REPORT

Phase Two Environmental Site Assessment

3456 Portage Road, Niagara Falls, Ontario

Submitted to:

River Realty Development (1976) Inc.

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Niagara Falls, Ontario
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Submitted by:

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Record of Issue

Company	Client Contact	Version	Date Issued	Comment
River Realty Development (1976) Inc.	J. Mestek	RevA	September 29, 2025	

Table of Contents

TABLES

FIGURES

APPENDICES

1.0 EXECUTIVE SUMMARY

WSP Canada Inc (WSP) was retained by River Realty Development (1976) Inc. (the Client) to conduct a Phase Two Environmental Site Assessment (Phase Two ESA) of the property located at 3456 Portage Road, Niagara Falls, Ontario (the Phase Two Property). The location of the Phase Two Property is provided in **Figure 1**. The legal description of the Phase Two Property is: Parts of Lots 56 and 60, Part 1, Plan 59R-6200 and Part 1, Plan 59R-11110, Geographic Township of Stamford, City of Niagara Falls, Regional Municipality of Niagara.

WSP previously completed a Phase One Environmental Site Assessment (Phase One ESA) for the Site, the results of which were documented in the report titled "*Phase One Environmental Site Assessment, 3456 Portage Road, Niagara Falls, Ontario*", dated May 27, 2025 (file number CA0053504.3959). Based on the findings of the Phase One ESA, WSP completed this Phase Two ESA investigation.

The analytical results from the sampling and analysis program indicates that the reported concentrations of lead and various polycyclic aromatic hydrocarbons (PAHs) parameters in fill material at the Phase Two Property do not meet the applicable Ministry of Environment, Conservation and Parks (MECP) Table 3 site condition standards (residential/parkland/institutional property use, coarse textured soil)[1]. The reported concentrations of all other parameters tested in soil and groundwater were below the Table 3 SCS.

A subsequent soil remediation program (SRP) was completed and all verification soil samples met the applicable Table 3 SCS.

2.0 INTRODUCTION

2.1 Site Description

WSP was retained by Client to conduct a Phase Two ESA of the following property:

Municipal Address	3456 Portage Road, Niagara Falls, ON
Property Identification Number	64277-0169 (LT)
Legal Description	Parts of Lots 56 and 60, Part 1, Plan 59R-6200 and Part 1, Plan 59R-11110, Geographic Township of Stamford, City of Niagara Falls, Regional Municipality of Niagara
Size of the Phase Two Property	0.12 hectares

Note: legal description obtained from the Plan of Survey with Topographic Details Part of Lots 56 and 60 dated May 23, 2024.

The location of the Phase Two Property is provided in **Figure 1**. A plan of survey for the Phase Two Property is provided in **Appendix A**. The boundaries of the Phase Two Property are provided in **Figure 2**.

2.2 Property Ownership

Authorization to proceed with this investigation was received from John Mestek of the Client on May 7, 2025. The contact information for the Phase Two Property owner is as follows:

[1] *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*, Ministry of the Environment, April 15, 2011 (PIBS# 7382e01)

Site Owner / Client	Address	Contact Information
Client and Owner: River Realty Development (1976) Inc.	John Mestek 6265 Morrison Street Niagara Falls, ON L2E 7H1	Email: jmestek.river.realty@bellnet.ca

2.3 Current and Proposed Future Uses

The Phase Two Property is currently developed with one two-storey mixed commercial and residential building, reportedly constructed prior to 1932. The proposed future use of the Phase Two Property is residential.

2.4 Applicable Site Condition Standard

The analytical results were compared to the Table 3 generic site condition standards (residential/parkland/ institutional property use, coarse soil texture) presented in the MECP document "*Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*", dated April 15, 2011 (the Table 3 SCS). The applicable SCS were selected based on the following rationale:

- The Phase Two Property and all other properties located, in whole or in part, within 250 metres (m) of the Phase Two Property are supplied by the City of Niagara Falls (the City) and Regional Municipality of Niagara (RMON) municipal drinking water system. No wells were identified that are used or intended for use as a source of potable water.
- The Phase Two Property is not located in an area designated in a municipal official plan as a well-head protection area or other designation identified by the municipality for the protection of ground water.
- More than two thirds of the soil materials are considered to be coarse-textured (Section 6.4).
- The closest permanent water body is the Niagara River, located 2 kilometres (km) east/northeast of the Phase Two Property.
- No features have been identified at the Phase Two Property that would meet the conditions of an environmentally sensitive site, as described in Section 41.
- The pH of surface soil is 5≤pH≤9 and the pH of sub-surface soil meets the requirement that 5≤pH≤11 (Section 6.4).
- The intended use of the Phase Two Property is residential.
- The overburden thickness is greater than 2 m over more than one-third of the Phase Two Property. The reported depth to water is greater than 3 m over the entire Phase Two Property.

3.0 BACKGROUND INFORMATION

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

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

- Developing an understanding of the geological and hydrogeological conditions at the Phase Two Property.

- Conducting field sampling for all contaminants of potential concern (COPCs) associated with each area of potential environmental concern (APEC).

3.1 Physical Setting

The nearest surface water body is the Niagara River, located 2 km east/northeast of the Phase Two Property. There are no areas of natural significance within the Phase One Study area. Land uses surrounding the Phase Two Property were institutional, commercial, parkland, and residential as shown in **Figure 2**.

The quaternary geology in the area of the Phase Two Property consists of fine textured glaciolacustrine deposits of silt and clay, and minor sand and gravel. The bedrock geology in the area of the Phase Two Property consists of sandstone, shale, dolostone, and siltstone.

The topography of the Phase Two Property is generally flat. The topography of the Phase Two Property compared to the surrounding properties is generally flat on the western portion of the property, however the eastern portion of the property is at a higher elevation and slopes down towards the surrounding properties. A catch basin is present on the eastern portion of the Phase Two Property.

3.2 Past Investigations

3.2.1 Phase One ESA

WSP conducted a Phase One ESA entitled, "*Phase One Environmental Site Assessment, 3456 Portage Road, Niagara Falls, Ontario*", dated May 27, 2025, to assess the likelihood of soil and/or groundwater contamination resulting from historical or present activities at the Phase One Property and surrounding area. This included a review of available historical information on the Phase One Property and surrounding area, interviews with persons familiar with the Phase One Property and a site reconnaissance. The APECs identified in the Phase One ESA are summarized in the following table:

Area of Potential Environmental Concern[1]	Location of Area of Potential Environmental Concern on Phase One Property	Potentially Contaminating Activity[2]	Location of PCA (on-Site or off-Site)	Contaminants of Potential Concern[3]	Media Potentially Impacted (Groundwater, soil, and/or Sediment)
APEC 1 - Possible fill material of unknown quality was used for grading purposes on the Phase One Property. The extent of the fill materials is unknown.	The Phase One Property	#30. Importation of Fill Material of Unknown Quality	On-site	Metals, As, Se, Sb, PHCs, BTEX, PAHs, pH, EC, SAR	Soil
APEC 2 - Salt and ice-melt was applied to the walkways, entrances, and parking lot for safety purposes during the winter.	The parking lot areas, walkways, and entrances	Other – Salting and application of ice-melt on the walkways, entrances, and parking lot for	On-site	EC, SAR Exempt by O.Reg. 153/04 Section 49.1	Soil Exempt by O.Reg. 153/04 Section 49.1

Area of Potential Environmental Concern[1]	Location of Area of Potential Environmental Concern on Phase One Property	Potentially Contaminating Activity[2]	Location of PCA (on-Site or off-Site)	Contaminants of Potential Concern[3]	Media Potentially Impacted (Groundwater, soil, and/or Sediment)
		safety purposes in the winter. Exempt by O.Reg. 153/04 Section 49.1			
APEC 3 - A pad-mounted transformer was present at the time of the Site Visit near the southwest corner of the Phase One Property.	Southwest corner of the Phase One Property	#55. Transformer Manufacturing, Processing and Use	Off-site	PCBs, PHCs, BTEX	Soil and Groundwater
APEC 4 - Two steel gasoline tanks with a capacity of 22,700 and 45,400 L were listed for the property immediately south of the Phase One Property. The property was historically occupied by an ESSO gas station and operated from the 1950s to the 1990s.	Southern portion of the Phase One Property	#28. Gasoline and Associated Product Storage in Fixed Tanks	Off-site	PHCs, VOCs, metals, As, Se, Sb	Groundwater
APEC 5 - Two dry-cleaning businesses were listed for the commercial plaza across Portage Road, west of the Phase One Property. Royal Professional Dry Cleaner/Colonial Cleaners operated at 3519/3523 Portage Road (110 m southwest) from 1970 to 2017. Imperial Cleaners has operated at 3489/3479 Portage Road (80 m west of the Phase One Property) since 1965.	Southwestern portion of the Phase One Property	#37. Operation of Dry Cleaning Equipment (where chemicals are used)	Off-site	VOC	Groundwater

Notes

1 Area of potential environmental concern means the area on, in or under a phase one property where one or more contaminants are potentially present, as determined through the phase one environmental site assessment, including through (a) identification of past or present uses on, in or under the phase one property, and (b) identification of potentially contaminating activity.
2 Potentially contaminating activity means a use or activity set out in Column A of Table 2 of Schedule D that is occurring or has occurred in a phase one study area.
3 Contaminants of potential concern specified using the method groups as identified in the "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act and Excess Soil Quality", March 9, 2004, amended as of February 19, 2021.

This report was prepared by a Qualified Person (QP) and will be relied upon for the Phase Two investigation.

4.0 SCOPE OF THE INVESTIGATION

4.1 Overview of Site Investigation

The Phase Two ESA investigation activities were completed between May 21, 2025, and August 21, 2025, and included the following tasks:

- **Health and Safety Plan**: Preparation of a Health and Safety Plan for internal and subcontractor use prior to initiating any field work at the Phase Two Property.
- **Utility Clearances**: Coordination of utility clearances with local utility companies along with retaining the services of a private locator to assess for possible services in the areas of the proposed test locations.
- **Borehole Advancement and Monitoring Well Installation**: The borehole drilling and monitoring well installation program included drilling of three boreholes completed as groundwater monitoring wells, which were used for soil and groundwater sampling at the Phase Two Property. Eight additional boreholes were drilled for the purposes of soil sampling only. The rationale for the selected location of the boreholes is provided in the Sampling and Analysis Plan provided in **Appendix B**. The locations of the boreholes and monitoring wells are provided in **Figure 5**. The monitoring well construction details are presented in **Table 1**.
- **Testpit Excavation**: The testpitting program included the excavation of 26 testpits and associated soil sampling. The rationale for the testpit locations is provided in the Sampling and Analysis Plan provided in **Appendix B**. The locations of the boreholes and monitoring wells are provided in **Figure 5**.
- **Soil Sampling**: Soil samples were collected on May 22, 2025, from the boreholes, and on June 11 and July 3, 2025, from the testpits. Selected soil samples were submitted for analysis of the COPCs relevant to the applicable APEC (**Table 3**).
- **Remediation**: A soil remediation program (SRP) was conducted on August 21, 2025. Soil/fill was excavated and removed from the Phase Two Property in the approximate middle area of the Phase Two Property for remedial excavation purposes (i.e., to remediate the initial metals and PAHs exceedance found at BH11 and the delineated impacted area). The excavated soil/fill, totalling 242.42 cubic metres (m^3), was sent to Walkers Landfill in Thorold, Ontario for disposal. Four confirmatory soil samples were collected and analyzed for metals and PAHs from the walls and/or floor of the excavation to supplement the boundary testpit samples that had already been analyzed.
- **Groundwater Monitoring and Sampling**: Groundwater samples were collected on June 5, 2025. Groundwater samples were submitted for analysis of the COPCs relevant to the applicable APEC (**Table 4**).
- **Surveying**: An elevation survey for boreholes and monitoring wells was completed by WSP on June 5, 2025. Elevation surveys for the testpits were completed on June 11, 2025, and July 10, 2025.

- **Reporting**: WSP compiled and assessed the field and laboratory results from the above noted activities into this report.

The Phase Two investigation was carried out in general accordance with WSP's standard operating procedures, which conform to the requirements of Ontario Regulation 153/04 (O.Reg. 153/04). The data from the Phase Two ESA investigation completed by WSP were incorporated into a single Phase Two ESA report following the Phase Two ESA report format required by O.Reg. 153/04.

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

4.2 Media Investigated

The Phase Two ESA included sampling and analysis of soil and groundwater. No sediment was present and therefore sediment sampling was not required. Summaries of the sampling and analysis completed for soil and groundwater are provided in **Tables 3 and 4**. The sampling and analysis plan outlines the rationale for the field investigation activities and the associated methodologies used to meet the objectives of the Phase Two ESA.

4.3 Phase One Conceptual Site Model

The following key features (as required by O.Reg. 153/04) are presented in **Figures 1, 2, 3, and 4**:

- existing buildings and structures
- water bodies and areas of natural significance located in the Phase One Study Area
- drinking water wells on the Phase One Property
- roads (including names) within the Phase One Study Area
- uses of properties adjacent to the Phase One Property
- any areas where potentially contaminated activity has occurring and tanks in such areas
- areas of potential environmental concern

The following describes the Phase One Conceptual Site Model based on the information obtained and reviewed as part of this Phase One ESA:

- The Phase One Property consisted of a 0.12 hectares (ha) of commercial land with one building.
- The nearest water body is the Niagara River (2 km east/northeast). No areas of natural significance are present within the Phase One Property and Phase One Study Area.
- The property is currently not serviced with potable water. However, historically, the site was serviced via the municipal water supply originating from Portage Road.
- At the time of the Phase One ESA, the Phase One Property was vacant. The Phase One Property has been historically occupied by residential and commercial businesses since at least 1932. There are no indications that the Phase One Property was used for an industrial use or any of the following commercial uses: vehicle garage, bulk liquid dispensing facility, or dry cleaning facility.

- At the time of the Phase One ESA, the neighbouring properties within the Phase One Study Area consisted of residential, community, and commercial uses. There are no indications that neighbouring properties in the Phase One Study Area were used for an industrial use. However, the property immediately south was historically occupied by an ESSO Service Station and two dry-cleaning businesses were identified on the commercial plaza across Portage Road.
- At the time of the Phase One ESA, a pad-mounted transformer was present near the southwest corner of the Phase One Property and seems to be on the road allowance.
- The following potentially contaminating activities were identified (**Figure 3**):

Location	PCA	Information Source	Rationale for Potential Contribution of the PCA to an APEC
Phase One Property	#30 Importation of Fill Material of Unknown Quality – Possible fill material of unknown quality was used for grading purposes on the Phase One Property. The extent of the fill materials is unknown.	Site observations	The PCA is on the Phase One Property and must be identified as an APEC. The fill materials are anticipated to affect the uppermost soil layers at the Phase One Property due to the nature of the contaminants of potential concern (COPCs).
	Other – Salting of the walkways and parking lot for safety purposes in the winter.	Site observations and Site Representative	The PCA is on the Phase One Property and must be identified as an APEC. However, the APEC is exempt from investigation as per O.Reg. 153/04 Section 49.1.
Phase One Study Area	#55. Transformer Manufacturing, Processing and Use – A pad-mounted transformer was present at the time of the Site Visit near the southwest corner of the Phase One Property.	Site Visit	Due to the proximity to the Phase One Property (i.e., adjacent), this PCA results in an APEC at the Phase One Property.
	#28. Gasoline and Associated Product Storage in Fixed Tanks – Two steel gasoline tanks with a capacity of 22,700 and 45,400 L were listed for the property immediately south of the Phase One Property. The property was historically occupied by an ESSO gas station and operated from the 1950s to the 1990s.	ERIS report, FIPs and city directories	Due to the nature of the activities, length of active time of the PCAs, associated contaminants, and the proximity to the Phase One Property (i.e., adjacent), this PCA results in an APEC at the Phase One Property.
	#37. Operation of Dry Cleaning Equipment (where chemicals are used) – Two dry-cleaning businesses were listed for the commercial plaza across Portage Road, west of the Phase One Property. Royal Professional Dry Cleaner/Colonial Cleaners operated at 3519/3523 Portage Road (110 m southwest) from 1970 to	ERIS report, Site Visit and city directories	Due to the nature of the activities, length of active time of the PCAs, associated contaminants, and the proximity to the Phase One Property (i.e., inferred upgradient), these PCAs result in an APEC at the Phase One Property.

Location	PCA	Information Source	Rationale for Potential Contribution of the PCA to an APEC
	2017. Imperial Cleaners has operated at 3489/3479 Portage Road (80 m west of the Phase One Property) since 1965.		

- The following APECs were identified (**Figure 4**):

Area of Potential Environmental Concern[1]	Location of Area of Potential Environmental Concern on Phase One Property	Potentially Contaminating Activity[2]	Location of PCA (on-Site or off-Site)	Contaminants of Potential Concern[3]	Media Potentially Impacted (Groundwater, soil, and/or Sediment)
APEC 1 - Possible fill material of unknown quality was used for grading purposes on the Phase One Property. The extent of the fill materials is unknown.	The Phase One Property	#30. Importation of Fill Material of Unknown Quality	On-site	Metals, As, Se, Sb, PHCs, BTEX, PAHs, pH, EC, SAR	Soil
APEC 2 - Salt and ice-melt was applied to the walkways, entrances, and parking lot for safety purposes during the winter.	The parking lot areas, walkways, and entrances	Other – Salting and application of ice-melt on the walkways, entrances, and parking lot for safety purposes in the winter. Exempt by O.Reg. 153/04 Section 49.1	On-site	EC, SAR Exempt by O.Reg. 153/04 Section 49.1	Soil Exempt by O.Reg. 153/04 Section 49.1
APEC 3 - A pad-mounted transformer was present at the time of the Site Visit near the southwest corner of the Phase One Property.	Southwest corner of the Phase One Property	#55. Transformer Manufacturing, Processing and Use	Off-site	PCBs, PHCs, BTEX	Soil and Groundwater
APEC 4 - Two steel gasoline tanks with a capacity of 22,700 and 45,400 L were listed for the property immediately south of the Phase One	Southern portion of the Phase One Property	#28. Gasoline and Associated Product Storage in Fixed Tanks	Off-site	PHCs, BTEX, metals, As, Se, Sb	Groundwater

Area of Potential Environmental Concern[1]	Location of Area of Potential Environmental Concern on Phase One Property	Potentially Contaminating Activity[2]	Location of PCA (on-Site or off-Site)	Contaminants of Potential Concern[3]	Media Potentially Impacted (Groundwater, soil, and/or Sediment)
Property. The property was historically occupied by an ESSO gas station and operated from the 1950s to the 1990s.					
APEC 5 - Two dry-cleaning businesses were listed for the commercial plaza across Portage Road, west of the Phase One Property. Royal Professional Dry Cleaner/Colonial Cleaners operated at 3519/3523 Portage Road (110 m southwest) from 1970 to 2017. Imperial Cleaners has operated at 3489/3479 Portage Road (80 m west of the Phase One Property) since 1965.	Southwestern portion of the Phase One Property	#37. Operation of Dry Cleaning Equipment (where chemicals are used)	Off-site	VOC	Groundwater

- A Plan of Survey was provided by the Client, and some utility lines were identified between the building and Portage Road.
- Soil at the Phase One Property consists primarily of fine textured glaciolacustrine deposits of silt and clay, and minor sand and gravel.
- Bedrock at the Phase One Property consists of sandstone, shale, dolostone, siltstone. Based on a review of the Niagara and Niagara-on-the-Lake bedrock map, the bedrock depth of the Phase One Property is estimated to be around 15-20 m below ground surface (mbgs).
- Local and Regional groundwater is anticipated to flow northeast toward the Niagara River (2 km east/northeast). Static water level ranged from 4.6 to 7.6 mbgs in wells reported within the Phase One Study Area.
- APEC 2 (application of de-icing salt in of the parking lot and walkways of the Phase One Property for safety purposes in the winter) is exempt from investigation as per Section 49.1 of O.Reg. 153/04.

- A standard freedom of information request was submitted to the MECP. A response was obtained from the MECP on May 26, 2025. According to the MECP, no records were located for the property.

4.4 Deviations from Sampling and Analysis Plan

A sampling and analysis plan is provided in **Appendix B**. The sampling and analysis plan outlines the rationale for the field investigation activities carried out at the Phase Two Property and the associated methodologies used to meet the objectives of this Phase Two ESA.

4.5 Impediments

No physical impediments to the Phase Two ESA investigation were encountered. Access to the Phase Two Property was not denied or restricted.

5.0 INVESTIGATION METHOD

5.1 General

The following sections describe the field investigation methodology employed during the Phase Two ESA. The field work was conducted between May 21, 2025, and August 21, 2025.

Prior to initiating the field work, WSP developed and implemented site-specific protocols to protect the health and safety of its employees and subcontractors through the preparation of a site-specific Health and Safety Plan. An assessment of potential health and safety hazards at the Phase Two Property and those associated with the proposed work was completed each day of the field program. A health and safety tailgate meeting was held with WSP's subcontractors each day prior to completion of the field work. The document was reviewed and signed on-site by field personnel prior to commencing work. Additionally, prior to any intrusive investigations, including drilling, WSP completed public and private utility clearances.

5.2 Drilling

On May 22, 2025, 11 boreholes (BH1 to BH11) were advanced to depths between 1.5 to 7.6 mbgs. Borehole locations are provided in **Figure 5**. A description of the quality assurance/quality control measures taken to minimize the potential for cross-contamination between sampling locations is provided in Section 5.12.

Boreholes were advanced by Direct Environmental Drilling Inc. using a track mounted Geoprobe 7822DT drill rig. During borehole drilling activities, overburden soil samples were collected using dual tube or Macro-Core® soil sampling equipment. Boreholes to be constructed as monitoring wells were completed using the dual tube sampling system.

Continuous soil samples were collected were collected at 1.5 m intervals using the following method:

- Dual-tube or Macro-Core® sampler: 5-foot (1.5 m) long, 1.85-inch (4.7 centimetre [cm]) diameter disposable polyvinyl chloride liner inside a 3.25-inch outer diameter direct push casing.

5.3 Testpitting

On June 11, 2025, 15 testpits (TP101 to TP115) were advanced to depths between 0.55 to 2.30 mbgs. Then, on July 3, 2025, 11 testpits (TP201 to TP211) were advanced to depths between 1.0 to 2.4 mbgs. Testpit locations are provided in **Figure 5**. The testpitting program was completed to delineate or confirm/deny the presence of exceedances of the applicable Table 3 SCS discovered during the borehole drilling program. A description of the

quality assurance/quality control measures taken to minimize the potential for cross-contamination between sampling locations is provided in Section 5.12.

Testpits were excavated by HS Cole Excavating and Contracting Ltd. using a JCB 3CXeco backhoe. During testpit excavation, continuous overburden soil samples were collected from the bucket of the backhoe, representing the targeted soil depth(s).

5.4 Soil: Sampling

Soil samples during the drilling program were collected from undisturbed locations and split in the field into two components. One component was placed into laboratory-prepared container and stored in a cooler for potential laboratory analysis. The second component was placed inside a plastic bag for field screening, consisting of the soil description, and noting the presence of any staining, odour and/or debris. A photoionization detector (RKI Eagle 2) calibrated to 100 parts per million (ppm) isobutylene and 15% lower explosive limit (LEL) of hexane was used to determine the total organic vapour (TOV) and combustible organic vapour (COV) concentrations in the headspace in the sealed plastic bag.

Volatile parameters were not detected above the applicable Table 3 SCS during the borehole drilling program. As a result, during the testpitting programs, the soil samples were not split into two components because the testpits were completed for delineation purposes of metals and/or polycyclic aromatic hydrocarbons (PAHs) impacts. Since samples were not being analyzed for volatile parameters, TOV and COV headspace concentration readings were not required. Field screening for soil description and noting the presence of any staining, odour, and/or debris was completed during sampling.

As per the sampling and analysis plan (**Appendix A**) at least one soil sample was submitted from each sampling location for one or more of the COPCs relevant to the applicable APEC. One soil sample representing “worst-case” conditions at each sampling location was selected for laboratory analysis based on the field headspace screening measurements, visual observations (e.g., staining, discoloration and/or free product, if any), olfactory observations (if any), and presence of any deleterious materials (if any). Soil samples were submitted to the analytical laboratory under chain of custody procedures. A summary of the soil samples submitted for analysis is provided in **Table 3**.

Geologic descriptions, visual and olfactory observations, and results of field headspace measurements are presented on the borehole and testpit logs (**Appendix C**).

5.5 Field Screening Measurements

Field measurements of sample headspace concentration were made using the following equipment:

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

Instruments were calibrated before use with daily calibration checks. The results of soil headspace screening measurements are provided in the borehole logs in **Appendix C**.

5.6 Groundwater: Monitoring Well Installation

Groundwater monitoring wells were installed by Direct using threaded 31.75 mm diameter, schedule 40, polyvinyl chloride well screens and riser pipe. The annular space was filled with silica filter sand to at least 0.3 m above the well screen. The monitoring well was sealed with bentonite from the top of the sand pack and completed with a flush mount protective well casing set in concrete. The riser pipes were sealed with a J-plug. A description of the quality assurance/quality control measures taken to minimize the potential for cross-contamination between sampling locations is provided in Section 5.12.

Following drilling, the monitoring wells were developed on May 28, 2025, by removing up to ten well volumes, or by removing one well volume if the well was considered a “low yield” monitoring well, using dedicated Waterra® pumps (tubing with foot valves). During monitoring well development, qualitative observations were made of water colour, clarity, and the presence or absence of any petroleum hydrocarbon sheen or odours.

5.7 Groundwater: Field Measurements for Water Quality Parameters

Groundwater indicator parameters including temperature, pH, and conductivity were measured prior to sampling to ensure adequate well development and purging. A YSI Pro Plus water quality meter was used to measure groundwater quality during monitoring well development, while a Horiba U-52 water quality meter was used to measure groundwater quality during groundwater sampling. The YSI was calibrated using factory supplied solutions for electrical conductivity (1413 micro Siemens per centimetre [µS/cm]) and pH (7.01 pH) parameters. The Horiba was calibrated using factory supplied solutions for electrical conductivity (4.49 milli Siemens per centimetre [mS/cm]) and pH (4.00 pH) parameters. Specifications for the YSI water quality meter are summarized in the following table:

Parameter	Measurement Range	Precision	Accuracy
pH	0.00 to 14.00 pH	0.01 pH	±0.2 pH
Electrical conductivity	0.00 to 200 mS/cm	0.01 mS/cm	± 0.5%
Temperature	-5 to 45 ºC	0.1 ºC	± 0.15 ºC

Specifications for the Horiba water quality meter are summarized in the following table:

Parameter	Measurement Range	Precision	Accuracy
pH	0.00 to 14.00 pH	0.01 pH	±0.1 pH
Electrical conductivity	0.00 to 100 mS/cm	Range Dependant	± 1%
Temperature	-5 to 55 ºC	0.01 ºC	± 0.1 ºC

5.8 Groundwater: Sampling

Each monitoring well was purged prior to sample collection. During purging, qualitative observations were made of water clarity and the presence of petroleum hydrocarbon sheen or odour (if any). Purging was completed by pumping the groundwater out of the monitoring wells until stabilization of water quality parameters was achieved.

Groundwater samples were placed in laboratory-prepared containers and stored in a cooler until delivery to the analytical laboratory under chain of custody procedures. A summary of the groundwater samples submitted for analysis is presented in **Table 4**.

5.9 Sediment: Sampling

No sediment samples were collected as part of this investigation.

5.10 Analytical Testing

The contact information for the analytical laboratory is: Paracel Laboratories Ltd., 351 Nash Road North, Unit 9B, Hamilton, Ontario, L8H 7P4 (Ceara Poley, 1-800-749-1947).

The analytical laboratory is accredited in accordance with the International Standard ISO/IEC 17025 (General Requirement for the Competence of Testing and Calibration Laboratories, May 5, 2005, as amended) and the standards for proficiency testing developed by the Standards Council of Canada, the Canadian Association for Laboratory Accreditation or another accreditation body accepted by the MECP.

5.11 Residue Management Procedures

All residues produced during the investigation (e.g., soil cuttings from drilling, groundwater from well development purging, wash water from equipment decontamination) were placed in sealed drums and stored at the Phase Two Property for later disposal during the SRP.

5.12 Elevation Surveying

Geodetic elevations of each sampling location were completed by WSP using a Sokkia GCX2.

5.13 Quality Assurance and Quality Control Measures

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

- The use of standard operating procedures for all field investigation activities.
- All monitoring wells were developed following installation to remove fine particles from the filter pack and any fluids introduced during drilling.
- Monitoring wells were appropriately purged prior to groundwater sample collection to remove stagnant water from the well bore and improve sample representativeness, minimizing sample agitation and aeration to the extent practicable.
- The collection of field duplicate samples at a minimum frequency of one duplicate for every ten samples.
- The collection of at least one trip blank and field blank for sampling events that include the analysis of volatile compounds (e.g. PHC F1, trihalomethanes, VOCs, BTEX) in groundwater.
- Daily checks of calibration were completed for field equipment using a standard of known concentration.
- Soil and groundwater samples were handled and stored in accordance with the sample collection and preservation requirement of the MECP "*Protocol for Analytical Methods Used in the Assessment of Properties Under Part XV.I of the Environmental Protection Act and Excess Soil Quality*", July 1, 2011 (as amended

February 19, 2021). Samples were collected directly into pre-cleaned, laboratory-supplied sample containers with the appropriate preservative for the analyte group. Upon collection, samples were placed in insulated coolers with ice for storage and transport to the analytical laboratory under chain of custody protocols.

- Dedicated sampling equipment (tubing and foot valves) and clean disposable Nitrile™ gloves were used at each sampling location to prevent cross-contamination. All non-dedicated sampling equipment (e.g., water level meters) was decontaminated between sampling locations. Sampling equipment in contact with soil or groundwater was cleaned by mechanical means (i.e., washed with a phosphate-free, laboratory-grade detergent and, if necessary, an appropriate desorbing wash solution) and thoroughly rinsed with analyte-free water.
- Detailed field records documenting the methods and circumstances of collection for each field sample were prepared at the time of sample collection. Each sample was assigned a unique sample identification number recorded in the field notes, along with the date and time of sample collection, the sample matrix, and the requested analyses.
- The submission of samples to the analytical laboratory in accordance with standard chain of custody procedures.

Below is a summary of the primary and duplicate samples.

Date	Media	Primary Sample ID	Duplicate Sample ID	Trip & Field Blanks
May 22, 2025	Soil	BH/MW1-1-C	Dup AC	NA
		BH/MW1-1-D	Dup AB	NA
		BH/MW2-1A-C	Dup AD	NA
		BH/MW3-5-D	Dup AA	NA
June 11, 2025	Soil	TP102-1	Dup 100A	NA
		TP109-1	Dup 100B	NA
		TP114-1	Dup 100C	NA
July 3, 2025	Soil	TP206-1	Dup 200A	NA

Date	Media	Primary Sample ID	Duplicate Sample ID	Trip & Field Blanks
		TP205-1	Dup 200B	NA
August 21, 2025	Soil	CS-1	Dup-CS-X	NA
June 5, 2025	Groundwater	BH/MW1	GW-DUP	Trip & Field Blanks

6.0 REVIEW AND EVALUATION

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

6.1 Geology

The soil conditions encountered during the test pitting and borehole drilling programs are presented in the field logs (**Appendix C**) and cross-sections (**Figures 6, 7, 10, 11, 13, and 14**). The following presents a summary of the subsurface soil conditions encountered during the investigation.

In general, the subsurface soil conditions encountered in the boreholes and test pits consisted of surficial asphalt or gravel and sand, overlying fill of variable depths (up to 3.05 mbgs at borehole BH/MW1), with predominantly silty sand native soils that extend to the maximum depth of investigation (9.1 mbgs at BH/MW1 and BH/MW2). The fill materials encountered at the Phase Two Property predominantly consisted of gravel, silty sands/sandy silts, silty clay/clayey silts, and/or miscellaneous fills included sands, gravels, silts, and clays. In the gravel parking area at the east end of the Phase Two Property, the fill materials often included debris, such as: asphalt pieces, concrete pieces of various sizes, bricks and/or brick pieces, spent electrical wires, plastic bags and/or hard plastic pieces, pieces of metal, wood (e.g., rail ties), and/or pieces of clay pipes.

6.2 Groundwater: Elevations and Flow Direction

The groundwater investigation included the sampling and analysis of groundwater in the unconfined aquifer (i.e., the native silty sand). The monitoring well screens were installed at elevations ranging from 187.27 to 183.70 metres above sea level (mASL) (5.18 to 8.23 mbgs). A summary of the monitoring well construction details are presented in **Table 1**.

Monitoring for water levels and free product was completed using an interface probe on June 5, 2025. No evidence of petroleum hydrocarbon free product or sheen in groundwater was observed.

The groundwater elevations at each monitoring well are summarized in **Table 2**. Groundwater elevations in the unconfined aquifer ranged from 185.38 to 189.80 mASL (2.13 to 6.86 mbgs) upon completion of drilling on May 22, 2025, from 185.56 to 185.61 mASL (6.32 to 6.85 mbgs) on May 28, 2025, and from 185.55 to 185.58 mASL (6.36 to 6.87 mbgs) on June 5, 2025. Based on the interpreted groundwater elevation contours presented in **Figure 8**, the inferred direction of groundwater flow in the unconfined aquifer is north.

Where petroleum hydrocarbons or light non-aqueous phase liquids may be present on, in or under the Phase Two Property, the screened intervals of monitoring wells must be positioned to intersect the water table. The elevations of the screened intervals and the water table elevations for monitoring wells located in APECs 3, 4, and 5 are summarized below.

Well ID and Relevant APEC	Top of Well Screen (mASL)	Bottom of Well Screen (mASL)	Water Level June 5, 2025 (mASL)	Comment
BH/MW1	187.27	184.22	185.58	Screen straddles the water table
BH/MW2	187.06	184.01	185.55	Screen straddles the water table
BH/MW3	186.75	183.70	185.57	Screen straddles the water table

Any temporary fluctuation in water levels on the Phase Two Property is not anticipated to affect the conclusions of the Phase Two ESA. Seasonal fluctuation in water levels should be expected. Given the limited number of monitoring events, seasonal trends could not be identified; however shallow groundwater water levels are typically highest following the spring recharge and decline throughout the summer and fall months into the winter.

Underground utility locates available for the Phase Two Property indicated that a catch basin and associated stormwater pipe is present along the north end of the property. In addition, there are foundation structures associated with the site building. The presence of subsurface utilities and structures at the Phase Two Property are not expected to act as preferential pathways promoting the migration of contaminants of concern (COCs) as the water table is not inferred to intercept buried utilities and subsurface structures at the Phase Two Property and no COPCs are present in groundwater exceeding the applicable site condition standards.

6.3 Groundwater: Hydraulic Gradients

The average horizontal hydraulic gradient in the unconfined aquifer was 0.002 m/m (**Figure 8**). Variability in the hydraulic gradient may be related to the presence of fill throughout the Phase Two Property and point sources of recharge from the south portion of the Site.

Vertical hydraulic gradients were not determined since the reported concentrations of all COPCs in groundwater met the applicable site condition standards.

6.4 Fine-Medium Soil Texture and pH

Soil samples were collected from native overburden materials and submitted to Paracel for a 75 micrometer (µm) sieve wash test. The sieve wash test results are provided in **Appendix C**. A summary of the test results is presented below.

Sample ID	Sample Depth (mbgs)	Soil Description	%Passing (75 µm)	Soil Texture
BH/MW1-4-C	4.6-6.1	SILTY SAND	11.5	Coarse
BH/MW3-5-D	6.4	SILTY SAND	7.0	Coarse

Based on field observations, borehole stratigraphy and the sieve analysis results, greater than one third of the soil is considered to be coarse textured and as such the coarse textured site condition standards are applicable.

Soil samples were collected from surface and subsurface soil and submitted to Paracel for pH determination. A summary of the test results is presented below.

Sample ID	Sample Depth (mbgs)	Surface/Subsurface Soil	pH
BH/MW1-1-C	0.2-1.5	Surface soil	7.4
BH/MW2-1A-C & Dup AD	0.2-0.6	Surface soil	7.5
BH/MW3-4-D	5.3	Subsurface soil	7.6
BH6-1-C	0.25-1.5	Surface soil	7.4
BH7-2B-C	2.3-3.0	Subsurface soil	7.5
BH8-1-C	0.15-1.5	Surface soil	7.3

The reported pH of four samples, plus one field duplicate, of surface soil meets the requirement that 5≤pH≤9. The reported pH of two samples of subsurface soil meets the requirement that 5≤pH≤11.

6.5 Soil: Field Screening

The results of headspace vapour measurements are presented on the field logs in **Appendix C**. Combustible gas vapour ranged from 0 to 590 ppm (highest reading at BH/MW1 between 7.6 to 9.1 mbgs) and total organic vapour measurements ranged from 0 to 1 ppm (highest readings collected at several locations at varying depths).

6.6 Soil: Quality

A list of soil samples submitted for laboratory analysis is provided in **Table 3**. The analytical results for soil samples are summarized in **Tables 5 to 8**. Certificates of analysis are provided in **Appendix D**.

The reported concentrations of all soil samples met the applicable Table 3 SCS with the following exceptions:

Fill – APEC 1:

All initial borehole samples met the applicable Table 3 SCS, except for lead, benzo(a)pyrene, dibenzo(a,h)anthracene, fluoranthene, and/or indeno(1,2,3-cd)pyrene as follows:

- Lead: Sample BH11-1A-C at 0.3-0.5 mbgs presented a concentration of 123 micrograms per gram (µg/g), exceeding the Table 3 SCS of 120 µg/g.
- Benzo(a)pyrene:
  - Sample BH7-1-C at 0.25-1.5 mbgs presented a concentration of 0.32 µg/g, exceeding the Table 3 SCS of 0.30 µg/g. Four additional samples plus a field duplicate were collected via testpit excavation within 2 m of BH7 (TP101-1, TP102-1 [plus field duplicate Dup 100A], TP103-1, and TP104-1). The average concentration of BH7-1-C, TP101-1, TP102-1, TP103-1, and TP104-1 of benzo(a)pyrene and all other PAHs parameters were below the Table 3 SCS values. Therefore, no exceedance exists at BH7.
  - Sample BH11-1A-C at 0.3-0.5 mbgs presented a concentration of 0.49 µg/g, exceeding the Table 3 SCS of 0.30 µg/g.

- Dibenzo(a,h)anthracene:
  - Sample BH11-1A-C at 0.3-0.5 mbgs presented a concentration of 0.12 µg/g, exceeding the Table 3 SCS of 0.10 µg/g.
- Fluoranthene:
  - Sample BH11-1A-C at 0.3-0.5 mbgs presented a concentration of 1.06 µg/g, exceeding the Table 3 SCS of 0.69 µg/g.
- Indeno(1,2,3-cd)pyrene:
  - Sample BH11-1A-C at 0.3-0.5 mbgs presented a concentration of 0.43 µg/g, exceeding the Table 3 SCS of 0.38 µg/g.

To delineate the exceedances of lead and PAHs parameters at BH11-1A-C, testpit samples were collected. All testpit samples met the applicable Table 3 SCS, except for lead, cadmium, zinc, benzo(a)pyrene, fluoranthene, and/or indeno(1,2,3-cd)pyrene as follows:

- Lead:
  - Sample TP108-1 at 0.25-0.55 mbgs presented a concentration of 191 µg/g, exceeding the Table 3 SCS of 120 µg/g.
  - Sample TP110-1 at 0.3-0.6 mbgs presented a concentration of 324 µg/g, exceeding the Table 3 SCS of 120 µg/g.
  - Sample TP113-1 at 0.4-0.9 mbgs presented a concentration of 337 µg/g, exceeding the Table 3 SCS of 120 µg/g.
  - Sample TP114-1 at 0.3-1.2 mbgs presented a concentration of 149 µg/g, exceeding the Table 3 SCS of 120 µg/g.
  - Sample TP204-1 at 0.2-1.2 mbgs presented a concentration of 175 µg/g, exceeding the Table 3 SCS of 120 µg/g.
  - Sample TP205-1 and its field duplicate, Dup 200B, at 0.2-1.2 mbgs presented a concentration of 125 and 135 µg/g, respectively, exceeding the Table 3 SCS of 120 µg/g.
- Cadmium: Sample TP110-1 at 0.3-0.6 mbgs presented a concentration of 1.4 µg/g, exceeding the Table 3 SCS of 1.2 µg/g.
- Zinc: Sample TP110-1 at 0.3-0.6 mbgs presented a concentration of 397 µg/g, exceeding the Table 3 SCS of 340 µg/g.
- Benzo(a)pyrene:
  - Sample TP113-1 at 0.4-0.9 mbgs presented a concentration of 0.32 µg/g, exceeding the Table 3 SCS of 0.30 µg/g.
  - Sample TP207 at 0.3-1.4 mbgs presented a concentration of 0.55 µg/g, exceeding the Table 3 SCS of 0.30 µg/g.
- Fluoranthene: Sample TP207 at 0.3-1.4 mbgs presented a concentration of 1.26 µg/g, exceeding the Table 3 SCS of 0.69 µg/g.
- Indeno(1,2,3-cd)pyrene: Sample TP207 at 0.3-1.4 mbgs presented a concentration of 0.41 µg/g, exceeding the Table 3 SCS of 0.38 µg/g.

Following removal of the above-listed exceedances during the SRP, four confirmatory samples were collected and analyzed for metals and PAHs. The reported concentrations of all COPCs in the remaining soil samples met the applicable Table 3 SCS.

6.7 Groundwater: Quality

Monitoring well construction details are summarized in **Table 1** and a list of groundwater samples submitted for laboratory analysis is provided in **Table 4**. The analytical results for groundwater samples are summarized in **Tables 9 to 11**. Certificates of analysis are provided in **Appendix D**.

The reported concentrations of all COPCs in groundwater met the applicable Table 3 SCS.

In addition to the numerical standards, the MECP sets out aesthetic standards relating to the presence of petroleum hydrocarbon product. Specifically, a property does not meet the site condition standards if there is evidence of free product, including but not limited to, visible petroleum hydrocarbon film or sheen present on groundwater, surface water or in any groundwater or surface water samples. Monitoring for free phase product was conducted during groundwater sample collection. No evidence of free product or sheen in groundwater was observed.

A property does not meet an applicable potable ground water site condition standard unless the QP has determined that there is no indication of objectionable petroleum hydrocarbon odour associated with the ground water. There was no evidence of objectionable petroleum hydrocarbon odour associated with groundwater.

6.8 Sediment: Quality

Sampling and analysis of sediment was not required as part of the Phase Two investigation.

6.9 Data Quality Review

The quality assurance assessment of the field duplicate sample results was conducted according to the MECP document "*Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act and Excess Soil Quality*", March 9, 2004 (amended February 19, 2021) ("Analytical Protocol"). A summary of the data quality review findings is presented in **Appendix D**. Based on this review, the analytical data generated during the investigation are valid and may be used in this Phase Two ESA without further qualification

All certificates of analysis or analytical reports received pursuant to clause 47(2)(b) of O.Reg. 153/04 comply with subsection 47(3). A certificate of analysis or analytical report has been received for each sample submitted for analysis and is provided in **Appendix D**.

6.10 Phase Two Conceptual Site Model

The Phase Two CSM is presented in the following sections. The location of the Phase Two Property is provided in **Figure 1**.

POTENTIAL SOURCES OF CONTAMINATION

Potentially Contaminating Activities

Based on the information obtained as part of the Phase One ESA, the following potentially contaminating activities (PCAs) were identified. The location of each PCA is provided in **Figure 2**:

Potentially Contaminating Activity	Information Source	Rationale for Potential Contribution of the PCA to an APEC
#30 Importation of Fill Material of Unknown Quality – Possible fill material of unknown quality was used for grading purposes on the Phase One Property. The extent of the fill materials is unknown.	Site observations	The PCA is on the Phase One Property and must be identified as an APEC. The fill materials are anticipated to affect the uppermost soil layers at the Phase One Property due to the nature of the contaminants of potential concern (COPCs).
Other – Salting of the walkways and parking lot for safety purposes in the winter.	Site observations and Site Representative	The PCA is on the Phase One Property and must be identified as an APEC. However, the APEC is exempt from investigation as per O.Reg. 153/04 Section 49.1.
#55. Transformer Manufacturing, Processing and Use – A pad-mounted transformer was present at the time of the Site Visit near the southwest corner of the Phase One Property.	Site Visit	Due to the proximity to the Phase One Property (i.e., adjacent), this PCA results in an APEC at the Phase One Property.
#28. Gasoline and Associated Product Storage in Fixed Tanks – Two steel gasoline tanks with a capacity of 22,700 and 45,400 L were listed for the property immediately south of the Phase One Property. The property was historically occupied by an ESSO gas station and operated from the 1950s to the 1990s.	ERIS report, FIPs and city directories	Due to the nature of the activities, length of active time of the PCAs, associated contaminants, and the proximity to the Phase One Property (i.e., adjacent), this PCA results in an APEC at the Phase One Property.
#37. Operation of Dry Cleaning Equipment (where chemicals are used) – Two dry-cleaning businesses were listed for the commercial plaza across Portage Road, west of the Phase One Property. Royal Professional Dry Cleaner/Colonial Cleaners operated at 3519/3523 Portage Road (110 m southwest) from 1970 to 2017. Imperial Cleaners has operated at 3489/3479 Portage Road (80 m west of the Phase One Property) since 1965.	ERIS report, Site Visit and city directories	Due to the nature of the activities, length of active time of the PCAs, associated contaminants, and the proximity to the Phase One Property (i.e., inferred upgradient), these PCAs result in an APEC at the Phase One Property.

Areas of Potential Environmental Concern

The following APECs were identified at the Phase Two Property. The location of each APEC is presented in **Figure 4**.

Area of Potential Environmental Concern[1]	Location of Area of Potential Environmental Concern on Phase One Property	Potentially Contaminating Activity[2]	Location of PCA (on-Site or off-Site)	Contaminants of Potential Concern[3]	Media Potentially Impacted (Groundwater, soil, and/or Sediment)
APEC 1 - Possible fill material of unknown quality was used for grading purposes on the Phase One Property. The extent of the fill materials is unknown.	The Phase One Property	#30. Importation of Fill Material of Unknown Quality	On-site	Metals, As, Se, Sb, PHCs, BTEX, PAHs, pH, EC, SAR	Soil
APEC 2 - Salt and ice-melt was applied to the walkways, entrances, and parking lot for safety purposes during the winter.	The parking lot areas, walkways, and entrances	Other – Salting and application of ice-melt on the walkways, entrances, and parking lot for safety purposes in the winter. Exempt by O.Reg. 153/04 Section 49.1	On-site	EC, SAR Exempt by O.Reg. 153/04 Section 49.1	Soil Exempt by O.Reg. 153/04 Section 49.1
APEC 3 - A pad-mounted transformer was present at the time of the Site Visit near the southwest corner of the Phase One Property.	Southwest corner of the Phase One Property	#55. Transformer Manufacturing, Processing and Use	Off-site	PCBs, PHCs, BTEX	Soil and Groundwater
APEC 4 - Two steel gasoline tanks with a capacity of 22,700 and 45,400 L were listed for the property immediately south of the Phase One Property. The property was historically occupied by an ESSO gas station and operated from the 1950s to the 1990s.	Southern portion of the Phase One Property	#28. Gasoline and Associated Product Storage in Fixed Tanks	Off-site	PHCs, BTEX, metals, As, Se, Sb	Groundwater
APEC 5 - Two dry-cleaning businesses were listed for the commercial plaza across Portage Road,	Southwestern portion of the Phase One Property	#37. Operation of Dry Cleaning Equipment (where	Off-site	VOC	Groundwater

Area of Potential Environmental Concern[1]	Location of Area of Potential Environmental Concern on Phase One Property	Potentially Contaminating Activity[2]	Location of PCA (on-Site or off-Site)	Contaminants of Potential Concern[3]	Media Potentially Impacted (Groundwater, soil, and/or Sediment)
west of the Phase One Property. Royal Professional Dry Cleaner/Colonial Cleaners operated at 3519/3523 Portage Road (110 m southwest) from 1970 to 2017. Imperial Cleaners has operated at 3489/3479 Portage Road (80 m west of the Phase One Property) since 1965.		chemicals are used)			

Subsurface Structures and Utilities

Underground utility locates available for the Phase Two Property indicated that a catch basin and associated stormwater pipe is present along the north end of the property. In addition, there are foundation structures associated with the site building. The presence of subsurface utilities and structures at the Phase Two Property are not expected to act as preferential pathways promoting the migration of COCs as the water table is not inferred to intercept buried utilities and subsurface structures at the Phase Two Property and no COPCs are present in groundwater exceeding the applicable site condition standards.

PHYSICAL SETTING

Stratigraphy

In general, the subsurface soil conditions encountered in the boreholes and test pits consisted of surficial asphalt or gravel and sand, overlying fill of variable depths (up to 3.05 mbgs at borehole BH/MW1), with predominantly silty sand native soils that extend to the maximum depth of investigation (9.1 mbgs at BH/MW1 and BH/MW2). The fill materials encountered at the Phase Two Property predominantly consisted of gravel, silty sands/sandy silts, silty clay/clayey silts, and/or miscellaneous fills included sands, gravels, silts, and clays. In the gravel parking area at the east end of the Phase Two Property, the fill materials often included debris, such as: asphalt pieces, concrete pieces of various sizes, bricks and/or brick pieces, spent electrical wires, plastic bags and/or hard plastic pieces, pieces of metal, wood (e.g., rail ties), and/or pieces of clay pipes.

Hydrogeological Characteristics

Regional groundwater is anticipated to flow northeast toward the Niagara River (2 km east/northeast). Groundwater flow in the vicinity of the Phase Two Property is also anticipated to be to the northeast.

The average horizontal hydraulic gradient in the unconfined aquifer was 0.002 m/m (**Figure 8**). Variability in the hydraulic gradient may be related to the presence of fill throughout the Phase Two Property and point sources of recharge from the south portion of the Site.

Vertical hydraulic gradients were not determined since the reported concentrations of all COPCs in groundwater met the applicable site condition standards. Bedrock was not encountered during the Phase Two investigation. Based on a review of the Niagara and Niagara-on-the-Lake bedrock map, the bedrock depth of the Phase Two Property is estimated to be around 15-20 mbgs.

The groundwater elevations at each monitoring well are summarized in **Table 2**. Groundwater elevations in the unconfined aquifer ranged from 185.38 to 189.80 mASL (2.13 to 6.86 mbgs) upon completion of drilling on May 22, 2025, from 185.56 to 185.61 mASL (6.32 to 6.85 mbgs) on May 28, 2025, and from 185.55 to 185.58 mASL (6.36 to 6.87 mbgs) on June 5, 2025. Based on the interpreted groundwater elevation contours presented in **Figure 8**, the inferred direction of groundwater flow in the unconfined aquifer is north.

Soil Texture

A summary of the test results of laboratory analysis to determine soil texture is presented below.

Sample ID	Sample Depth (mbgs)	Soil Description	Soil Texture
BH/MW1-4-C	4.6-6.1	SILTY SAND	Coarse
BH/MW3-5-D	6.4	SILTY SAND	Coarse

Based on field observations, borehole stratigraphy and the sieve analysis results, greater than one third of the soil is considered to be coarse textured and as such the coarse textured site condition standards are applicable.

Non-potable Standards (Section 35)

The Phase Two Property, and all other properties located, in whole or in part, within 250 m of the boundaries of the RSC Property, are supplied by a municipal drinking water system. The intended use of the property does not include agricultural or other use.

The Phase Two Property is not located in an area designated in the municipal official plan as a well-head protection area or other designation identified by the municipality for the protection of groundwater. There are no wells at the Phase Two Property or one of the properties in the phase one study area that are used or intended for use as a source of water for human consumption or agriculture.

Environmentally Sensitive Areas (Section 41)

The QP is not aware of any conditions by which Section 41 of the O.Reg. 153/04 applies to the Phase Two Property. No areas of natural significance were identified on or within 30 m of the Phase Two Property. At the locations tested the pH of surface soil meets the requirement that 5≤pH≤9 and the pH of sub-surface soil meets the requirement that 5≤pH≤11. Accordingly, Section 41 of O.Reg. 153/04 does not apply to the Phase Two Property.

Shallow Soil Property or Water Body (Section 43.1)

Overburden thickness at the Phase Two Property extends beyond the maximum depth of drilling (9.1 mbgs at BH/MW1 and BH/MW2). The Phase Two Property does not include all or part of a water body and is not adjacent to a water body or include land that is within 30 m of a water body. Accordingly, Section 43.1 of the Regulation

does not apply to the Phase Two Property.

Excess Soil

As of the certification date, no soil has been brought from another property and placed on, in or under the Phase Two Property as part of the Phase Two ESA.

Site Condition Standards

The analytical results were compared to Table 3 SCS residential/parkland/institutional property use, coarse textured soil) listed in the Ministry of the Environment, Conservation and Parks (MECP) document *"Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act"*, April 2011 (the Table 3 SCS).

Proposed Buildings and Other Structures

It is understood that the Phase Two Property is to be redeveloped as a single-dwelling residential building. It is noted that the proposed development plan is subject to change.

DELINEATION OF CONTAMINANT IMPACTS

APEC Where Contaminants are Present at a Concentration Above the Applicable Site Condition Standard

APEC 1 – COPCs in APEC 1 were identified at a concentration above the applicable Table 3 SCS during the Phase Two ESA investigation. The lateral and vertical extent of the COPCs above the applicable Table 3 SCS was accomplished both during the Phase Two ESA itself and during the management of soils determined to be impacted due the Phase Two ESA. The following COCs were identified at a concentration about the Table 3 SCS in APEC 1 (**Figures 9** to **14**):

- Cadmium between 0.3-0.6 mbgs at TP110.
- Lead between 0.3-0.5 mbgs at BH11, between 0.25-0.55 mbgs at TP108, between 0.3-0.6 mbgs at TP110, between 0.4-0.9 mbgs at TP113, between 0.3-1.2 mbgs at TP114, between 0.3-1.2 mbgs at TP204, and between 0.2-1.2 mbgs at TP205.
- Zinc between 0.3-0.6 mbgs at TP110.
- Benzo(a)pyrene between 0.25-1.5 mbgs at BH7. However, this exceedance was noted to be marginal. Therefore, to confirm this exceedance of benzo(a)pyrene at BH7, four testpits were excavated within 2 m of BH7 with samples collected representing the same material as the original exceeding sample. Four additional samples plus a field duplicate were analyzed (TP101-1, TP102-1 [plus field duplicate Dup 100A], TP103-1, and TP104-1). The average concentration of benzo(a)pyrene and all other PAHs parameters in samples BH7-1-C, TP101-1, TP102-1, TP103-1, and TP104-1 were below the applicable Table 3 SCS values. Therefore, no exceedance exists at BH7.
- Benzo(a)pyrene between 0.3-0.5 mbgs at BH11, between 0.4-0.9 mbgs at TP113, and between 0.3-1.4 mbgs at TP207.
- Dibenzo(a,h)anthracene between 0.3-0.5 mbgs at BH11.
- Fluoranthene between 0.3-0.5 mbgs at BH11, and between 0.3-1.4 mbgs at TP207.

- Indeno(1,2,3-cd)pyrene between 0.3-0.5 mbgs at BH11, and between 0.3-1.4 mbgs at TP207.

The reported concentrations of the remaining soil samples collected during the investigation within APEC 1 and analyzed for the COPCs/COCs met the applicable Table 3 SCS.

APEC 2 - The investigation included the collection of four soil samples (four boreholes) from APEC 2, plus one field duplicate. The reported concentrations of all COPCs met the applicable Table 3 SCS.

APEC 3 - The investigation included the collection of one soil sample (one boreholes) from APEC 3, plus one field duplicate soil sample, and one groundwater sample (one monitoring well) plus one field duplicate. The reported concentrations of all COPCs met the applicable Table 3 SCS.

APEC 4 - The investigation included the collection of two groundwater samples from APEC 4 (two monitoring wells) plus one field duplicate. The reported concentrations of all COPCs met the applicable Table 3 SCS.

APEC 5 - The investigation included the collection of two groundwater samples from APEC 5 (two monitoring wells) plus one field duplicate. The reported concentrations of all COPCs met the applicable Table 3 SCS.

Contaminant Distribution

The lateral extent of metals and PAHs impacts in soil for APEC 1 are presented in **Figures 9** and **12**, respectively.

Potential Reason for Discharge into the Environment at the Site

The concentrations of metals (cadmium, lead, and zinc) and PAHs (benzo(a)pyrene, dibenzo(a,h)anthracene, fluoranthene, and indeno(1,2,3-cd)pyrene) above the applicable Table 3 SCS for APEC 1 are inferred to be a result of historical fill importation of unknown quality at the Phase Two Property. The fill was likely used to build up the ground surface elevation for parking purposes. Deleterious materials in the field were noted in boreholes BH7, BH9, and BH11, and in testpits TP108, TP109, TP113, TP205, and TP207 in the form of former rail ties, slag, possible cinders, staining or deleterious odours, and/or other debris. These deleterious materials may have contributed to the elevated concentrations of various metals and PAHs parameters at the Phase Two Property. However, no following remediation, no COCs are present above the applicable Table 3 SCS.

Contaminant Migration

Contaminants were found to be limited to the surficial soil (i.e., the top 1.5 m). The reported concentrations of the COPCs met the applicable Table 3 SCS and therefore contaminant migration in groundwater is not relevant.

Meteorological and Climatic Considerations

Seasonal fluctuation in water levels should be expected. Given the limited number of monitoring events seasonal trends could not be identified; however shallow groundwater water levels are typically highest following the spring recharge and decline throughout the summer and fall months into the winter.

The distribution of the contaminants would not be impacted by climatic or meteorological conditions such as temporal fluctuations in groundwater levels as the contaminants were limited to surficial soils (i.e., the top 1.5 m). Therefore, the COCs were not considered to be an issue in the groundwater medium.

Soil Vapour Intrusion Pathways

The depth and location of proposed building foundations and footings are unknown. The metals and PAHs parameters (lead, cadmium, zinc, benzo(a)pyrene, fluoranthene, indeno(1,2,3-cd)pyrene, and dibenzo(a,h)anthracene) that were found to exceed the applicable Table 3 SCS are not considered volatile.

However, since the exceedances were remediation, soil vapour intrusion does not represent a possible pathway for contamination concern at the Phase Two Property.

CROSS-SECTIONS

Lateral and Vertical Distribution of Contaminants

Representative cross-sections are presented in **Figures 10, 11, 13,** and **14**.

POTENTIAL EXPOSURE PATHWAYS AND RECEPTORS

Following remediation, no contaminants were present at concentrations greater than the applicable Table 3 SCS and therefore potential release and transport mechanisms, exposure pathways and human and ecological receptors are not considered further.

NON-STANDARD DELINEATION

Non-standard delineation conducted in accordance with Section 7.1 of Schedule E was not part of preparing the Phase Two ESA report.

SUBSECTION 6(2) EXEMPTION

Groundwater investigation was conducted as part of the Phase Two ESA.

7.0 CONCLUSIONS

The Phase Two ESA investigated the five APECs identified in the 2025 Phase One ESA. Based on the results of the soil samples submitted as part of this Phase Two ESA, and following remedial excavation as detailed in **Appendix E**, the reported concentrations of the COPCs were below the applicable Table 3 SCS in soil at tested locations as of the certification date (August 21, 2025). No COPCs were found to be present above the applicable Table 3 SCS in groundwater.

8.0 REFERENCES

Phase One Environmental Site Assessment, 3456 Portage Road, Niagara Falls, Ontario

Ontario Geological Survey 2010. Surficial Geology of Southern Ontario; Ontario Geological Survey, Miscellaneous Release – Data 128-REV. scale 1:50,000

Bedrock Geology of Ontario. Geological Survey Map Miscellaneous release – Data 126 – Revision 1. Scale 1:250,000

9.0 LIMITATIONS

This report was prepared for the exclusive use of River Realty Development (1976) Inc. The report, which specifically includes all tables, figures and appendices, is based on data and information, collected during conducting the Phase Two ESA, and is based solely on the conditions of the property at the time of conducting investigations, supplemented by historical information and data obtained by WSP Canada Inc. as described in this report.

The assessment of environmental conditions at this site has been made using the results of field screening techniques and chemical analysis of soil and groundwater samples at a limited number of locations. The site conditions between sampling locations have been inferred based on conditions observed at the sampling locations. Conditions may vary from these sample locations. Additional study, including further investigation, can reduce the inherent uncertainties associated with this type of study. However, it is never possible, even with exhaustive sampling and testing, to dismiss the possibility that part of a site may be contaminated and remain undetected. Borehole logs should not be used for geotechnical purposes, except as directed by a geotechnical engineer.

The services performed as described in this report were conducted in a manner consistent with that level of care and skill normally exercised by other members of the engineering and science professions currently practicing under similar conditions, subject to the time limits and financial and physical constraints applicable to the services.

Any use which a third party makes of this report, or any reliance on, or decisions to be made based on it, are the responsibilities of such third parties. WSP Canada Inc. accepts no responsibility for damages, if any, suffered by any third party (other than as noted above) as a result of decisions made or actions based on this report.

The content of this report is based on information collected during the drilling, soil and groundwater sampling activities, our present understanding of the site conditions, and our professional judgement in light of such information at the time of this report. This report provides a professional opinion and therefore no warranty is expressed, implied, or made as to the conclusions, advice and recommendations offered in this report. This report does not provide a legal opinion regarding compliance with applicable laws. With respect to regulatory compliance issues, it should be noted that regulatory statutes and the interpretation of regulatory statutes are subject to change.

The findings and conclusions of this report are valid only as of the date of this report. If new information is discovered in future work, including excavations, borings or other studies, WSP Canada Inc. should be requested to re-evaluate the conclusions of this report, and to provide amendments as required.

The monitoring wells installed as part of this project have been constructed using licensed drilling/well contractors employing licensed well technicians. It is owner’s responsibility to have a licensed well technician properly abandon all monitoring wells, if required.

10.0 SIGNATURES

We trust that you will find the contents of this report satisfactory for your current needs. Should you require clarification of the information provided, please do not hesitate to contact the undersigned.

Signature Page

The objectives and requirements set out in O.Reg. 153/04 for a Phase Two Environmental Site Assessment were applied in carrying out the environmental site assessment and preparing this report.

WSP Canada Inc.

Braedan Huras
Environmental Scientist

Patrick Shriner, P.Geo.
Principal Environmental Geoscientist

BH/PS

https://wsponlinecan.sharepoint.com/sites/ca-ca0053504.3959/shared documents/06. deliverables/phtwo/ca0053504-reva-phase two esa-3456portagerd-sept4-25.docx

APPENDIX A

Plan of Survey

PLAN OF SURVEY
WITH TOPOGRAPHIC DETAILS

PART OF LOTS 56 AND 60

GEOGRAPHIC TOWNSHIP OF STAMFORD

CITY OF NIAGARA FALLS

REGIONAL MUNICIPALITY OF NIAGARA

SCALE 1 : 150

2 0 2 4 6 8 metres

J.D. BARNES LIMITED

METRIC DISTANCES AND/OR COORDINATES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

NOTES

BEARINGS ARE UTM GRID, DERIVED FROM GNSS OBSERVATIONS, UTM ZONE 17, NAD83 (CSRS) (2010.0).

DISTANCES ARE GROUND AND CAN BE CONVERTED TO GRID BY MULTIPLYING BY THE COMBINED SCALE FACTOR OF 0.999869.

FOR BEARING COMPARISONS
-A ROTATION OF 1°20'35" COUNTER-CLOCKWISE WAS APPLIED TO BEARINGS ON P4 AND P5.
-A ROTATION OF 3°49'10" COUNTER-CLOCKWISE WAS APPLIED TO BEARINGS ON P3.

ELEVATION NOTE

ELEVATIONS ARE OF GEODETIC ORIGIN (CGVD-1928:78), AND ARE DERIVED FROM GNSS OBSERVATIONS AND NATURAL RESOURCES CANADA'S GEOID MODEL HT2.0.

TOPOGRAPHIC LEGEND

FFE	DENOTES FINISHED FLOOR ELEVATION
CB	DENOTES CATCHBASIN
MH	DENOTES MANHOLE
HJB	DENOTES HYDRO JUNCTION BOX
UC	DENOTES UTILITY CHAMBER
G METER	DENOTES GAS METER
TL	DENOTES TRAFFIC LIGHT
WV	DENOTES WATER VALVE
PED	DENOTES UTILITY PEDESTAL
OC	DENOTES OVERHEAD CABLE
G	DENOTES BURIED GAS PIPELINE
UC	DENOTES BURIED CABLE
W	DENOTES BURIED WATER LINE
X X	DENOTES FENCE
	DENOTES DECIDUOUS TREE

LEGEND

■	DENOTES	SURVEY MONUMENT FOUND
□	DENOTES	SURVEY MONUMENT SET
SIB	DENOTES	STANDARD IRON BAR
SSIB	DENOTES	SHORT STANDARD IRON BAR
IB	DENOTES	IRON BAR
IT	DENOTES	IRON TUBE
CP	DENOTES	CONCRETE PIN AND WASHER
PB	DENOTES	PLASTIC BAR
WIT	DENOTES	WITNESS
567	DENOTES	R. BLAKE ERWIN, O.L.S.
744	DENOTES	MATTHEWS, CAMERON, HEYWOOD-K.T. HOWE SURVEYING LTD.
JDB	DENOTES	J.D. BARNES LIMITED
P1	DENOTES	PLAN OF SURVEY BY J.D. BARNES LTD. DATED FEBRUARY 27, 2019, REF No. 19-16-032-00
P2	DENOTES	PLAN 59R-11110
P3	DENOTES	PLAN OF SURVEY BY MATTHEWS & CAMERON LTD., DATED MARCH 6, 1989, LLN: 28959 FILE: 89-137
P4	DENOTES	59R-6200
P5	DENOTES	PLAN OF SURVEY BY MATTHEWS & CAMERON LTD., DATED APRIL 2, 1985, LLN: 25430 FILE: 85-206
MEAS	DENOTES	MEASURED
	DENOTES	PROPERTY LINE

N=NORTH / S=SOUTH / E=EAST / W=WEST

ALL SET SSIB MONUMENTS WERE USED DUE TO LACK OF OVERBURDEN AND/OR PROXIMITY OF UNDERGROUND UTILITIES IN ACCORDANCE WITH SECTION 11 (4) OF O.REG. 525/91.

THE LOCATION OF UNDERGROUND UTILITIES SHOWN ON THE FACE OF THIS PLAN HAVE BEEN INFERRED FROM SURFACE FEATURES AND VISIBLE PAINT MARKS ON GROUND LOCATED BY OTHER CONTRACTORS AND HAVE NOT BEEN TRACED. J.D. BARNES LIMITED ASSUMES NO LIABILITY FOR THEIR ACCURACY.

SURVEYOR'S CERTIFICATE

I CERTIFY THAT:
1. THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT, THE SURVEYORS ACT AND THE REGULATIONS MADE UNDER THEM.
2. THE SURVEY WAS COMPLETED ON MAY 22, 2024.

MAY 23, 2024
DATE

ALLAN J. HEYWOOD
ONTARIO LAND SURVEYOR

THIS PLAN OF SURVEY RELATES TO AOLS PLAN SUBMISSION FORM NUMBER V-71359 AND IS NOT VALID UNLESS EMBOSSED BY A SURVEYOR'S SEAL

J.D.BARNES LIMITED
SURVEYING MAPPING GIS
LAND INFORMATION SPECIALISTS
4318 PORTAGE ROAD - UNIT 2, NIAGARA FALLS, ON L2E 6A4
T: (905) 358-3693 F: (905) 358-6224 www.jdbarnes.com

DRAWN BY:	CHECKED BY:	REFERENCE NO.:
AR	BM/AH	24-16-053-00

FILE: G:\PROJECTS\24-16-053\00 - 24-16-053\Drawing\24-16-053-00 POS Topo.dwg

PLOT DATE: 5/23/2024 9:02 AM

APPENDIX B

Sampling and Analysis Plan

MEMORANDUM

DATE August 20, 2025 CA0053504.3959

TO River Realty Development (1976) Inc.

CC Ari Fogaca

FROM Patrick Shriner

SAMPLING AND ANALYSIS PLAN – 3456 PORTAGE ROAD IN NIAGARA FALLS, ONTARIO

WSP Canada Inc. (WSP), was retained by River Realty Development (1976) Inc. (River Realty) to prepare a Sampling and Analysis Plan (SAP) for the project area located at 3456 Portage Road in Niagara Falls, Ontario (herein referred to as the Site). As required by the Ontario Regulation (O.Reg.) 153/04, this Site-specific sampling and analysis plan (SAP), which includes WSP's Quality Assurance Program (QAP) and standard operating procedures (SOP) is to be developed for each environmental field investigation activity. The SAP is a required component of the Phase Two ESA report that outlines the proposed field work, identifies the number and location of samples to be collected, specifies which SOPs will be used, and the quality assurance measures to be implemented during the field work. All field work will be completed in accordance with the requirements of the SAP, QAP, and SOPs.

Background

The Site is currently owned by River Realty and is located at 3456 Portage Road in Niagara Falls, Ontario. During the Phase One ESA site visit, the Site was vacant with one two-storey building. It is understood that the Phase One Property is to be redeveloped for residential land use.

The overall objective of the investigation is to:

- Meet the O.Reg. 153/04 regulatory requirements.
- Complete field activities in accordance with WSP's Quality Assurance Plan.

A Phase One ESA report was prepared by WSP Canada Inc. for River Realty, dated May 27, 2025. The Phase One ESA identified five (5) areas of potential concern where contaminants of potential concern may be present in soil.

WSP Canada Inc.
55 King Street, Suite 700, St. Catharines, ON
L2R 3H5 Canada
T: +1 905 687 1771

Area of Potential Environmental Concern[1]	Location of Area of Potential Environmental Concern on Phase One Property	Potentially Contaminating Activity[2]	Location of PCA (on-Site or off-Site)	Contaminants of Potential Concern[3]	Media Potentially Impacted (Groundwater, soil and/or Sediment)
APEC 1 - Possible fill material of unknown quality was used for grading purposes on the Phase One Property. The extent of the fill materials is unknown.	The Phase One Property	#30. Importation of Fill Material of Unknown Quality	On-site	Metals, As, Se, Sb, PHCs, BTEX, PAHs, pH, EC, SAR	Soil
APEC 2 - Salt and ice-melt were applied to the walkways, entrances, and parking lot for safety purposes during the winter.	The parking lot areas, walkways, and entrances	Other – Salting and application of ice-melt on the walkways, entrances, and parking lot for safety purposes in the winter. Exempt by O.Reg. 153/04 Section 49.1	On-site	EC, SAR Exempt by O.Reg. 153/04 Section 49.1	Soil Exempt by O.Reg. 153/04 Section 49.1
APEC 3 - A pad-mounted transformer was present at the time of the Site Visit near the southwest corner of the Phase One Property.	Southwest corner of the Phase One Property	#55. Transformer Manufacturing, Processing and Use	Off-site	PCBs, PHCs, BTEX	Soil and Groundwater
APEC 4 - Two steel gasoline tanks with a capacity of 22,700 and 45,400 L were listed for the property immediately south of the Phase One Property. The property was historically occupied by an ESSO gas station and operated from the 1950s to the 1990s.	Southern portion of the Phase One Property	#28. Gasoline and Associated Product Storage in Fixed Tanks	Off-site	PHCs, VOCs, metals, As, Se, Sb	Groundwater
APEC 5 - Two dry-cleaning businesses were listed for the commercial plaza across Portage Road, west of the Phase One Property. Royal Professional Dry Cleaner/Colonial Cleaners operated at 3519/3523 Portage Road (110 m southwest) from 1970 to 2017. Imperial Cleaners has operated at 3489/3479 Portage Road (80 m west of the Phase One Property) since 1965.	Southwestern portion of the Phase One Property	#37. Operation of Dry Cleaning Equipment (where chemicals are used)	Off-site	VOC	Groundwater

Site Access

Access Concern	Information
Site Contact	John Mestek (River Realty)
Lead Assessor	Braedan Huras/Ari Fogaca
Access	Unrestricted access
Hours of Work	7:00 am to 6:00 pm
Site Check-in Procedure	Check in with Patrick Shriner upon arrival and the site contact upon arrival
Photography	Permitted
On-site Orientation or Training	None required

General Requirements

- Complete tailgate meeting before commencing any field work.
- Prepare field deliverable in accordance with SOP 1, including a Daily Log for every day of field work. Use standard field forms.
- Calibration of field equipment should be checked at least once during each field day (record on field form).
- Clean disposable Nitrile™ gloves will be used at each sampling location to prevent cross-contamination.
- All non-dedicated sampling equipment (e.g., split spoons) will be decontaminated between sampling locations. Sampling equipment in contact with soil will be cleaned with a brush; washed with a laboratory-grade detergent solution (e.g., phosphate-free LiquiNox or AlcoNox) and thoroughly rinsed with analyte-free water.

Scope Of Work

The scope of work will include the following tasks:

- Preparing a Health and Safety Plan for internal and subcontractor use before initiating any field work at the Phase Two Property.
- Arranging for the locations of public and private underground and overhead utilities.
- For the soil and groundwater sampling program: drilling boreholes, excavating testpits and installing groundwater monitoring wells.
- Logging and field screening the soil and groundwater samples for evidence of negative impact including the presence of “free flowing product”, using visual, olfactory and sample headspace screening methods.
- Preparing a Phase Two ESA report and Soil Remediation Program (SRP) report, inclusive of figures, tables, stratigraphic and instrumentation logs and certificates of analysis, documenting the methodology and findings of the investigations and conclusions and recommendations regarding soil and groundwater quality and the need for additional investigation and/or remedial activities.

Rationale

The investigation locations were selected on the basis of the following considerations (Table 1).

Table 1: Investigation rationale

Location	Applicable APECs	Rationale
BH/MW1	APEC 1, APEC 2, APEC 3	Coverage across the Site to investigate the presence of fill material. Locate borehole immediately north (down/cross gradient) of pad-mounted transformer.
BH/MW2	APEC 1, APEC 2, APEC 5	Coverage across the Site to investigate the presence of fill material. Locate borehole on the western portion to investigate possible issues regarding the dry-cleaners business present off-site (cross/down gradient)
BH/MW3	APEC 1 APEC 4	Coverage across the Site to investigate the presence of fill material. Locate borehole north (down/cross gradient) of former UST (off-site).
BH4	APEC 1	Coverage across the Site to investigate the presence of fill material.
BH5	APEC 1	Coverage across the Site to investigate the presence of fill material. Locate borehole north (down/cross gradient) of former UST (off-site).
BH6	APEC 1	Coverage across the Site to investigate the presence of fill material
BH7	APEC 1	Coverage across the Site to investigate the presence of fill material.
BH8	APEC 1	Coverage across the Site to investigate the presence of fill material.
BH9	APEC 1, APEC 2	Coverage across the Site to investigate the presence of fill material. Locate borehole north (down/cross gradient) of former UST (off-site).
BH10	APEC 1, APEC 2	Coverage across the Site to investigate the presence of fill material.
BH11	APEC 1, APEC 2	Coverage across the Site to investigate the presence of fill material.
TP101	APEC 1	Delineate PAH impacted soil (BH7).
TP102	APEC 1	Delineate PAH impacted soil (BH7).
TP103	APEC 1	Delineate PAH impacted soil (BH7).
TP104	APEC 1	Delineate PAH impacted soil (BH7).
TP105	APEC 1	Delineate PAH impacted soil (BH7).
TP106	APEC 1	Delineate PAH impacted soil (BH7).
TP107	APEC 1	Delineate PAH impacted soil (BH7).
TP108	APEC 1	Delineate Metals and PAH impacted soil (BH11).

Location	Applicable APECs	Rationale
TP109	APEC 1	Delineate Metals and PAH impacted soil (BH11).
TP110	APEC 1	Delineate Metals and PAH impacted soil (BH11).
TP111	APEC 1	Delineate Metals and PAH impacted soil (BH11).
TP112	APEC 1	Delineate Metals and PAH impacted soil (BH11).
TP113	APEC 1	Delineate Metals and PAH impacted soil (BH11).
TP114	APEC 1	Delineate Metals and PAH impacted soil (BH11).
TP115	APEC 1	Delineate Metals and PAH impacted soil (BH11).
TP201	APEC 1	Delineate Metals and PAH impacted soil (BH11).
TP202	APEC 1	Delineate Metals and PAH impacted soil (BH11).
TP203	APEC 1	Delineate Metals and PAH impacted soil (BH11).
TP204	APEC 1	Delineate Metals and PAH impacted soil (BH11).
TP205	APEC 1	Delineate Metals and PAH impacted soil (BH11).
TP206	APEC 1	Delineate Metals and PAH impacted soil (BH11).
TP207	APEC 1	Delineate Metals and PAH impacted soil (BH11).
TP208	APEC 1	Delineate Metals impacted soil (BH11).
TP209	APEC 1	Delineate Metals impacted soil (BH11).
TP210	APEC 1	Delineate Metals impacted soil (BH11).
TP211	APEC 1	Delineate Metals impacted soil (BH11).
CS-1	APEC 1	Confirmatory samples for the remediation area.
CS-2	APEC 1	Confirmatory samples for the remediation area.
CS-3	APEC 1	Confirmatory samples for the remediation area.
CS-4	APEC 1	Confirmatory samples for the remediation area.

Borehole Drilling and Testpitting

- The program includes 11 boreholes.
- Confirm that every drilling/excavating location have been cleared by the public locates.
- Log “fill” materials as either “FILL (DISTURBED NATIVE)” or “FILL (IMPORTED)”.

- At each location, screen continuous soil samples using an RKI Eagle (both photoionization and combustible gas detectors).
- Collect 1 duplicate sample for every 10 samples.
- A summary of the sampling and analysis plan for soil is provided in Table 2.

Table 2: Sampling and analysis plan for soil

APEC	Samples ID	Borehole/Testpit Depth (mbgs)	Sample Summary
APEC 1 (fill)	All BHs (BH1 to BH11)	Various (between 1.5 and 9 m)	Collect soil samples from the fill at multiple depths until reaching native soil or bedrock. Samples to be submitted for potential analysis of Metals, As, Sb, Se, PAHs, pH, EC, SAR, BTEX and PHCs according to PM directions.
APEC 2 (salt and ice-melt)	NA	NA	Exempt by O.Reg. 153/04 Section 49.1
APEC 3 (transformer)	BH1[1]	9 m	Collect soil samples from the fill at multiple depths until reaching native soil or bedrock. Samples to be submitted for potential analysis of PCBs, PHCs and BTEX according to PM directions.
APEC 1 (fill)	TP101 to TP107	Various	Collect samples to delineate the impacts of PAHs around BH7.
APEC 1 (fill)	TP108 to TP115 and TP201 to TP207	Various	Collect samples to delineate the impacts of Metals and PAHs around BH11.
APEC 1 (fill)	TP208 to TP211	Various	Collect samples to delineate the impacts of Metals around BH11.
APEC 1 (fill)	CS-1 to CS-4	Various	Collect confirmatory samples for the remediation area.

Notes
1 borehole to be completed as a monitoring well.

MONITORING WELL INSTALLATION

- Obtain water levels from surrounding monitoring wells prior to setting well screen. Send field log to Patrick Shriner to discuss intended depth for well installation.
- As indicated in Table 2, install monitoring wells in accordance with SOP No. 11.

GROUNDWATER MONITORING

- Develop monitoring wells in accordance with SOP No. 12.
- Using interface probe to determine depth to water and product thickness in accordance with SOP No. 13. If measurable product is present, use bailer to confirm. Do not collect groundwater samples in monitoring wells with measurable product.
- Collect groundwater samples in accordance with SOP No. 16. Avoid excessive disturbance of the water column.
- A summary of the sampling and analysis plan for groundwater is provided in Table 4.
- Collect purged groundwater and dispose of it with the soil drums during the SRP.

Table 3: Sampling and analysis plan for groundwater (O.Reg. 153/04)

APEC	Borehole ID	Screen Depth (mbgs)	Sample Summary
APEC 3 (transformer)	BH/MW1	Set to intersect water table.	Metals, hydride-forming metals, sodium, PHCs, BTEX, VOCs, PCBs. Collect a duplicate sample.
APEC 4 (fuel UST)	BH/MW3	Set to intersect water table.	Metals, hydride-forming metals, sodium, PHCs, BTEX, VOCs. Submit trip blank for PHC F1 and BTEX.
APEC 5 (dry-cleaners)	BH/MW2	Set to intersect water table.	Metals, hydride-forming metals, sodium, PHCs, BTEX, VOCs

Surveying

- Coordinates/elevation of each sampling location to be obtained by WSP using a dimensioned field sketch tied to permanent and recoverable site features (SOP 1).
- Coordinates/elevation of each sampling location to be obtained by using a Sokkia GCX2.

Chain-Of-Custody

Chain-of-Custody Item	Information
Analytical Laboratory	Paracel
Sample Delivery Instructions	dropping off samples at closest depot
Standards (bulk chemistry and leachate)	Table 3 (residential/parkland/institutional property use, coarse textured soil
Use Record of Site Condition analytical procedure	Yes
Turn-around Time	Soil samples: Regular TAT
WSP Reporting Contact	Ceara Poley
Project-specific quote number (if applicable)	NA
WSP Billing Contact	capayablesinvoice@wsp.com

Chain-of-Custody Item	Information
Is an EQuiS EDD Required	No

Management Of Investigation Derived Waste

- If anything needs to be drummed based on clear evidence of potential impact, label drums for waste management purposes, include WSP Canada Ltd., project number, date and drum contents (soil, purge water). Discuss best location to store drums with site supervisor/manager (should be secure as possible from public access).
- Record inventory of any waste containers on Daily Log.

Limitations

This report was prepared for the exclusive use of River Realty Development (1976) Inc. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of the third party. Should additional parties require reliance on this report, written authorization from WSP will be required. With respect to third parties, WSP has no liability or responsibility for losses of any kind whatsoever, including direct or consequential financial effects on transactions or property values, or requirements for follow-up actions and costs.

In evaluating the property, WSP has relied in good faith on information provided by other individuals noted in this report. WSP has assumed that the information provided is factual and accurate. In addition, the findings in this report are based, to a large degree, upon information provided by the current owner/occupant. WSP 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.

WSP makes no other representations whatsoever, 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.

Closure

We trust that the information presented in this report meets your current requirements. Should you have any questions, or concerns, please do not hesitate to contact the undersigned.

WSP Canada Inc.

Ari Fogaça
Environmental Technician

Patrick Shriner, P.Geo., QP_{ESA}
Principal, Environmental Scientist

AF/PS

https://wsponlinecan.sharepoint.com/sites/ca-ca0053504.3959/shared documents/05. technical/ptwo/ca0053504.3959-r-reva-sap - portage rd.docx

APPENDIX C

Field Logs

PROJECT: CA0053504.3959

LOCATION: N 4776200.20; E 654599.30

RECORD OF BOREHOLE: BH/MW1

BORING DATE: May 22, 2025

DRILL RIG: Geoprobe 7822DT (Direct)

SHEET 1 OF 2

DATUM: Geodetic

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: BLOWS/0.3m	HEADSPACE COMBUSTIBLE VAPOUR CONCENTRATIONS [PPM] ⊕ ND = Not Detected (100 200 300 400) / HEADSPACE ORGANIC VAPOUR CONCENTRATIONS [PPM] □ ND = Not Detected (100 200 300 400)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT Wp W Wl (10 20 30 40)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
0		PAVEMENT SURFACE		192.54							
		ASPHALT		0.00							Concrete
		FILL - (GP) GRAVEL, with sand; grey; moist		0.10							
		FILL - (SM) SILTY SAND, some clay, some gravel, trace asphalt pieces; reddish brown; moist		0.20	1	DO		ND		PHCs, BTEX, Metals, PCBs, pH	
1		- trace cobbles below 1.52 m - trace rootlets between 1.52 m and 1.83 m									
2					2	DO		ND		EC, SAR	Bentonite
3				189.49							
	Direct Push 83 mm Dual Tube	(SM) SILTY SAND, some gravel, trace clay; reddish brown; moist		3.05	3	DO		ND			
4		- trace clay below 4.57 m									
5					4	DO		ND			Silica Sand
6											
7		- wet to saturated below 6.71 m			5	DO		ND			Screen
8					6	DO					
		CONTINUED NEXT PAGE									

DEPTH SCALE

1 : 40

LOGGED: BH

CHECKED: PS

GTA-BHS 001 S:\CLIENTS\RIVER_REALTY_DEVELOPMENT_1976_INC\3456_PORTAGE_ROAD_NIAGARA_FALLS_ONTARIO\02_DATA\GINT\3456_PORTAGE_ROAD.GPJ GAL-MIS.GDT 7/31/25

PROJECT: CA0053504.3959

LOCATION: N 4776200.20; E 654599.30

RECORD OF BOREHOLE: BH/MW1

BORING DATE: May 22, 2025

DRILL RIG: Geoprobe 7822DT (Direct)

SHEET 2 OF 2

DATUM: Geodetic

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: BLOWS/0.3m	HEADSPACE COMBUSTIBLE VAPOUR CONCENTRATIONS [PPM] ⊕ ND = Not Detected (100 200 300 400) / HEADSPACE ORGANIC VAPOUR CONCENTRATIONS [PPM] □ ND = Not Detected (100 200 300 400)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT Wp W Wl (10 20 30 40)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
8		*--- CONTINUED FROM PREVIOUS PAGE ---*									
8	Direct Push 83 mm Dual Tube	(SM) SILTY SAND, some gravel, trace clay; reddish brown; moist			6	DO		ND; 590 ⊕		PHCs, VOCs	Screen; Cave
9				183.40							
		END OF BOREHOLE NOTE(S): 1. Water in well encountered at a depth of 6.4 m during drilling. 2. Cave to 6.7 m, re-drill to monitoring well install depth		9.14							
10											
11											
12											
13											
14											
15											
16											

DEPTH SCALE

1 : 40

LOGGED: BH

CHECKED: PS

GTA-BHS 001 S:\CLIENTS\RIVER_REALTY_DEVELOPMENT_1976_INC\3456_PORTAGE_ROAD_NIAGARA_FALLS_ONTARIO\02_DATA\GINT\3456_PORTAGE_ROAD.GPJ GAL-MIS.GDT 7/31/25

PROJECT: CA0053504.3959

LOCATION: N 4776212.00; E 654599.90

RECORD OF BOREHOLE: BH/MW2

BORING DATE: May 22, 2025

DRILL RIG: Geoprobe 7822DT (Direct)

SHEET 1 OF 2

DATUM: Geodetic

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: BLOWS/0.3m	HEADSPACE COMBUSTIBLE VAPOUR CONCENTRATIONS [PPM] ⊕ ND = Not Detected (100 200 300 400) / HEADSPACE ORGANIC VAPOUR CONCENTRATIONS [PPM] □ ND = Not Detected (100 200 300 400)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT Wp W Wl (10 20 30 40)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		PAVEMENT SURFACE		192.34							
0	Direct Push, 83 mm Dual Tube	ASPHALT		0.00						PHCs, BTEX, Metals, PAHs, pH, EC, SAR	Concrete
		FILL - (GP) GRAVEL with sand; grey; moist		0.10							
		FILL - SANDY SILT, some gravel, trace clay, trace rootlets; reddish brown; moist		0.23	1A	DO		ND			
				191.73							
		(SM) SILTY SAND, trace clay and gravel; reddish brown; moist		0.61							
1					1B	DO		ND			
		- some gravel and cobbles between 1.52 m and 2.13 m									
2					2	DO		ND			Bentonite
3					3	DO		ND			
4											
		- some gravel and cobbles between 4.57 m and 6.17 m									
5					4	DO		ND			Silica Sand
6											
		- wet/saturated below 6.17 m									
7					5	DO		ND			Screen
8					6	DO					
		CONTINUED NEXT PAGE									

DEPTH SCALE

1 : 40

LOGGED: BH

CHECKED: PS

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PROJECT: CA0053504.3959

LOCATION: N 4776212.00; E 654599.90

RECORD OF BOREHOLE: BH/MW2

BORING DATE: May 22, 2025

DRILL RIG: Geoprobe 7822DT (Direct)

SHEET 2 OF 2

DATUM: Geodetic

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: BLOWS/0.3m	HEADSPACE COMBUSTIBLE VAPOUR CONCENTRATIONS [PPM] ⊕ ND = Not Detected (100 200 300 400) / HEADSPACE ORGANIC VAPOUR CONCENTRATIONS [PPM] □ ND = Not Detected (100 200 300 400)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT Wp W Wl (10 20 30 40)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
8		*--- CONTINUED FROM PREVIOUS PAGE ---*									
8	Direct Push 83 mm Dual Tube	(SM) SILTY SAND, trace clay and gravel; reddish brown; moist			6	DO		⊕ □		PHCs, VOCs	Screen / Cave
9				183.20							
		END OF BOREHOLE		9.14							
		NOTE(S): 1. Water in well encountered at a depth of 6.86 m during drilling. 2. Cave to 7.32 m, re-drill to monitoring well install depth									
10											
11											
12											
13											
14											
15											
16											

DEPTH SCALE

1 : 40

LOGGED: BH

CHECKED: PS

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PROJECT: CA0053504.3959

LOCATION: N 4776202.00; E 654620.00

RECORD OF BOREHOLE: BH/MW3

BORING DATE: May 22, 2025

DRILL RIG: Geoprobe 7822DT (Direct)

SHEET 1 OF 2

DATUM: Geodetic

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: BLOWS/0.3m	HEADSPACE COMBUSTIBLE VAPOUR CONCENTRATIONS [PPM] ⊕ ND = Not Detected (100 200 300 400) / HEADSPACE ORGANIC VAPOUR CONCENTRATIONS [PPM] □ ND = Not Detected (100 200 300 400)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT Wp W Wl (10 20 30 40)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
0		PAVEMENT SURFACE		191.99							
		ASPHALT		0.00							Concrete
		FILL - (GP) GRAVEL, with sand; brown/grey; moist		0.10 191.74 0.25							
		(SM) SILTY SAND, some gravel; reddish brown; moist									
		- trace rootlets between 0.61 m and 0.69 m			1	DO		ND		PHCs, BTEX, Metals	
1											
2		- gravel seam between 2.11 m and 2.13 m			2	DO		ND			Bentonite
3		- trace gravel between 3.05 m and 6.1 m			3	DO		ND			
4	Direct Push 83 mm Dual Tube										
5					4	DO		ND		pH	Silica Sand
6		- some gravel, wet below 6.1 m									
					5	DO				PHCs, VOCs	Screen
7											
					6	DO					
8		*CONTINUED NEXT PAGE*									

DEPTH SCALE

1 : 40

LOGGED: BH

CHECKED: PS

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PROJECT: CA0053504.3959

LOCATION: N 4776202.00; E 654620.00

RECORD OF BOREHOLE: BH/MW3

BORING DATE: May 22, 2025

DRILL RIG: Geoprobe 7822DT (Direct)

SHEET 2 OF 2

DATUM: Geodetic

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: BLOWS/0.3m	HEADSPACE COMBUSTIBLE VAPOUR CONCENTRATIONS [PPM] ⊕ ND = Not Detected (100 200 300 400) / HEADSPACE ORGANIC VAPOUR CONCENTRATIONS [PPM] □ ND = Not Detected (100 200 300 400)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT Wp W Wl (10 20 30 40)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
8		*--- CONTINUED FROM PREVIOUS PAGE ---*									
		(SM) SILTY SAND, some gravel; reddish brown; moist		183.76	6	DO		ND			Screen
		END OF BOREHOLE		8.23							
9		NOTE(S):									
		1. Water in well encountered at a depth of 2.13 m during drilling.									
		2. Cave to 7.32 m, re-drill to monitoring well install depth									
10											
11											
12											
13											
14											
15											
16											

DEPTH SCALE

1 : 40

LOGGED: BH

CHECKED: PS

PROJECT: CA0053504.3959

LOCATION: N 4776217.20; E 654609.60

RECORD OF BOREHOLE: BH4

SHEET 1 OF 1

BORING DATE: May 22, 2025

DATUM: Geodetic

DRILL RIG: Geoprobe 7822DT (Direct)

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE: DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: BLOWS/0.3m	HEADSPACE COMBUSTIBLE VAPOUR CONCENTRATIONS [PPM] ⊕ ND = Not Detected (100 200 300 400) / HEADSPACE ORGANIC VAPOUR CONCENTRATIONS [PPM] □ ND = Not Detected (100 200 300 400)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT Wp W Wl (10 20 30 40)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		192.12							
0	Direct Push / Macro Core	ASPHALT		0.00							
		FILL - (GP) GRAVEL with sand; grey; moist		0.08 / 191.89							
		(SM) SILTY SAND, some gravel; reddish brown; moist		0.23	1	DO		ND		Metals, pH	
1											
2					2	DO		ND			
3		END OF BOREHOLE NOTE(S): Borehole dry upon completion of drilling.		189.07 / 3.05							
4											
5											
6											
7											
8											

DEPTH SCALE

1 : 40

LOGGED: BH

CHECKED: PS

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PROJECT: CA0053504.3959

LOCATION: N 4776204.50; E 654635.00

RECORD OF BOREHOLE: BH5

BORING DATE: May 22, 2025

DRILL RIG: Geoprobe 7822DT (Direct)

SHEET 1 OF 1

DATUM: Geodetic

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m	HEADSPACE COMBUSTIBLE VAPOUR CONCENTRATIONS [PPM] ⊕ ND = Not Detected (100 200 300 400) / HEADSPACE ORGANIC VAPOUR CONCENTRATIONS [PPM] □ ND = Not Detected (100 200 300 400)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT Wp W Wl (10 20 30 40)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		191.44							
0	Direct Push / Macro Core	FILL - (GP) GRAVEL and crushed ASPHALT, some sand; grey and black; wet		0.00	1	DO		ND			
				189.92							
1		(SM) SILTY SAND, some gravel, trace organics; reddish brown; moist		1.52	2A	DO		ND		Metals	
2					2B	DO		ND			
3				188.39							
		END OF BOREHOLE NOTE(S): Borehole dry upon completion of drilling.		3.05							
4											
5											
6											
7											
8											

DEPTH SCALE

1 : 40

LOGGED: BH

CHECKED: PS

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PROJECT: CA0053504.3959

LOCATION: N 4776211.60; E 654629.30

RECORD OF BOREHOLE: BH6

BORING DATE: May 22, 2025

DRILL RIG: Geoprobe 7822DT (Direct)

SHEET 1 OF 1

DATUM: Geodetic

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.3m	HEADSPACE COMBUSTIBLE VAPOUR CONCENTRATIONS [PPM] ⊕ ND = Not Detected (100 200 300 400) / HEADSPACE ORGANIC VAPOUR CONCENTRATIONS [PPM] □ ND = Not Detected (100 200 300 400)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT Wp W Wl (10 20 30 40)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		191.59							
0	Direct Push / Macro Core	FILL - (GP) GRAVEL, some sand; grey; wet		0.00 / 191.34							
		FILL - (SM) SILTY SAND, with clay, some gravel, trace organics; reddish brown to brown; moist, organic odour		0.25	1	DO		ND		Metals, PHCs, BTEX, PAHs, pH	
1											
2		(SM) SILTY SAND, some gravel, trace clay, trace rootlets; reddish brown; moist		189.86 / 1.73	2	DO		ND			
3		END OF BOREHOLE NOTE(S): Borehole dry upon completion of drilling.		188.54 / 3.05							
4											
5											
6											
7											
8											

DEPTH SCALE

1 : 40

LOGGED: BH

CHECKED: PS

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PROJECT: CA0053504.3959

LOCATION: N 4776215.30; E 654641.00

RECORD OF BOREHOLE: BH7

BORING DATE: May 22, 2025

DRILL RIG: Geoprobe 7822DT (Direct)

SHEET 1 OF 1

DATUM: Geodetic

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: BLOWS/0.3m	HEADSPACE COMBUSTIBLE VAPOUR CONCENTRATIONS [PPM] ⊕ ND = Not Detected (100 200 300 400) / HEADSPACE ORGANIC VAPOUR CONCENTRATIONS [PPM] □ ND = Not Detected (100 200 300 400)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT Wp W Wl (10 20 30 40)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		191.27							
0	Direct Push / Macro Core	FILL - (GP) GRAVEL, with sand, some silt, some clay; grey; moist		0.00 / 191.02							
		FILL - (CL) SILTY CLAY, some gravel, some sand, trace rootlets, asphalt pieces and slag; brown; moist		0.25 / 189.75	1	DO		ND		PHCs, BTEX, Metals, PAHs	
1											
2		(SM) SILTY SAND, some gravel; brown, moist - rust staining between 1.98 m and 2.06 m - wet/saturated below 2.06 m		1.52 / 188.22	2A	DO		ND			
					2B	DO		ND		pH	
3		END OF BOREHOLE NOTE(S): Borehole dry upon completion of drilling.		3.05							
4											
5											
6											
7											
8											

DEPTH SCALE

1 : 40

LOGGED: BH

CHECKED: PS

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PROJECT: CA0053504.3959

LOCATION: N 4776204.00; E 654645.30

RECORD OF BOREHOLE: BH8

SHEET 1 OF 1

BORING DATE: May 22, 2025

DATUM: Geodetic

DRILL RIG: Geoprobe 7822DT (Direct)

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.3m	HEADSPACE COMBUSTIBLE VAPOUR CONCENTRATIONS [PPM] ⊕ ND = Not Detected (100 200 300 400) / HEADSPACE ORGANIC VAPOUR CONCENTRATIONS [PPM] □ ND = Not Detected (100 200 300 400)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT Wp W Wl (10 20 30 40)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		191.30							
0	Direct Push / Macro Core	FILL - (GP) GRAVEL; grey; moist		0.00 / 191.15							
		FILL - (SM) SILTY SAND, some gravel, trace rootlets; reddish brown; moist		0.15							
1		- large root at 0.66 m			1	DO		ND		PHCs, BTEX, Metals, pH	
				189.45							
2		(SM) SILTY SAND, trace gravel; brown; moist - large root between 2.11 m and 2.16 m		1.85	2	DO		ND			
3				188.25							
		END OF BOREHOLE NOTE(S): Borehole dry upon completion of drilling.		3.05							
4											
5											
6											
7											
8											

DEPTH SCALE

1 : 40

LOGGED: BH

CHECKED: PS

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PROJECT: CA0053504.3959

LOCATION: N 4776205.70; E 654607.70

RECORD OF BOREHOLE: BH9

SHEET 1 OF 1

BORING DATE: May 22, 2025

DATUM: Geodetic

DRILL RIG: Geoprobe 7822DT (Direct)

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: BLOWS/0.3m	HEADSPACE COMBUSTIBLE VAPOUR CONCENTRATIONS [PPM] ⊕ ND = Not Detected (100 200 300 400) / HEADSPACE ORGANIC VAPOUR CONCENTRATIONS [PPM] □ ND = Not Detected (100 200 300 400)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT Wp W Wl (10 20 30 40)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		PAVEMENT SURFACE		192.32							
0	Direct Push / Macro Core	ASPHALT		0.00							
		FILL - (GP) GRAVEL, with sand; grey, moist		0.13	1A	DO		ND		Metals, PAHs	
		- trace cinder/slag between 0.53 m and 0.61 m		191.71							
1		(SM) SILTY SAND, some gravel, trace clay; reddish brown; moist - slight black staining between 0.61 m and 0.66 m		0.61	1B	DO		ND			
				190.80							
		END OF BOREHOLE NOTE(S): Borehole dry upon completion of drilling.		1.52							
2											
3											
4											
5											
6											
7											
8											

DEPTH SCALE

1 : 40

LOGGED: BH

CHECKED: PS

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PROJECT: CA0053504.3959

LOCATION: N 4776209.80; E 654638.90

RECORD OF BOREHOLE: BH10

BORING DATE: May 22, 2025

DRILL RIG: Geoprobe 7822DT (Direct)

SHEET 1 OF 1

DATUM: Geodetic

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: BLOWS/0.3m	HEADSPACE COMBUSTIBLE VAPOUR CONCENTRATIONS [PPM] ⊕ ND = Not Detected (100 200 300 400) / HEADSPACE ORGANIC VAPOUR CONCENTRATIONS [PPM] □ ND = Not Detected (100 200 300 400)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT Wp W Wl (10 20 30 40)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		191.32							
0	Direct Push / Macro Core	FILL - (GP) GRAVEL, trace rootlets; grey; moist		0.00 / 191.02							
		FILL - (SM) SILTY SAND, some gravel, trace rootlets, trace crushed asphalt; reddish brown; moist		0.30	1	DO		ND		Metals, EC, SAR	
1											
2		(SM) SILTY SAND, some gravel, trace clay; reddish brown, moist		189.54 / 1.78	2	DO		ND			
3		END OF BOREHOLE NOTE(S): Borehole dry upon completion of drilling.		188.27 / 3.05							
4											
5											
6											
7											
8											

DEPTH SCALE

1 : 40

LOGGED: BH

CHECKED: PS

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PROJECT: CA0053504.3959

LOCATION: N 4776207.10; E 654625.80

RECORD OF BOREHOLE: BH11

BORING DATE: May 22, 2025

DRILL RIG: Geoprobe 7822DT (Direct)

SHEET 1 OF 1

DATUM: Geodetic

HAMMER TYPE: AUTOMATIC

DEPTH SCALE METRES	BORING METHOD	DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (m)	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: BLOWS/0.3m	HEADSPACE COMBUSTIBLE VAPOUR CONCENTRATIONS [PPM] ⊕ ND = Not Detected (100 200 300 400) / HEADSPACE ORGANIC VAPOUR CONCENTRATIONS [PPM] □ ND = Not Detected (100 200 300 400)	HYDRAULIC CONDUCTIVITY, k, cm/s (10^{-6} 10^{-5} 10^{-4} 10^{-3}) / WATER CONTENT PERCENT Wp W Wl (10 20 30 40)	ADDITIONAL LAB. TESTING	PIEZOMETER OR STANDPIPE INSTALLATION
		GROUND SURFACE		191.78							
0	Direct Push / Macro Core	FILL - (GP) GRAVEL, with crushed asphalt; grey/black; moist		0.00	1	DO		ND		Metals, PAHs, EC, SAR	
				191.50							
		FILL - SILT, SAND, CLAY, GRAVEL; black staining; moist, organic odour		0.28							
				191.25							
1		(SM) SILTY SAND, some gravel; reddish brown, moist		0.53	2	DO		ND		Metals, PAHs	
				190.26							
		END OF BOREHOLE NOTE(S): Borehole dry upon completion of drilling.		1.52							
2											
3											
4											
5											
6											
7											
8											

DEPTH SCALE

1 : 40

LOGGED: BH

CHECKED: PS

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APPENDIX D

Certificates of Analysis

APPENDIX E

Remediation

wsp.com