	0.1	< 0.5	< 0.2	< 0.5
Sodium	µg/L	50	873000	379000	796000
Strontium	µg/L	1	740	343	293
Tellurium	µg/L	0.1	< 0.5	< 0.2	< 0.5
Thallium	µg/L	0.1	< 0.5	< 0.2	< 0.5
Tin	µg/L	0.1	< 0.5	< 0.2	< 0.5
Uranium	µg/L	0.1	< 0.5	< 0.2	< 0.5
Vanadium	µg/L	1	< 5	< 2	< 5
Zinc	µg/L	1	5	3	< 5

Report ID: 493175-IAS
Report Date: 11-Aug-23
Date Received: 03-Aug-23

CERTIFICATE OF ANALYSIS
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Methods

Analyte	RPC SOP #	Method Reference	Method Principle
Trace Metals	IAS-M01/IAS-M29	EPA 200.8/EPA 200.7	ICP-MS/ICP-ES