PATERSON GROUP

Phase II – Environmental Site Assessment

560 Hazeldean Road

Ottawa, Ontario

Prepared for Double Deck Regional Inc.

c/o Regional Group

Report: PE5304-2

July 15, 2025

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EXECUTIVE SUMMARY

Assessment

A Phase II ESA was carried out for the property addressed 560 Hazeldean Road, in the City of Ottawa, Ontario. The purpose of the Phase II ESA was to address the potentially contaminating activities (PCAs) that were identified during the Phase I ESA and were considered to result in areas of potential environmental concern (APECs) on the Phase II Property.

The initial subsurface investigation for this assessment was conducted on December 21, 2020, and consisted of drilling seven boreholes (BH1-20 to BH7-20) across the Phase II Property. A supplemental investigation was conducted on May 29 and May 30, 2025, and consisted of drilling five boreholes (BH1-25 to BH5-25) across the Phase II Property. The boreholes were advanced to depths ranging from approximately 3.65 m to 19.84 m below the existing ground surface and terminated within the grey silty clay overburden. Upon completion, five of the boreholes (BH2-20, BH6-20, BH7-20, BH2B-25, and BH3-25) were instrumented with groundwater monitoring wells in order to access the water table.

In general, the subsurface soil profile encountered at the borehole locations consists of a thin layer of topsoil on top of stiff, brown, native clayey silt with sand, underlain by firm, grey, silty clay to clayey silt. Bedrock was not encountered in any of the borehole locations at the time of the field drilling program, however, a dynamic cone penetration test was carried out at BH2A-25 and BH5-25 which encountered practical refusal on the inferred bedrock surface at depths of 19.84 m and 17.88 m below ground surface, respectively. The groundwater table beneath the Phase II Property was encountered within the overburden during the June 2025 sampling event at a depth of approximately 0.61 m below ground surface.

Four soil samples were submitted for laboratory analysis of BTEX, PHCs (F_1-F_4), PAHs, and/or PCB parameters. The test results indicated that all detected parameter concentrations comply with the selected MECP Table 3 Coarse-Grained Residential Soil Standards.

Four groundwater samples were submitted for laboratory analysis of BTEX, PHC (F_1-F_4), PAHs, and PCB parameters. The test results indicated that no parameter concentrations were detected in any of the groundwater samples analyzed above the laboratory method detection limits. The results comply with the selected MECP Table 3 Non-Potable Groundwater Standards.

Recommendations

Monitoring Wells

If the groundwater monitoring wells installed on-site are not going to be used in the future, or will be destroyed during future construction activities, then they must be decommissioned in accordance with O. Reg. 903/90 (Ontario Water Resources Act). Further information can be provided upon request in this regard.

It is our recommendation that the monitoring wells currently be maintained for future sampling purposes, until such a time when future site excavation activities have commenced. The monitoring wells will be registered with the MECP under this regulation.

1.0 INTRODUCTION

At the request of Double Deck Regional Inc (c/o Regional Group), Paterson Group (Paterson) carried out a Phase II – Environmental Site Assessment (Phase II ESA) for the property addressed 560 Hazeldean Road, in the City of Ottawa, Ontario (the Phase II Property).

The purpose of this Phase II ESA has been to address the areas of potential environmental concern (APECs) identified on the Phase II Property as a result of the findings of the Phase I ESA.

1.1 Site Description

Address:	560 Hazeldean Road, Ottawa, Ontario.
Location:	The Phase II Property is situated on the south side of Hazeldean Road, approximately 150 m east of Mantra Street, in the City of Ottawa, Ontario. Refer to Figure 1 – Key Plan, for the site location context.
Latitude and Longitude:	45° 17' 21.0" N, 75° 54' 01.6" W.

Site Description:

Configuration:	Irregular.
Site Area:	8.65 hectares (approximate).
Zoning:	AG – Agricultural Zone.
Current Uses:	The Phase II Property is currently utilized for commercial purposes and is occupied by a golf driving range and pro shop.
Services:	The Phase II Property and the surrounding properties are serviced with municipal sewer and water infrastructure.

1.2 Property Ownership

The Phase II Property is currently owned by Lisa Haime. Paterson was retained to complete this Phase II ESA by Ms. Stefanie Kaminski of Regional Group, whose offices can be contacted via telephone at 613-230-2100.

1.3 Applicable Site Condition Standards

The site condition standards for the subject property were obtained from Table 3 and Table 9 of the document entitled, *"Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act"*, prepared by the Ministry of the Environment, Conservation and Parks (MECP), and dated April 15, 2011. The selected MECP standards are based on the following considerations:

- ❒ Generic Site Condition Standards for Use within 30 m of a Water Body (Table 9 Applies).
- ❒ Generic Site Condition Standards for Use beyond 30 m of a Water Body (Table 3 Applies).
- ❒ Coarse-Grained Soil Conditions.
- ❒ Non-Potable Groundwater Conditions.
- ❒ Residential Land Use.

The residential standards were selected based on the proposed future land use of the Phase II Property. Grain size analysis was not conducted as part of this assessment, and as such, the coarse-grained soil standards were selected as a conservative approach.

2.0 BACKGROUND INFORMATION

2.1 Physical Setting

The Phase II Property is occupied by a one-storey commercial retail building, located within the northwestern portion of the site, and is currently utilized as a golf driving range pro shop. The remainder of the property is largely landscaped with grassed lawns and occasional mature trees, in addition to a small asphalt-covered vehicle parking lot which is present adjacent to the building.

The Phase I Property is considered to be slightly below grade with respect to Hazeldean Road, as well as the adjacent properties. The site topography is relatively flat, whereas the regional topography slopes very gently down towards the east, in the general direction of the Carp River.

Water drainage on the subject site occurs primarily via infiltration throughout the property, as well as via surface run-off towards a drainage ditch present along Hazeldean Road. No ponded water, stressed vegetation, or any other indications of potential sub-surface contamination were observed on-site at the time of the site inspection.

3.0 SCOPE OF INVESTIGATION

3.1 Overview of Site Investigation

The initial subsurface investigation for this assessment was conducted on December 21, 2020, and consisted of drilling seven boreholes (BH1-20 to BH7-20) across the Phase II Property. A supplemental investigation was conducted on May 29 and May 30, 2025, in conjunction with a geotechnical investigation, and consisted of drilling five boreholes (BH1-25 to BH5-25) across the Phase II Property.

The boreholes were advanced to depths ranging from approximately 3.65 m to 19.84 m below the existing ground surface and terminated within the overburden layer grey silty clay. Upon completion, five of the boreholes (BH2-20, BH6-20, BH7-20, BH2B-25, and BH3-25) were instrumented with groundwater monitoring wells in order to access the water table.

3.2 Media Investigated

During the course of this subsurface investigation, soil and groundwater samples were obtained from the Phase II Property and submitted for laboratory analysis. The rationale for sampling and analyzing these media is based on the contaminants of potential concern identified in the Phase I ESA. The contaminants of potential concern for the soil and groundwater on the Phase II Property include the following:

- ❒ Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX).
- ❒ Petroleum Hydrocarbons, fractions 1 – 4 (PHCs F_1-F_4).
- ❒ Polycyclic Aromatic Hydrocarbons (PAHs).
- ❒ Polychlorinated Biphenyls (PCBs).

These CPCs have the potential to be present in the soil matrix and/or the groundwater situated beneath the Phase II Property.

3.3 Phase I ESA Conceptual Site Model

Geological and Hydrogeological Setting

Based on the available geological mapping information, the bedrock within the area of the Phase I Property consists of interbedded limestone and dolomite of the Gull River Formation, whereas the surficial geology consists of offshore marine sediments (clay and silt) with an overburden thickness ranging from approximately 5 m to 10 m.

Groundwater is known to be encountered within the overburden and flow in an easterly direction towards the Carp River.

Water Bodies and Areas of Natural and Scientific Interest

No water bodies or areas of natural and scientific interest are present on the Phase II Property.

The nearest water body with respect to the Phase II Property is the Carp River, located approximately 20 m to the east.

Drinking Water Wells

Based on the availability of municipal services, no potable groundwater wells are anticipated to be present within the Phase I Study Area.

Existing Buildings and Structures

The Phase II Property is currently occupied by a one-storey commercial building, currently utilized as a golf driving range pro shop. The building was constructed circa 2001 and has not changed significantly since that time.

Current and Future Property Use

The Phase II Property is currently utilized for commercial land use purposes.

It is our understanding that the Phase II Property is to be redeveloped with a low-density residential subdivision in the near future.

Since the proposed land use is considered to be more sensitive than the existing use, a record of site condition (RSC) will be required to be filed with the MECP.

Neighbouring Land Use

The surrounding lands within the Phase I Study Area consist largely of residential and commercial properties. Current land use is depicted on Drawing PE5304-2R – Surrounding Land Use Plan, in the Figures section of this report.

Potentially Contaminating Activities and Areas of Potential Environmental Concern

Based on the findings of the Phase I ESA, two potentially contaminating activities (PCAs), considered to result in areas of potential environmental concern (APECs), were identified on the Phase II Property.

APEC #1 – The presence of two (2) aboveground fuel storage tanks, located in the northwestern portion of the Phase I Property, adjacent to the south side of the subject building.

APEC #2 – The presence of a pole-mounted electrical transformer, located in the northwestern portion of the Phase I Property, adjacent to the main vehicle parking lot.

No other existing or historical off-site PCAs were identified on properties situated within the Phase I Study Area.

Contaminants of Potential Concern

The contaminants of potential concern (CPCs) associated with the aforementioned APECs are considered to be:

- ❒ Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX).
- ❒ Petroleum Hydrocarbons, fractions 1 – 4 (PHCs F_1-F_4).
- ❒ Polycyclic Aromatic Hydrocarbons (PAHs).
- ❒ Polychlorinated Biphenyls (PCBs).

These CPCs have the potential to be present in the soil matrix and/or the groundwater situated beneath the Phase II Property.

Assessment of Uncertainty and/or Absence of Information

The information available for review as part of the preparation of the Phase I ESA is considered to be sufficient to conclude that there are PCAs and APECs associated with the Phase II Property.

The presence of any PCAs was confirmed by a variety of independent sources, and as such, the conclusions of this report are not affected by uncertainty which may be present with respect to the individual sources.

3.4 Deviations from the Sampling and Analysis Plan

No deviations from the Sampling and Analysis were made during the course of this Phase II ESA.

3.5 Physical Impediments

No physical impediments were encountered during the course of the field drilling program.

4.0 INVESTIGATION METHOD

4.1 Subsurface Investigation

The initial subsurface investigation for this assessment was conducted on December 21, 2020, and consisted of drilling seven boreholes (BH1-20 to BH7-20) across the Phase II Property. A supplemental investigation was conducted on May 29 and May 30, 2025, and consisted of drilling five boreholes (BH1-25 to BH5-25) across the Phase II Property.

The boreholes were advanced to depths ranging from approximately 3.65 m to 19.84 m below the existing ground surface and terminated within the overburden layer grey silty clay. Upon completion, five of the boreholes (BH2-20, BH6-20, BH7-20, BH2B-25, and BH3-25) were instrumented with groundwater monitoring wells in order to access the water table.

Under the full-time supervision of Paterson personnel, the boreholes were drilled using a low-clearance drill rig provided by George Downing Estate Drilling of Hawkesbury, Ontario. The locations of the boreholes are illustrated on "Drawing PE5304-3 – Test Hole Location Plan", appended to this report.

4.2 Soil Sampling

Soil sampling protocols were followed using the MECP document entitled, *"Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario"*, dated May 1996.

The samples were recovered using a stainless-steel split spoon, while wearing protective gloves (changed after each sample), and immediately placed into plastic bags. If significant contamination was encountered, the samples were instead placed into glass jars. Sampling equipment was routinely washed in soapy water and rinsed with methylhydrate after each split spoon to prevent any cross contamination of the samples. The samples were also stored in coolers to reduce analyte volatilization during transportation.

A total of 59 soil samples were obtained from the boreholes by means of auger and split spoon sampling. The depths at which auger, split spoon, and rock core samples were obtained from the boreholes are shown as "**AU**" and "**SS**" respectively, on the Soil Profile and Test Data Sheets, appended to this report.

4.3 Field Screening Measurements

All soil samples collected were subjected to a preliminary screening procedure, which included visual screening for colour and evidence of metals, as well as soil vapour screening with a Photo Ionization Detector.

The recovered soil samples were placed immediately into airtight plastic bags with nominal headspace. All lumps of soil inside the bags were broken by hand, and the soil was allowed to come to room temperature prior to conducting the vapour survey, ensuring consistency of readings between samples. To measure the soil vapours, the analyzer probe was inserted into the nominal headspace above the sample. The sample was then agitated and manipulated gently by hand as the measurement was taken. The peak reading registered within the first 15 seconds was recorded as the vapour measurement. The parts per million (ppm) scale was used to measure concentrations of organic vapours.

The results of the vapour survey are presented on the Soil Profile and Test Data Sheets, appended to this report.

4.4 Groundwater Monitoring Well Installation

Five groundwater monitoring wells were installed on the Phase II Property as part of this subsurface investigation. These monitoring wells were constructed using 50 mm diameter Schedule 40 threaded PVC risers and screens. A sand pack consisting of silica sand was placed around the screen with a bentonite seal placed above to minimize cross-contamination. A summary of the monitoring well construction details are listed below in Table 1 as well as on the Soil Profile and Test Data Sheets provided in Appendix 1.

Upon completion, the groundwater monitoring wells were developed using a dedicated inertial lift pump, with a minimum of three well volumes being removed from the wells at the time of installation, until the appearance of the water was noted to have stabilized. In addition, the ground surface elevations of each borehole were subsequently surveyed with respect to a known geodetic elevation.

Table 1
Monitoring Well Construction Details

Well ID	Ground Surface Elevation (m ASL)	Total Depth (m BGS)	Screened Interval (m BGS)	Sand Pack (m BGS)	Bentonite Seal (m BGS)	Casing Type
BH2-20	95.30	3.65 m	1.53-3.05 m	1.27-3.05 m	0.18-1.27 m	Flushmount
BH6-20	95.95	3.65 m	1.53-3.05 m	1.25-3.05 m	0.18-1.25 m	Flushmount
BH7-20	96.00	6.55 m	1.53-3.05 m	1.22-3.05 m	0.13-1.22 m	Flushmount
BH2B-25	95.02	4.57 m	1.83-4.57 m	1.27-4.57 m	0.91-1.27 m	Stick-Up
BH3-25	95.40	4.05 m	1.00-4.05 m	0.91-1.00 m	0.61-0.91 m	Flushmount

4.5 Field Measurement of Water Quality Parameters

Groundwater monitoring and sampling were initially conducted on-site on January 4, 2021. At that time, only groundwater level measurements were taken from the monitoring wells and no other water quality parameters were measured.

Supplemental rounds of groundwater monitoring and sampling were more recently conducted on April 15 and June 6, 2025. During the development and stabilization of the monitoring well installed in BH3-25, select water quality parameters were measured using a multi-reader probe device. The stabilized field parameter values are summarized below in Table 2.

Table 2
Measurement of Water Quality Parameters

April 15, 2025			
Well ID	**Temperature (˚C)**	**Conductivity (µS)**	**pH (Units)**
BH2-20	Could Not Locate Monitoring Well During April 2025 Sampling Event		
BH6-20	Could Not Locate Monitoring Well During April 2025 Sampling Event		
BH7-20	4.6	947	6.32
June 6, 2025			
Well ID	**Temperature (˚C)**	**Conductivity (µS)**	**pH (Units)**
BH2-20	Could Not Locate Monitoring Well During June 2025 Sampling Event		
BH6-20	Parameters not Measured at this Location During June 2025 Sampling Event		
BH7-20	Parameters not Measured at this Location During June 2025 Sampling Event		
BH2A-25	Parameters not Measured at this Location During June 2025 Sampling Event		
BH3-25	14.7	950	6.97

4.6 Groundwater Sampling

Groundwater sampling protocols were followed using the MECP document entitled, *"Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario"*, dated May 1996.

Standing water was purged from each monitoring well prior to the recovery of the groundwater samples using dedicated sampling equipment. The samples were then stored in coolers to reduce possible analyte volatilization during their transportation. Further details of our standard operating procedure for groundwater sampling are provided in the Sampling and Analysis Plan, appended to this report.

4.7 Analytical Testing

The following soil and groundwater samples were submitted for laboratory analysis:

Table 3
Testing Parameters for Submitted Soil Samples

Sample ID	Sample Depth & Stratigraphic Unit	Parameters Analyzed					Rationale
		BTEX	PHCs (F_1-F_4)	PAHs	PCBs	pH	
BH1-20-AU1	0.00 – 0.61 m Clayey Silt	X	X	X	X	X	To assess for potential soil impacts resulting from the presence of a pole-mounted electrical transformer.
BH3-20-SS3	1.52 – 2.13 m Clayey Silt	X	X			X	For general coverage purposes
BH7-20-SS3	1.52 – 2.13 m Clayey Silt	X	X				To assess for potential soil impacts resulting from the presence of two aboveground fuel storage tanks.
DUP[1]	1.52 – 2.13 m Clayey Silt	X	X				For laboratory QA/QC purposes.
BH8-20-SS3[2]	1.52 – 2.13 m Clayey Silt	X	X				For laboratory QA/QC purposes.
BH3-25-AU1	0.08 – 0.46 m Clayey Silt	X	X	X	X		To assess for potential soil impacts resulting from the presence of a pole-mounted electrical transformer.
DUP-1[3]	0.08 – 0.46 m Clayey Silt	X	X	X	X		For laboratory QA/QC purposes.

1 – Duplicate sample of BH3-20-SS3
2 – Duplicate sample of BH7-20-SS3
3 – Duplicate sample of BH3-25-AU1

Table 4
Testing Parameters for Submitted Groundwater Samples

Sample ID	Screened Interval & Stratigraphic Unit	Parameters Analyzed				Rationale
		BTEX	PHCs (F_1-F_4)	PAHs	PCBs	
BH6-20-GW1	1.53 – 3.05 m Clayey Silt	X	X			For general coverage purposes.
BH7-20-GW1	1.53 – 3.05 m Clayey Silt	X	X			To assess for potential groundwater impacts resulting from the presence of two aboveground fuel storage tanks.
BH7-20-GW2	1.53 – 3.05 m Clayey Silt	X	X			To reassess for potential groundwater impacts resulting from the presence of two aboveground fuel storage tanks.
DUP1-25[1]	1.53 – 3.05 m Clayey Silt	X	X			For laboratory QA/QC purposes.
BH3-25-GW1	1.00 – 4.05 m Clayey Silt	X	X	X	X	To assess for potential groundwater impacts resulting from the presence of a pole-mounted electrical transformer.
DUP-June 6[2]	1.00 – 4.05 m Clayey Silt	X	X	X	X	For laboratory QA/QC purposes.

1 – Duplicate sample of BH7-20-GW2
2 – Duplicate sample of BH3-25-GW1

Paracel Laboratories (Paracel), of Ottawa, Ontario, performed the laboratory analysis on the samples submitted for analytical testing. Paracel is a member of the Standards Council of Canada/Canadian Association for Laboratory Accreditation (SCC/CALA) and is accredited and certified by the SCC/CALA for specific tests registered with the association.

4.8 Residue Management

All soil cuttings were retained on-site following the field program, while all purge water and equipment cleaning fluids were retained on-site.

4.9 Elevation Surveying

The ground surface elevations at each borehole location were surveyed using a GPS device by Paterson personnel and referenced to a geodetic datum.

4.10 Quality Assurance and Quality Control Measures

A summary of the quality assurance and quality control (QA/QC) measures, undertaken as part of this assessment, is provided in the Sampling and Analysis Plan in Appendix 1.

5.0 REVIEW AND EVALUATION

5.1 Geology

In general, the subsurface soil profile encountered at the borehole locations consists of a thin layer of topsoil or fill material (reworked native soil) on top of stiff, brown, native clayey silt with sand, underlain by firm, grey, silty clay to clayey silt. Bedrock was not encountered in any of the borehole locations at the time of the field drilling program, however, a dynamic cone penetration test was carried out at BH2A-25 and BH5-25 which encountered practical refusal on inferred bedrock at depths of 19.84 m and 17.88 m below ground surface, respectively.

Site geology details are provided in the Soil Profile and Test Data Sheets in Appendix 1.

5.2 Groundwater Elevations, Flow Direction, and Hydraulic Gradient

Groundwater levels beneath the Phase II Property were most recently measured on June 6, 2025, at the monitoring wells installed at BH6-20, BH7-20, BH2B-25 and BH3-25 using an electronic water level meter. The groundwater levels are summarized below in Table 5.

Table 5
Groundwater Level Measurements

Borehole Location	Ground Surface Elevation (m)	Water Level Depth (m below grade)	Water Level Elevation (m ASL)	Date of Measurement
BH6-20	95.95	1.39 m	94.56 m	June 6, 2025
BH7-20	96.00	0.55 m	95.45 m	
BH2B-25	95.02	0.97 m	94.05 m	
BH3-25	95.40	0.61 m	94.79 m	

The groundwater beneath the Phase II Property was encountered within the overburden during the June 2025 sampling event at depths ranging from approximately 0.55 m to 1.39 m below ground surface. No unusual visual observations were identified within the recovered groundwater samples at the time of the field sampling event.

Using the groundwater elevations recorded during the sampling event, groundwater contour mapping was completed as part of this assessment. According to the mapped contour data, illustrated on Drawing PE5304-3 – Test Hole Location Plan in the appendix, the groundwater flow beneath the Phase II Property was calculated to be in a northeasterly direction.

A horizontal hydraulic gradient of approximately 0.005 m/m was also calculated as part of this assessment. It should be noted that groundwater levels are expected to fluctuate throughout the year with seasonal variations.

5.3 Fine/Coarse Soil Texture

Grain size analysis was not completed as part of this investigation. As a result, the coarse-grained soil standards were chosen as a conservative approach.

5.4 Field Screening

Field screening of the soil samples collected during the drilling program resulted in organic vapour readings ranging from 0.4 ppm to 1.7 ppm, indicating that there is a negligible potential for the presence of volatile substances.

Field screening results of each individual soil sample are provided on the Soil Profile and Test Data Sheets appended to this report.

5.5 Soil Quality

As part of this assessment, four soil samples were submitted for laboratory analysis of BTEX, PHCs (F_1-F_4), PAHs, and/or PCB parameters. The results of the analytical testing are presented below in Tables 6 to 8, as well as on the laboratory certificates of analysis included in Appendix 1.

Table 6
Analytical Test Results – Soil
BTEX & PHCs (F_1-F_4)

Parameter	MDL (µg/g)	Soil Samples (ug/g)				MECP Table 3 Coarse-Grained Residential Soil Standards (µg/g)
		December 20, 2021			May 29, 2025	
		BH2-20-AU1	BH3-20-SS3	BH7-20-SS3	BH3-25-AU1	
		Sample Depth (m bgs)				
		0.00 – 0.61 m	1.52 – 2.13 m	1.52 – 2.13 m	0.08 – 0.46 m	
Benzene	0.02	nd	nd	nd	nd	0.21
Ethylbenzene	0.05	nd	nd	nd	nd	2
Toluene	0.05	nd	nd	nd	nd	2.3
Xylenes	0.05	nd	nd	nd	nd	3.1
PHCs F_1	7	nd	nd	nd	nd	55
PHCs F_2	4	nd	nd	nd	nd	98
PHCs F_3	8	nd	nd	nd	76	300
PHCs F_4	6	nd	nd	nd	177	2,800
PHCs F_4 gravimetric	50	nd	nd	nd	264	2,800

Notes:
- MDL – Method Detection Limit
- nd – not detected above the MDL
- **Bold and Underlined** – value exceeds selected MECP standards

All detected BTEX and PHC concentrations in the soil samples analyzed comply with the selected MECP Table 3 Coarse-Grained Residential Soil Standards.

Table 7
Analytical Test Results – Soil
PAHs

Parameter	MDL (µg/g)	Soil Samples (ug/g)		MECP Table 3 Coarse-Grained Residential Soil Standards (µg/g)
		December 21, 2021	May 29, 2025	
		BH2-20-AU1	BH3-25-AU1	
		Sample Depth (m bgs)		
		0.00 – 0.61 m	0.08 – 0.46 m	
Acenaphthene	0.02	nd	nd	7.9
Acenaphthylene	0.02	nd	nd	0.15
Anthracene	0.02	nd	nd	0.67
Benzo[a]anthracene	0.02	nd	nd	0.5
Benzo[a]pyrene	0.02	nd	nd	0.3
Benzo[b]fluoranthene	0.02	nd	nd	0.78
Benzo[g,h,i]perylene	0.02	nd	nd	6.6
Benzo[k]fluoranthene	0.02	nd	nd	0.78
Chrysene	0.02	nd	nd	7
Dibenzo[a,h]anthracene	0.02	nd	nd	0.1
Fluoranthene	0.02	nd	nd	0.69
Fluorene	0.02	nd	nd	62
Indeno [1,2,3-cd] pyrene	0.02	nd	nd	0.38
1-Methylnaphthalene	0.02	nd	nd	0.99
2-Methylnaphthalene	0.02	nd	nd	0.99
Methylnaphthalene (1&2)	0.04	nd	nd	0.99
Naphthalene	0.01	nd	nd	0.6
Phenanthrene	0.02	nd	nd	6.2
Pyrene	0.02	nd	nd	78

Notes:
- MDL – Method Detection Limit
- nd – not detected above the MDL
- **Bold and Underlined** – value exceeds selected MECP standards

No PAH concentrations were detected in the soil samples analyzed. The results comply with the selected MECP Table 3 Coarse-Grained Residential Soil Standards.

Table 8
Analytical Test Results – Soil
PCBs

Parameter	MDL (µg/g)	Soil Samples (ug/g)		MECP Table 3 Coarse-Grained Residential Soil Standards
		December 21, 2021	May 29, 2025	
		BH2-20-AU1	BH3-25-AU1	
		Sample Depth (m bgs)		
		0.00 – 0.61 m	0.08 – 0.46 m	
PCBs	0.05	nd	nd	0.35

Notes:
- MDL – Method Detection Limit
- nd – not detected above the MDL
- **Bold and Underlined** – value exceeds selected MECP standards

No PCB parameter concentrations were detected in the soil samples analyzed. The results comply with the selected MECP Table 3 Coarse-Grained Residential Soil Standards.

Table 9
Analytical Test Results – Soil
Inorganic Parameters

Parameter	MDL (µg/g)	Soil Samples (ug/g)		MECP Table 3 Coarse-Grained Residential Soil Standards
		December 21, 2021		
		BH2-20-AU1	BH3-20-SS3	
		Sample Depth (m bgs)		
		0.00 – 0.61 m	1.52 – 2.13 m	
pH	0.05	7.25	7.60	5.00 – 11.00

Notes:
- MDL – Method Detection Limit
- nd – not detected above the MDL
- **Bold and Underlined** – value exceeds selected MECP standards

All detected pH levels in the soil samples analyzed comply with the selected MECP Table 3 Coarse-Grained Residential Soil Standards.

5.6 Groundwater Quality

As part of this assessment, four groundwater samples were submitted for laboratory analysis of BTEX, PHCs (F_1-F_4), PAHs, and/or PCB parameters. The results of the analytical testing are presented below in Tables 10 to 12, as well as on the laboratory certificates of analysis included in Appendix 1.

Table 10
Analytical Test Results – Groundwater
BTEX & PHCs (F_1-F_4)

Parameter	MDL (µg/L)	Groundwater Samples (ug/L)				MECP Table 3 Non-Potable Groundwater Standards (µg/L)
		January 4, 2022		April 15, 2025	June 6, 2025	
		BH6-20-GW1	BH7-20-GW1	BH7-20-GW2	BH3-25-GW1	
		Screening Interval (m bgs)				
		1.53 – 3.05 m	1.53 – 3.05 m	1.53 – 3.05 m	1.00 – 4.05 m	
Benzene	0.5	nd	nd	nd	nd	44
Ethylbenzene	0.5	nd	nd	nd	nd	2,300
Toluene	0.5	nd	nd	nd	nd	18,000
Xylenes	0.5	nd	nd	nd	nd	4,200
PHCs F_1	25	nd	nd	nd	nd	750
PHCs F_2	100	nd	nd	nd	nd	150
PHCs F_3	100	nd	nd	nd	nd	500
PHCs F_4	100	nd	nd	nd	nd	500

Notes:
- MDL – Method Detection Limit
- nd – not detected above the MDL
- **Bold and Underlined** – value exceeds selected MECP standards

No BTEX or PHC parameter concentrations were detected above the laboratory method detection limits in any of the groundwater samples analyzed. The results comply with the MECP Table 3 Non-Potable Groundwater Standards.

Table 11
Analytical Test Results – Groundwater
PAHs

Parameter	MDL (µg/L)	Groundwater Samples (ug/L)	MECP Table 3 Non-Potable Groundwater Standards (µg/L)
		June 6, 2025	
		BH3-25-GW1	
		Screening Interval (m bgs)	
		1.00 – 4.05 m	
Acenaphthene	0.05	nd	600
Acenaphthylene	0.05	nd	1.8
Anthracene	0.01	nd	2.4
Benzo[a]anthracene	0.01	nd	4.7
Benzo[a]pyrene	0.01	nd	0.81
Benzo[b]fluoranthene	0.05	nd	0.75
Benzo[g,h,i]perylene	0.05	nd	0.2
Benzo[k]fluoranthene	0.05	nd	0.4
Chrysene	0.05	nd	1
Dibenzo[a,h]anthracene	0.05	nd	0.52
Fluoranthene	0.01	nd	130
Fluorene	0.05	nd	400
Indeno [1,2,3-cd] pyrene	0.05	nd	0.2
1-Methylnaphthalene	0.05	nd	1,800
2-Methylnaphthalene	0.05	nd	1,800
Methylnaphthalene (1&2)	0.10	nd	1,800
Naphthalene	0.05	nd	1,400
Phenanthrene	0.05	nd	580
Pyrene	0.01	nd	68

Notes:
- MDL – Method Detection Limit
- nd – not detected above the MDL
- **Bold and Underlined** – value exceeds selected MECP standards

No PAH parameter concentrations were detected above the laboratory method detection limits in any of the groundwater samples analyzed. The results comply with the MECP Table 3 Non-Potable Groundwater Standards.

Table 12
Analytical Test Results – Groundwater
PCBs

Parameter	MDL (µg/L)	Groundwater Samples (ug/L)	MECP Table 3 Potable Groundwater Standards (µg/L)
		June 6, 2025	
		BH3-25-GW1	
		Screening Interval (m bgs)	
		1.00 – 4.05 m	
PCBs (Total)	0.05	nd	7.8

Notes:
- MDL – Method Detection Limit
- nd – not detected above the MDL
- **Bold and Underlined** – value exceeds selected MECP standards

No PCB parameter concentrations were detected above the laboratory method detection limits in any of the groundwater samples analyzed. The results comply with the MECP Table 3 Non-Potable Groundwater Standards.

5.7 Quality Assurance and Quality Control Results

All samples submitted as part of this Phase II ESA were handled in accordance with the analytical protocols with respect to preservation method, storage requirement, and container type.

As per Subsection 47(3) of O. Reg. 153/04, as amended by the Environmental Protection Act, the certificates of analysis have been received for each sample submitted for laboratory analysis and have been appended to this report.

As per the Sampling and Analysis Plan, two duplicate soil samples were obtained during the 2020 field investigation from BH3-20-SS3 and BH7-20-SS3, respectively, and submitted for laboratory analysis of BTEX and PHC parameters. The relative percentage difference (RPD) calculations for the original and duplicate samples are provided below in Table 13.

Table 13
QA/QC Calculations – Soil

Parameter	MDL (µg/g)	BH3-20-SS3	DUP	RPD (%)	QA/QC Result (Target: <20% RPD)
Benzene	0.02	nd	nd	0	Meets Target
Ethylbenzene	0.05	nd	nd	0	Meets Target
Toluene	0.05	nd	nd	0	Meets Target
Xylenes	0.05	nd	nd	0	Meets Target
PHCs F_1	7	nd	nd	0	Meets Target
PHCs F_2	4	nd	nd	0	Meets Target
PHCs F_3	8	nd	nd	0	Meets Target
PHCs F_4	6	nd	nd	0	Meets Target
Parameter	**MDL (µg/g)**	**BH7-20-SS3**	**BH8-20-SS3**	**RPD (%)**	**QA/QC Result (Target: <20% RPD)**
Benzene	0.02	nd	nd	0	Meets Target
Ethylbenzene	0.05	nd	nd	0	Meets Target
Toluene	0.05	nd	nd	0	Meets Target
Xylenes	0.05	nd	nd	0	Meets Target
PHCs F_1	7	nd	nd	0	Meets Target
PHCs F_2	4	nd	nd	0	Meets Target
PHCs F_3	8	nd	nd	0	Meets Target
PHCs F_4	6	nd	nd	0	Meets Target

Notes:
- MDL – Method Detection Limit
- nd – not detected above the MDL

The RPD calculated for all parameters fell within of the acceptable range of 20%, and as a result, the data quality objectives outlined in the Sampling and Analysis Plan, appended to this report, are considered to have been met.

A third duplicate soil sample was obtained during the 2025 field investigation from BH3-25-AU1 and submitted for laboratory analysis of BTEX, PHC, PAH, and PCB parameters. The relative percentage difference (RPD) calculations for the original and duplicate samples are provided below in Table 14.

Table 14
QA/QC Calculations – Soil

Parameter	MDL (µg/g)	BH3-25-AU1	DUP-1	RPD (%)	QA/QC Result (Target: <20% RPD)
Benzene	0.02	nd	nd	0	Meets Target
Ethylbenzene	0.05	nd	nd	0	Meets Target
Toluene	0.05	nd	nd	0	Meets Target
Xylenes	0.05	nd	nd	0	Meets Target
PHCs F_1	7	nd	nd	0	Meets Target
PHCs F_2	4	nd	nd	0	Meets Target
PHCs F_3	8	76	33	0	Does Not Meet Target
PHCs F_4	6	177	86	0	Does Not Meet Target
PHCs $F_{4\ gravimetric}$	50	264	N/A	N/A	Does Not Meet Target
Acenaphthene	0.02	nd	nd	0	Meets Target
Acenaphthylene	0.02	nd	nd	0	Meets Target
Anthracene	0.02	nd	nd	0	Meets Target
Benzo[a]anthracene	0.02	nd	nd	0	Meets Target
Benzo[a]pyrene	0.02	nd	nd	0	Meets Target
Benzo[b]fluoranthene	0.02	nd	nd	0	Meets Target
Benzo[g,h,i]perylene	0.02	nd	nd	0	Meets Target
Benzo[k]fluoranthene	0.02	nd	nd	0	Meets Target
Chrysene	0.02	nd	nd	0	Meets Target
Dibenzo[a,h]anthracene	0.02	nd	nd	0	Meets Target
Fluoranthene	0.02	nd	nd	0	Meets Target
Fluorene	0.02	nd	nd	0	Meets Target
Indeno [1,2,3-cd] pyrene	0.02	nd	nd	0	Meets Target
1-Methylnaphthalene	0.02	nd	nd	0	Meets Target
2-Methylnaphthalene	0.02	nd	nd	0	Meets Target
Methylnaphthalene (1&2)	0.04	nd	nd	0	Meets Target
Naphthalene	0.01	nd	nd	0	Meets Target
Phenanthrene	0.02	nd	nd	0	Meets Target
Pyrene	0.02	nd	nd	0	Meets Target
PCBs (Total)	0.05	nd	nd	0	Meets Target

Notes:
- MDL – Method Detection Limit
- nd – not detected above the MDL

The RPD calculated for all but three parameters fell within of the acceptable range of 20%. This minor discrepancy is likely attributed to the non-homogenous nature of the fill material where the sample originated. Given that the majority of the parameters between the two samples were found to be non-detect, the data quality objectives outlined in the Sampling and Analysis Plan, appended to this report, are considered to have been met.

Similarly, a duplicate groundwater sample was obtained from sample BH7-20-GW2 and submitted for laboratory analysis of BTEX and PHC parameters. No parameter concentrations were identified in both the original and duplicate samples, and as a result, the data quality objectives outlined in the Sampling and Analysis Plan, appended to this report, are considered to have been met.

A second duplicate groundwater sample was obtained from sample BH3-25-GW1 and submitted for laboratory analysis of BTEX, PHC, PAH, and PCB parameters. No parameter concentrations were identified in both the original and duplicate samples, and as a result, the data quality objectives outlined in the Sampling and Analysis Plan, appended to this report, are considered to have been met.

Based on the results of the QA/QC analysis, the quality of the field data collected during this Phase II ESA is considered to be sufficient to meet the overall objectives of this assessment.

5.8 Phase II Conceptual Site Model

The following section has been prepared in accordance with the requirements of O. Reg. 153/04 amended by the Environmental Protection Act. Conclusions and recommendations are discussed in a subsequent section.

Site Description

Potentially Contaminating Activity and Areas of Potential Environmental Concern

As described in Section 2.2 of this report, the following PCAs, as defined by Table 2 of O. Reg. 153/04, are considered to result in APECs on the Phase II Property:

Table 15
Areas of Potential Environmental Concern

Area of Potential Environmental Concern	Location of APEC on Phase I Property	Potentially Contaminating Activity (Table 2 – O. Reg. 153/04)	Location of PCA (On-Site or Off-Site)	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, Soil, and/or Sediment)
APEC 1 Existing Aboveground Fuel Storage Tanks	Northwestern Portion of Phase I Property	*"Item 28: Gasoline and Associated Products Storage in Fixed Tanks"*	On-Site	BTEX PHCs F_1-F_4	Soil and Groundwater
APEC 2 Existing Pole-Mounted Electrical Transformer	Northwestern Portion of Phase I Property	*"Item 55: Transformer Manufacturing, Processing, and Use"*	On-Site	PHCs (F_1-F_4) PAHs PCBs	Soil and Groundwater

Contaminants of Potential Concern (CPCs)

The contaminants of potential concern (CPCs) associated with the aforementioned APECs are considered to be:

- ❒ Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX).
- ❒ Petroleum Hydrocarbons, fractions 1 – 4 (PHCs F_1-F_4).
- ❒ Polycyclic Aromatic Hydrocarbons (PAHs).
- ❒ Polychlorinated Biphenyls (PCBs).

These CPCs have the potential to be present in the soil matrix (and/or the groundwater situated beneath the Phase I Property.

Subsurface Structures and Utilities

Underground service locates were completed prior to the subsurface investigation, which identified underground water, sewer, and gas infrastructure beneath the Phase II Property.

Physical Setting

Site Stratigraphy

The stratigraphy of the Phase II Property generally consists of:

- ❒ Topsoil; extending to a depth of approximately 0.05 m to 0.25 m below ground surface.
- ❒ Fill Material (Reworked Native Soil); extending to a depth of approximately 0.46 m to 0.69 m below ground surface.
- ❒ Stiff, brown clayey silt with sand; extending to depths ranging from approximately 2.21 m to 3.05 m below ground surface.
- ❒ Firm to stiff, grey silty clay to clayey silt; extending to depths ranging from approximately 3.65 m to 19.84 m below ground surface (bottom of boreholes).

The site stratigraphy, from ground surface to the deepest aquifer or aquitard investigated, is provided in the Soil Profile and Test Data Sheets in Appendix 1.

Hydrogeological Characteristics

The groundwater beneath the Phase II Property was encountered within the overburden during the June 2025 sampling event at depths ranging from approximately 0.55 m to 1.39 m below ground surface. Based on the measured groundwater levels, the groundwater was calculated to flow in a northeasterly direction.

Approximate Depth to Bedrock

Bedrock was not encountered in any of the borehole locations at the time of the field drilling program, however, a dynamic cone penetration test was carried out at BH2A-25 and BH5-25 which encountered practical refusal on inferred bedrock at depths of 19.84 m and 17.88 m below ground surface, respectively.

Approximate Depth to Water Table

The groundwater beneath the Phase II Property was encountered within the overburden during the June 2025 sampling event at depths ranging from approximately 0.55 m to 1.39 m below ground surface.

Sections 41 and 43.1 of Ontario Regulation 153/04

Section 41 of the Regulation is considered to apply to the northeastern portion of the Phase II Property due to the presence of a body of water (the Carp River) situated within 30 m of the Phase II Property boundary. A 30 m buffer zone extending from the northeastern property line of the Phase II Property is therefore considered to be environmentally sensitive and subject to the MECP Table 9 standards. It should be noted that no APECs were identified within this buffer zone, and as such no environmental investigation was carried out in this area. The remainder of the Phase II Property beyond the 30 m buffer zone is considered to be subject to the MECP Table 3 standards.

Section 43.1 of the Regulation does not apply to the Phase II Property, since the bedrock is situated at depths greater than 2 m below ground surface and thus the site is not considered to be a shallow soil property.

Existing Buildings and Structures

The Phase I Property is currently occupied by a one-storey commercial building, currently utilized as a golf driving range pro shop. The building was constructed circa 2001 and has not changed significantly since that time.

Environmental Condition

Areas Where Contaminants are Present

Based on the findings of this assessment, no contaminated areas were identified on the Phase II Property.

6.0 CONCLUSIONS

Assessment

A Phase II ESA was carried out for the property addressed 560 Hazeldean Road, in the City of Ottawa, Ontario. The purpose of the Phase II ESA was to address the potentially contaminating activities (PCAs) that were identified during the Phase I ESA and were considered to result in areas of potential environmental concern (APECs) on the Phase II Property.

The initial subsurface investigation for this assessment was conducted on December 21, 2020, and consisted of drilling seven boreholes (BH1-20 to BH7-20) across the Phase II Property. A supplemental investigation was conducted on May 29 and May 30, 2025, and consisted of drilling five boreholes (BH1-25 to BH5-25) across the Phase II Property. The boreholes were advanced to depths ranging from approximately 3.65 m to 19.84 m below the existing ground surface and terminated within the grey silty clay overburden. Upon completion, five of the boreholes (BH2-20, BH6-20, BH7-20, BH2B-25, and BH3-25) were instrumented with groundwater monitoring wells in order to access the water table.

In general, the subsurface soil profile encountered at the borehole locations consists of a thin layer of topsoil on top of stiff, brown, native clayey silt with sand, underlain by firm, grey, silty clay to clayey silt. Bedrock was not encountered in any of the borehole locations at the time of the field drilling program, however, a dynamic cone penetration test was carried out at BH2A-25 and BH5-25 which encountered practical refusal on the inferred bedrock surface at depths of 19.84 m and 17.88 m below ground surface, respectively. The groundwater table beneath the Phase II Property was encountered within the overburden during the June 2025 sampling event at a depth of approximately 0.61 m below ground surface.

Four soil samples were submitted for laboratory analysis of BTEX, PHCs (F_1-F_4), PAHs, and/or PCB parameters. The test results indicated that all detected parameter concentrations comply with the selected MECP Table 3 Coarse-Grained Residential Soil Standards.

Four groundwater samples were submitted for laboratory analysis of BTEX, PHC (F_1-F_4), PAHs, and PCB parameters. The test results indicated that no parameter concentrations were detected in any of the groundwater samples analyzed above the laboratory method detection limits. The results comply with the selected MECP Table 3 Non-Potable Groundwater Standards.

Recommendations

Monitoring Wells

If the groundwater monitoring wells installed on-site are not going to be used in the future, or will be destroyed during future construction activities, then they must be decommissioned in accordance with O. Reg. 903/90 (Ontario Water Resources Act). Further information can be provided upon request in this regard.

It is our recommendation that the monitoring wells currently be maintained for future sampling purposes, until such a time when future site excavation activities have commenced. The monitoring wells will be registered with the MECP under this regulation.

7.0 STATEMENT OF LIMITATIONS

This Phase II – Environmental Site Assessment report has been prepared in general accordance with O.Reg. 153/04, as amended, and CSA Z769-00. The conclusions presented herein are based on information gathered from a limited sampling and testing program. The test results represent conditions at specific test locations at the time of the field program.

The client should be aware that any information pertaining to soils and all test hole logs are furnished as a matter of general information only and test hole descriptions or logs are not to be interpreted as descriptive of conditions at locations other than those of the test holes themselves.

Should any conditions be encountered at the Phase II Property and/or historical information that differ from our findings, we request that we be notified immediately in order to allow for a reassessment.

This report was prepared for the sole use of Double Deck Regional Inc (c/o Regional Group). Permission and notification from Double Deck Regional Inc (c/o Regional Group) and Paterson Group will be required prior to the release of this report to any other party.

Paterson Group Inc.

Nick Sullivan, B.Sc.

Mark D'Arcy, P.Eng., QP$_{ESA}$

Report Distribution:

- Double Deck Regional Inc (c/o Regional Group)
- Paterson Group Inc.

FIGURES

FIGURE 1 – KEY PLAN

DRAWING PE5304-1R – SITE PLAN

DRAWING PE5304-2R – SURROUNDING LAND USE PLAN

DRAWING PE5304-3 – TEST HOLE LOCATION PLAN

DRAWING PE5304-4 – ANALYTICAL TESTING PLAN – SOIL

DRAWING PE5304-4A – CROSS SECTION A-A' – SOIL

DRAWING PE5304-4B – CROSS SECTION B-B' – SOIL

DRAWING PE5304-5 – ANALYTICAL TESTING PLAN – GROUNDWATER

DRAWING PE5304-5A – CROSS SECTION A-A' – GROUNDWATER

DRAWING PE5304-5B – CROSS SECTION B-B' – GROUNDWATER

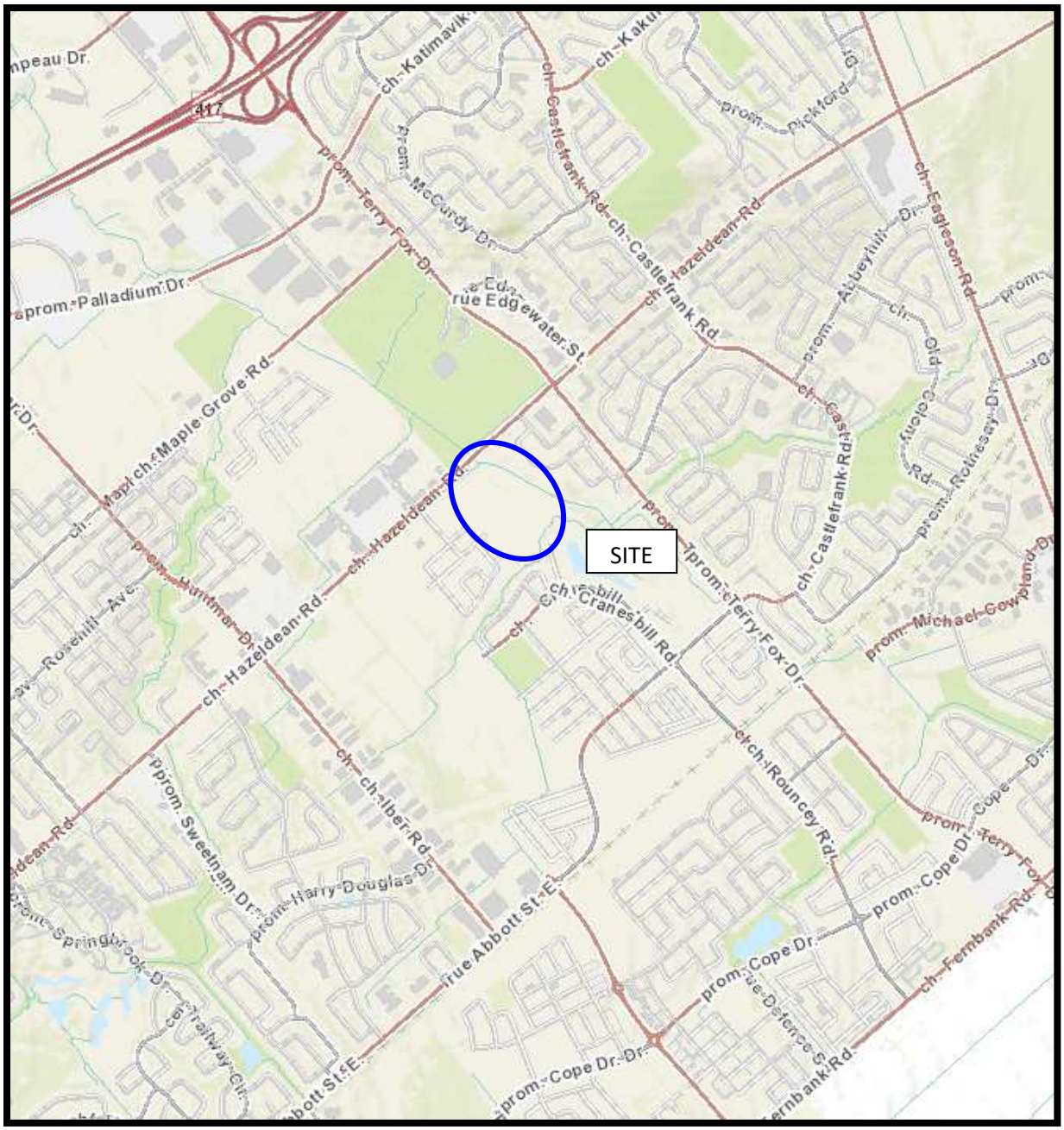
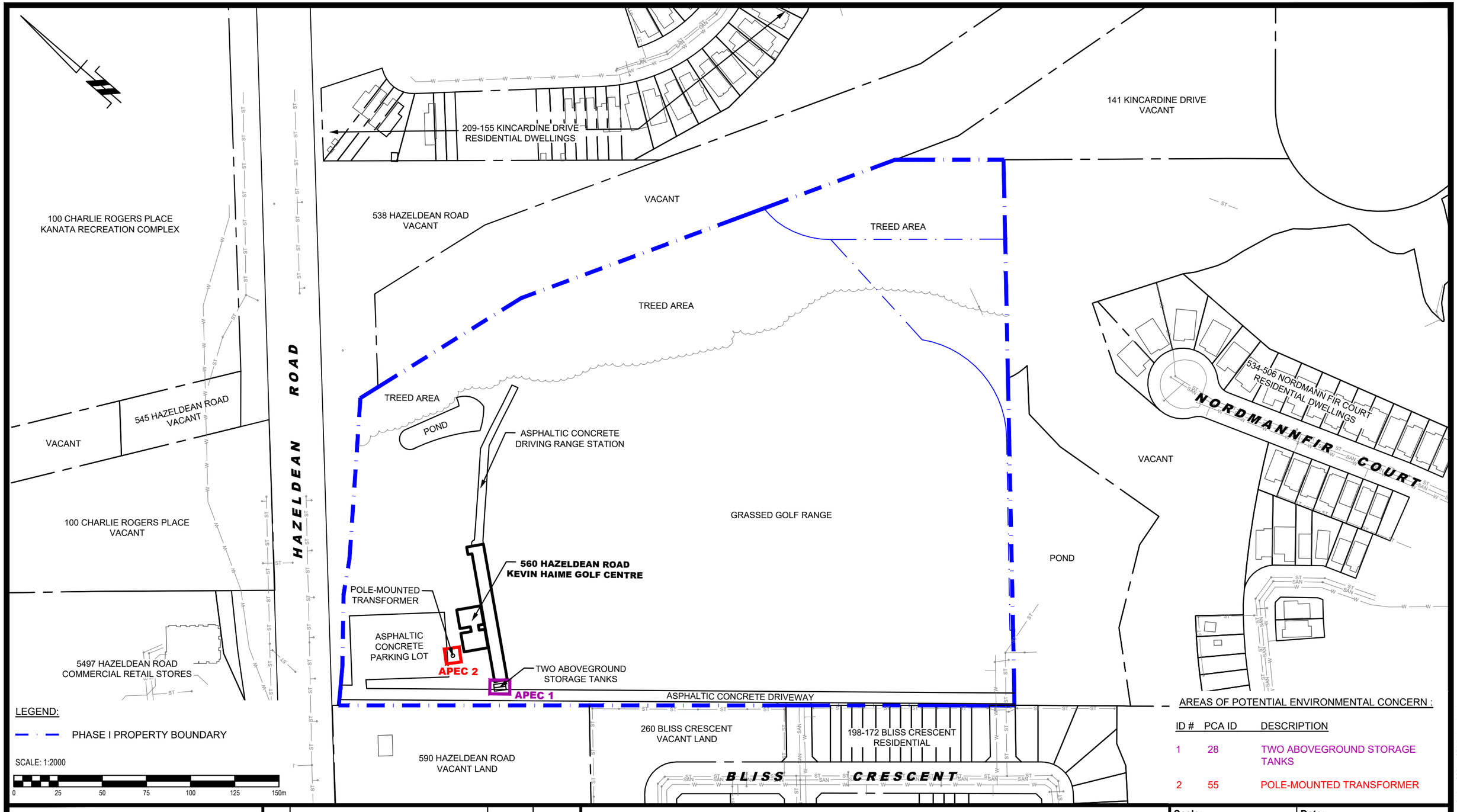


FIGURE 1

KEY PLAN

PATERSON GROUP



AREAS OF POTENTIAL ENVIRONMENTAL CONCERN :

ID #	PCA ID	DESCRIPTION
1	28	TWO ABOVEGROUND STORAGE TANKS
2	55	POLE-MOUNTED TRANSFORMER

PATERSON GROUP
9 AURIGA DRIVE
OTTAWA, ON
K2E 7T9
TEL: (613) 226-7381

NO.	REVISIONS	DATE	INITIAL

DOUBLE DECK INC. (C/O REGIONAL GROUP)
PHASE I - ENVIRONMENTAL SITE ASSESSMENT UPDATE
560 HAZELDEAN ROAD
OTTAWA, ONTARIO

Title: **SITE PLAN**

Scale: 1:2000	Date: 04/2025
Drawn by: YA	Report No.: PE5304-LET.01
Checked by: NS	Dwg. No.: PE5304-1R
Approved by: MSD	Revision No.:

11x17

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LEGEND:

PHASE I PROPERTY BOUNDARY

SCALE: 1:4000

0 50 100 150 200 250m

POTENTIALLY CONTAMINATING ACTIVITIES :

ID #	PCA ID	DESCRIPTION
1	28	TWO ABOVEGROUND STORAGE TANKS
2	55	POLE-MOUNTED TRANSFORMER

PATERSON GROUP
9 AURIGA DRIVE
OTTAWA, ON
K2E 7T9
TEL: (613) 226-7381

NO.	REVISIONS	DATE	INITIAL

DOUBLE DECK INC. (C/O REGIONAL GROUP)
PHASE I - ENVIRONMENTAL SITE ASSESSMENT UPDATE
560 HAZELDEAN ROAD
OTTAWA, ONTARIO

Title:
SURROUNDING LAND USE PLAN

Scale: 1:2000	Date: 04/2025
Drawn by: YA	Report No.: PE5304-LET.01
Checked by: NS	Dwg. No.: PE5304-2R
Approved by: MSD	Revision No.:

11x17

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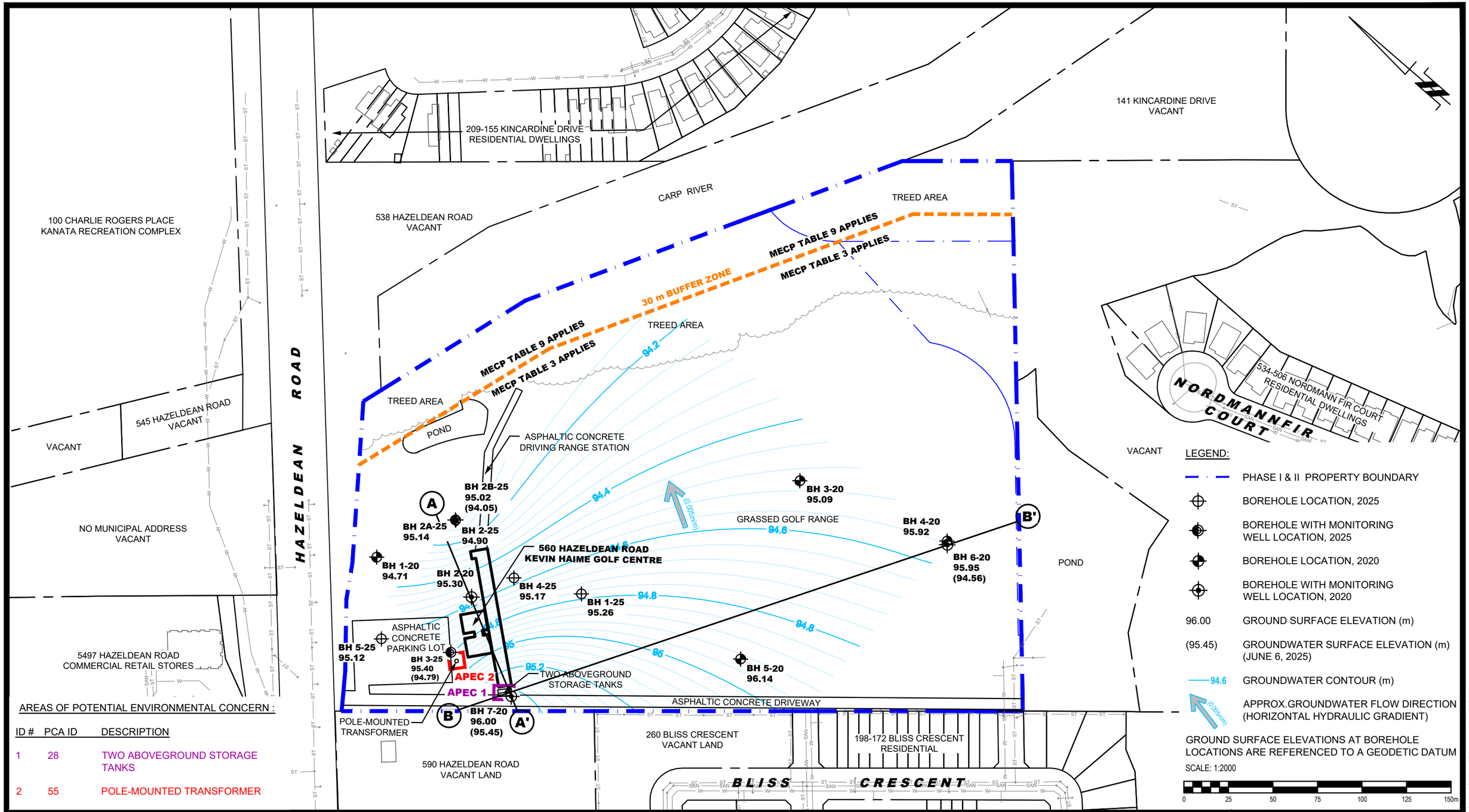

AREAS OF POTENTIAL ENVIRONMENTAL CONCERN :

ID #	PCA ID	DESCRIPTION
1	28	TWO ABOVEGROUND STORAGE TANKS
2	55	POLE-MOUNTED TRANSFORMER

LEGEND:

- PHASE I & II PROPERTY BOUNDARY
- BOREHOLE LOCATION, 2025
- BOREHOLE WITH MONITORING WELL LOCATION, 2025
- BOREHOLE LOCATION, 2020
- BOREHOLE WITH MONITORING WELL LOCATION, 2020
- 96.00 GROUND SURFACE ELEVATION (m)
- (95.45) GROUNDWATER SURFACE ELEVATION (m) (JUNE 6, 2025)
- 94.6 GROUNDWATER CONTOUR (m)
- (0.005m/m) APPROX.GROUNDWATER FLOW DIRECTION (HORIZONTAL HYDRAULIC GRADIENT)

GROUND SURFACE ELEVATIONS AT BOREHOLE LOCATIONS ARE REFERENCED TO A GEODETIC DATUM

SCALE: 1:2000

0 25 50 75 100 125 150m

PATERSON GROUP
9 AURIGA DRIVE
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K2E 7T9
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NO.	REVISIONS	DATE	INITIAL

DOUBLE DECK INC. (C/O REGIONAL GROUP)
PHASE II - ENVIRONMENTAL SITE ASSESSMENT
560 HAZELDEAN ROAD
OTTAWA, ONTARIO

Title:

TEST HOLE LOCATION PLAN

Scale: 1:2000	Date: 07/2025
Drawn by: YA	Report No.: PE5304-2
Checked by: NS	Dwg. No.: PE5304-3
Approved by: MSD	Revision No.:

11x17

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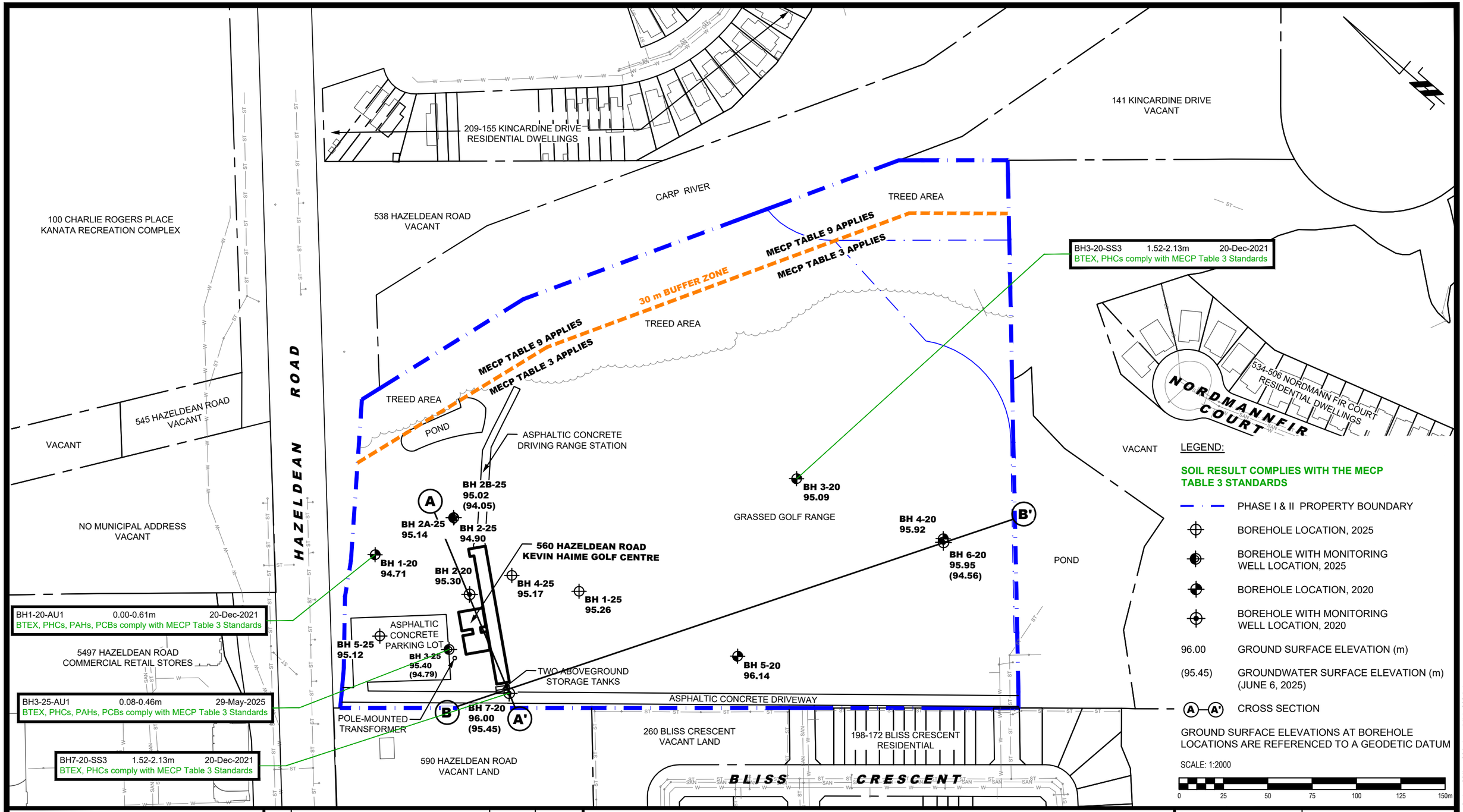

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NO.	REVISIONS	DATE	INITIAL

DOUBLE DECK INC. (C/O REGIONAL GROUP)
PHASE II - ENVIRONMENTAL SITE ASSESSMENT
560 HAZELDEAN ROAD
OTTAWA, ONTARIO

Title: **ANALYTICAL TESTING PLAN - SOIL (BTEX, PHCs, PAHs, PCBs)**

Scale: 1:2000	Date: 07/2025
Drawn by: YA	Report No.: PE5304-2
Checked by: NS	Dwg. No.: PE5304-4
Approved by: MSD	Revision No.:

11x17

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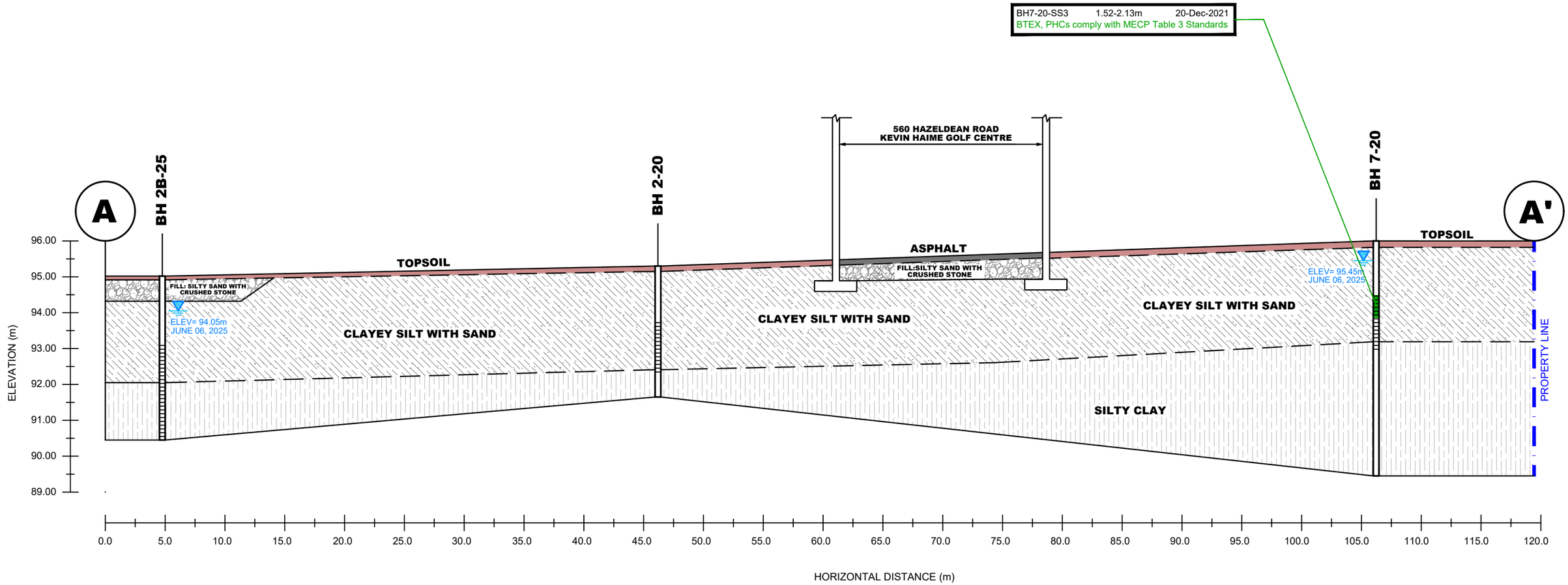

LEGEND:

SOIL RESULT COMPLIES WITH THE MECP TABLE 3 STANDARDS

PHASE I & II PROPERTY BOUNDARY

PATERSON GROUP
9 AURIGA DRIVE
OTTAWA, ON
K2E 7T9
TEL: (613) 226-7381

NO.	REVISIONS	DATE	INITIAL

DOUBLE DECK INC. (C/O REGIONAL GROUP)
PHASE II - ENVIRONMENTAL SITE ASSESSMENT
560 HAZELDEAN ROAD
OTTAWA, ONTARIO

Title: CROSS SECTION A-A' - SOIL (BTEX, PHCs, PAHs, PCBs)

Scale: AS SHOWN	Date: 07/2025
Drawn by: YA	Report No.: PE5304-2
Checked by: NS	Dwg. No.: PE5304-4A
Approved by: MSD	Revision No.:

11x17

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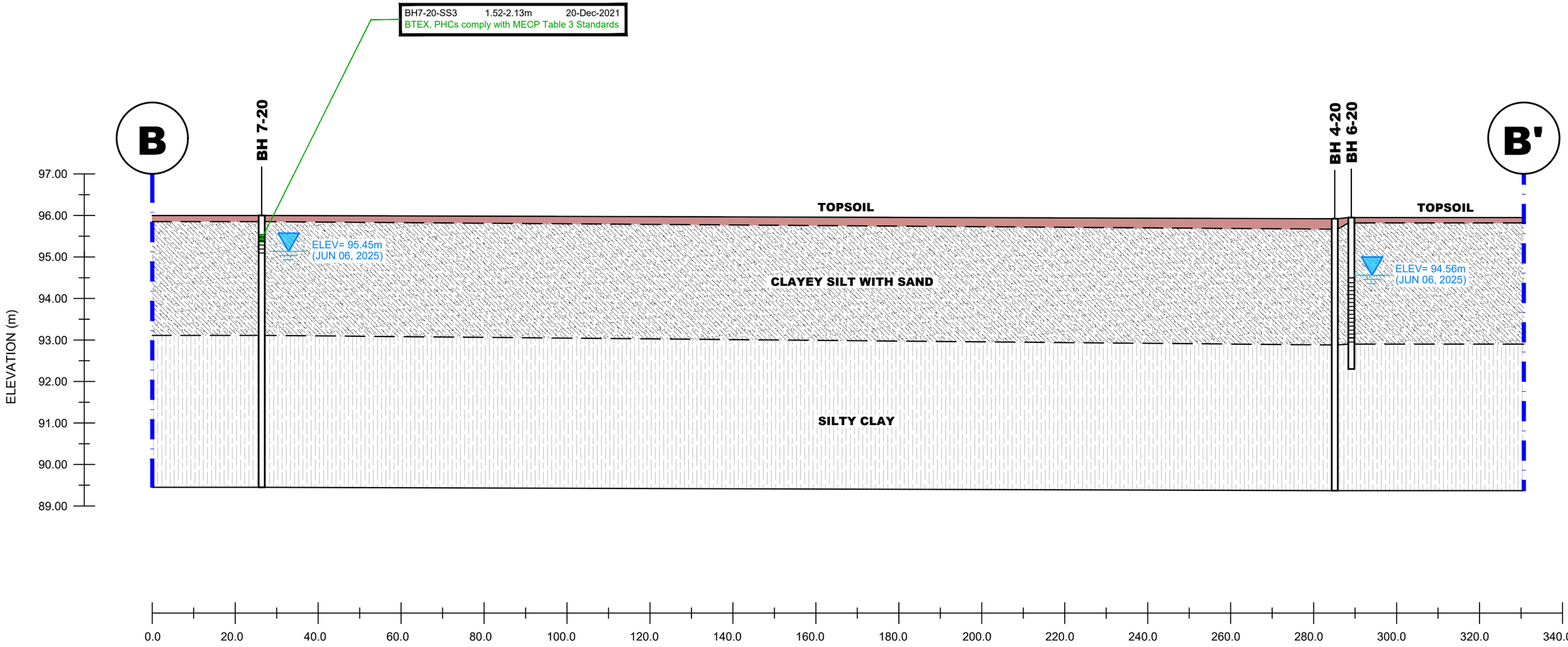

LEGEND:

SOIL RESULT COMPLIES WITH THE MECP TABLE 3 STANDARDS

PHASE I & II PROPERTY BOUNDARY

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NO.	REVISIONS	DATE	INITIAL

DOUBLE DECK INC. (C/O REGIONAL GROUP)
PHASE II - ENVIRONMENTAL SITE ASSESSMENT
560 HAZELDEAN ROAD
OTTAWA, ONTARIO

Title: CROSS SECTION B-B' - SOIL (BTEX, PHCs, PAHs, PCBs)

Scale: AS SHOWN	Date: 07/2025
Drawn by: YA	Report No.: PE5304-2
Checked by: NS	Dwg. No.: PE5304-4B
Approved by: MSD	Revision No.:

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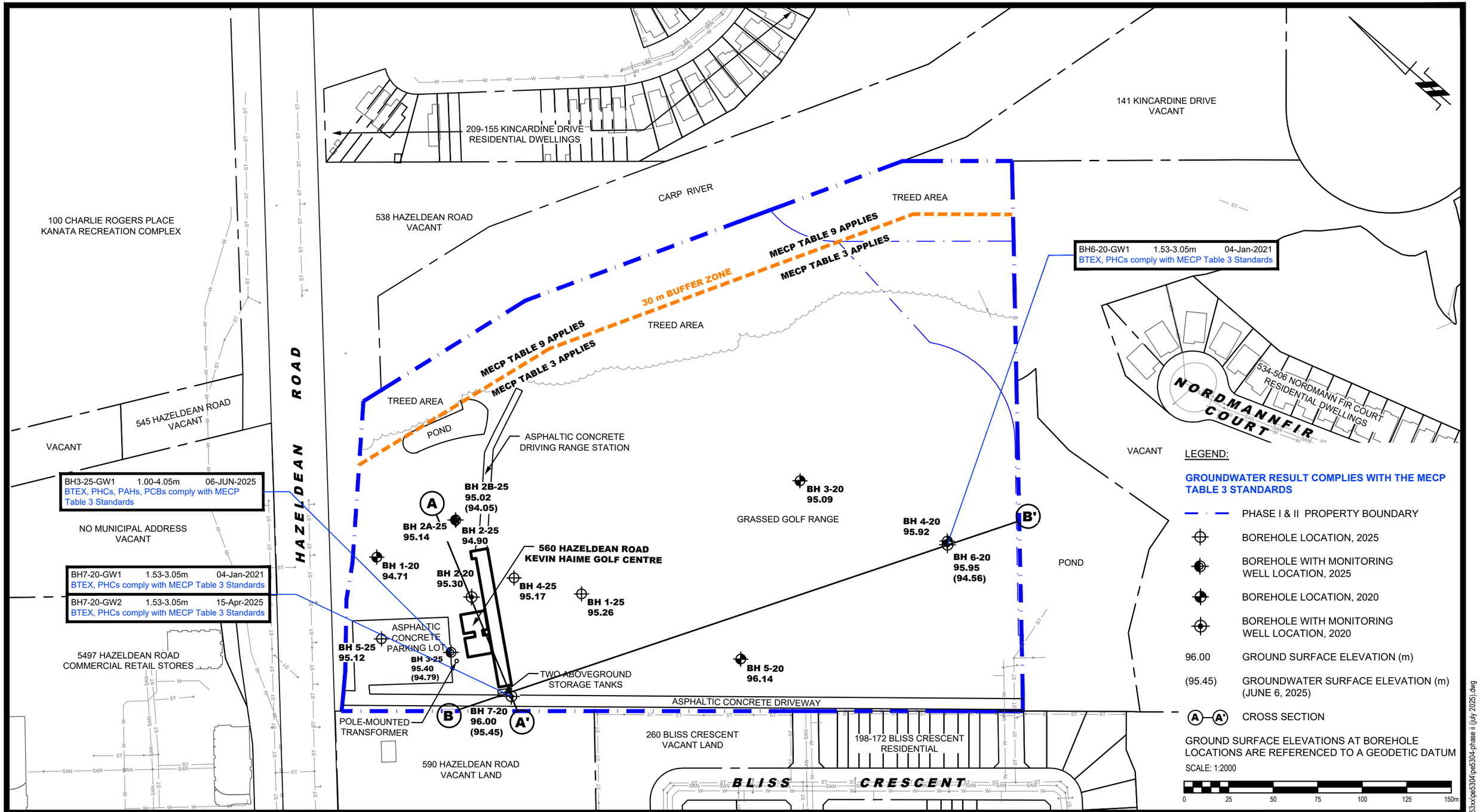

LEGEND:

GROUNDWATER RESULT COMPLIES WITH THE MECP TABLE 3 STANDARDS

- PHASE I & II PROPERTY BOUNDARY
- BOREHOLE LOCATION, 2025
- BOREHOLE WITH MONITORING WELL LOCATION, 2025
- BOREHOLE LOCATION, 2020
- BOREHOLE WITH MONITORING WELL LOCATION, 2020
- 96.00 GROUND SURFACE ELEVATION (m)
- (95.45) GROUNDWATER SURFACE ELEVATION (m) (JUNE 6, 2025)
- A—A' CROSS SECTION

GROUND SURFACE ELEVATIONS AT BOREHOLE LOCATIONS ARE REFERENCED TO A GEODETIC DATUM

SCALE: 1:2000

0 25 50 75 100 125 150m

PATERSON GROUP
9 AURIGA DRIVE
OTTAWA, ON
K2E 7T9
TEL: (613) 226-7381

NO.	REVISIONS	DATE	INITIAL

DOUBLE DECK INC. (C/O REGIONAL GROUP)
PHASE II - ENVIRONMENTAL SITE ASSESSMENT
560 HAZELDEAN ROAD
OTTAWA, ONTARIO

Title: **ANALYTICAL TESTING PLAN - GROUNDWATER (BTEX, PHCs)**

Scale: 1:2000	Date: 07/2025
Drawn by: YA	Report No.: PE5304-2
Checked by: NS	Dwg. No.: PE5304-5
Approved by: MSD	Revision No.:

11x17

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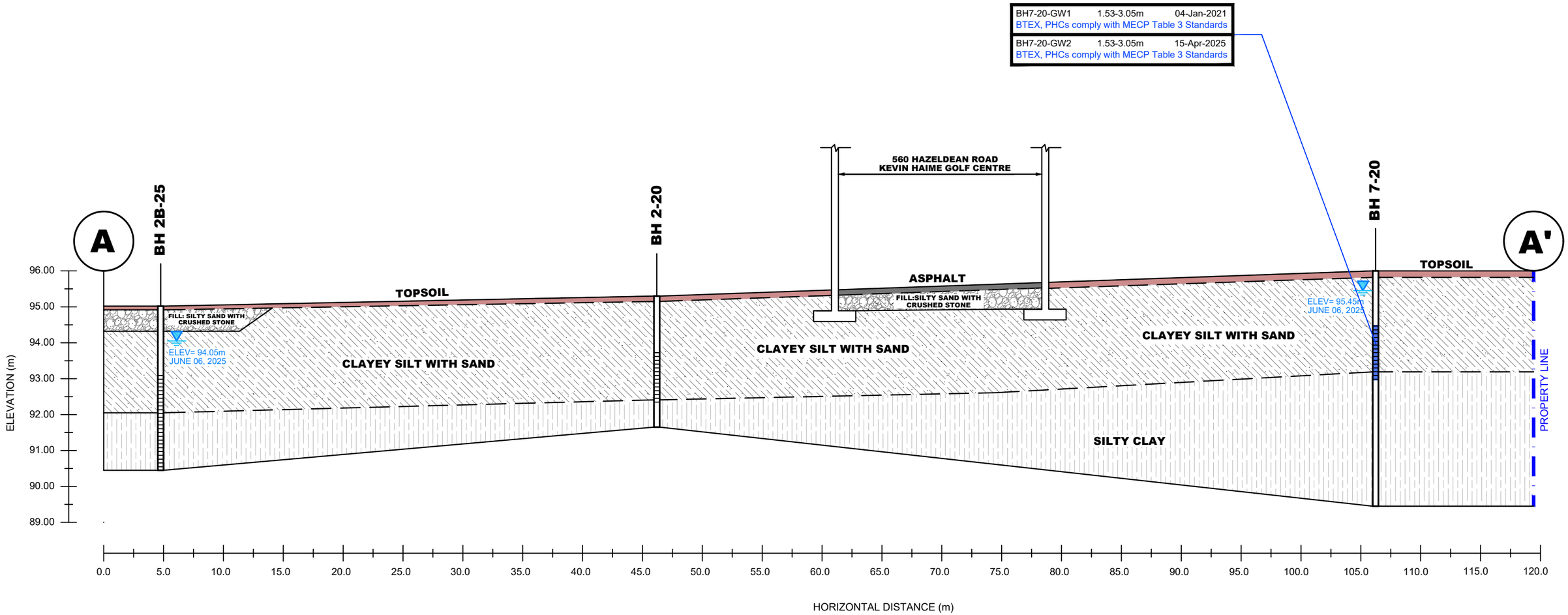
BH7-20-GW1	1.53-3.05m	04-Jan-2021
BTEX, PHCs comply with MECP Table 3 Standards		
BH7-20-GW2	1.53-3.05m	15-Apr-2025
BTEX, PHCs comply with MECP Table 3 Standards		



LEGEND:

GROUNDWATER RESULT COMPLIES WITH THE MECP TABLE 3 STANDARDS

PHASE I & II PROPERTY BOUNDARY

PATERSON GROUP
9 AURIGA DRIVE
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NO.	REVISIONS	DATE	INITIAL

DOUBLE DECK INC. (C/O REGIONAL GROUP)
PHASE II - ENVIRONMENTAL SITE ASSESSMENT
560 HAZELDEAN ROAD
OTTAWA, ONTARIO

Title: CROSS SECTION A-A' - GROUNDWATER (BTEX, PHCs)

Scale: AS SHOWN	Date: 07/2025
Drawn by: YA	Report No.: PE5304-2
Checked by: NS	Dwg. No.: PE5304-5A
Approved by: MSD	Revision No.:

11x17

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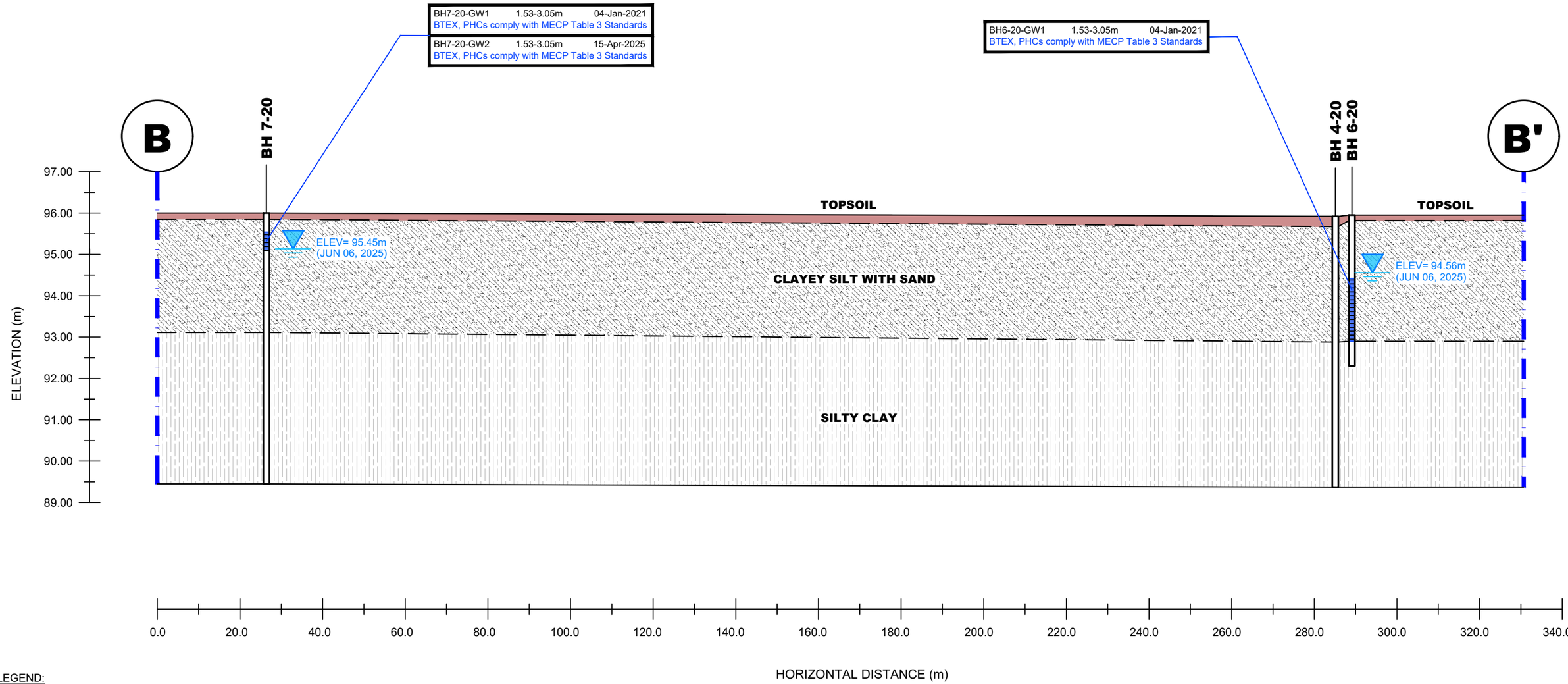

LEGEND:

GROUNDWATER RESULT COMPLIES WITH THE MECP TABLE 3 STANDARDS

PHASE I & II PROPERTY BOUNDARY

PATERSON GROUP
9 AURIGA DRIVE
OTTAWA, ON
K2E 7T9
TEL: (613) 226-7381

NO.	REVISIONS	DATE	INITIAL

DOUBLE DECK INC. (C/O REGIONAL GROUP)
PHASE II - ENVIRONMENTAL SITE ASSESSMENT
560 HAZELDEAN ROAD
OTTAWA, ONTARIO

Title: CROSS SECTION B-B' - GROUNDWATER (BTEX, PHCs)

Scale: AS SHOWN	Date: 07/2025
Drawn by: YA	Report No.: PE5304-2
Checked by: NS	Dwg. No.: PE5304-5B
Approved by: MSD	Revision No.:

11x17

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APPENDIX 1

SAMPLING AND ANALYSIS PLAN

SOIL PROFILE AND TEST DATA SHEETS

SYMBOLS AND TERMS

LABORATORY CERTIFICATES OF ANALYSIS

PATERSON GROUP

Sampling & Analysis Plan

560 Hazeldean Road

Ottawa, Ontario

Prepared for Double Deck Regional Inc
(c/o Regional Group)

Report: PE5304-SAP
May 1, 2025

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2.0 ANALYTICAL TESTING PROGRAM 2

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1.0 SAMPLING PROGRAM

Paterson Group Inc. (Paterson) was commissioned by Regional Group, to conduct a Phase II – Environmental Site Assessment (Phase II ESA) for 560 Hazeldean Road, Ottawa, Ontario.

Based on the findings of the Phase I ESA, the following subsurface investigation program was developed.

Borehole	Location	Rationale	Proposed Depth & Rationale
BH1-20	Northwestern Portion of Phase I Property	For geotechnical and general coverage purposes.	5-7 m; for geotechnical and general coverage purposes.
BH2-20	Northwestern Portion of Phase I Property	For geotechnical and general coverage purposes.	5-7 m; for the purposes of installing a groundwater monitoring well.
BH3-20	Central Portion of Phase I Property	For geotechnical and general coverage purposes.	5-7 m; for geotechnical and general coverage purposes.
BH4-20	Southern Portion of Phase I Property	For geotechnical and general coverage purposes.	5-7 m; for geotechnical and general coverage purposes.
BH5-20	Western Portion of Phase I Property	For geotechnical and general coverage purposes.	5-7 m; for geotechnical and general coverage purposes.
BH6-20	Southern Portion of Phase I Property	For geotechnical and general coverage purposes.	5-7 m; for the purposes of installing a groundwater monitoring well.
BH7-20	Northwestern Portion of Phase I Property	To assess for potential soil and groundwater impacts resulting from the presence of two aboveground fuel storage tanks.	5-7 m; for the purposes of installing a groundwater monitoring well.
BH1-25	Central Portion of Phase I Property	For geotechnical and general coverage purposes.	5-7 m; for geotechnical and general coverage purposes.
BH2-25	Northern Portion of Phase I Property	For geotechnical and general coverage purposes.	5-7 m; for geotechnical and general coverage purposes.
BH3-25	Northwestern Portion of Phase I Property	To assess for potential soil and groundwater impacts resulting from the presence of a pole-mounted electrical transformer.	5-7 m; for the purposes of installing a groundwater monitoring well.
BH4-25	Northern Portion of Phase I Property	For geotechnical and general coverage purposes.	5-7 m; for geotechnical and general coverage purposes.
BH5-25	Northwestern Portion of Phase I Property	For geotechnical and general coverage purposes.	5-7 m; for geotechnical and general coverage purposes.

Borehole locations are shown on Drawing PE5304-3 – Test Hole Location Plan, appended to the main report.

At each borehole, split-spoon samples of the overburden soils will be obtained at 0.76 m (2'6") intervals. All soil samples will be retained, and samples will be selected for submission following a preliminary screening analysis.

Following the borehole drilling, groundwater monitoring wells will be installed in all three boreholes to allow for the collection of groundwater samples.

2.0 ANALYTICAL TESTING PROGRAM

The analytical testing program for soil at the Phase I Property is based on the following general considerations:

- ❒ At least one sample from each borehole should be submitted, in order to delineate the horizontal extent of contamination across the site.

- ❒ At least one sample from each stratigraphic unit should be submitted, in order to delineate the vertical extent of contamination at the site.

- ❒ In boreholes where there is visual or olfactory evidence of contamination, or where organic vapour meter or photoionization detector readings indicate the presence of contamination, the 'worst-case' sample from each borehole should be submitted for comparison with MECP site condition standards.

- ❒ In boreholes with evidence of contamination as described above, a sample should be submitted from the stratigraphic unit below the 'worst-case' sample to determine whether the contaminant(s) have migrated downward.

- ❒ Parameters analyzed should be consistent with the Contaminants of Potential Concern identified in the Phase I ESA.

The analytical testing program for soil at the Phase I Property is based on the following general considerations:

- ❒ Groundwater monitoring wells should be installed in all boreholes with visual or olfactory evidence of soil contamination, in stratigraphic units where soil contamination was encountered, where those stratigraphic units are at or below the water table (i.e. a water sample can be obtained).

- ❒ Groundwater monitoring well screens should straddle the water table at sites where the contaminants of concern are suspected to be LNAPLs.

- ❒ At least one groundwater monitoring well should be installed in a stratigraphic unit below the suspected contamination, where said stratigraphic unit is water-bearing.

- ❒ Parameters analyzed should be consistent with the Contaminants of Concern identified in the Phase I ESA and with the contaminants identified in the soil samples.

3.0 STANDARD OPERATING PROCEDURES

3.1 Environmental Drilling Procedure

Purpose

The purpose of environmental boreholes is to identify and/or delineate contamination within the soil and/or to install groundwater monitoring wells in order to identify contamination within the groundwater.

Equipment

The following is a list of equipment that is in addition to regular drilling equipment stated in the geotechnical drilling SOP:

- ❒ Glass soil sample jars
- ❒ two buckets
- ❒ cleaning brush (toilet brush works well)
- ❒ dish detergent
- ❒ methyl hydrate
- ❒ water (if not available on site - water jugs available in trailer)
- ❒ latex or nitrile gloves (depending on suspected contaminant)
- ❒ RKI Eagle organic vapour meter or MiniRae photoionization detector (depending on contamination suspected)

Determining Borehole Locations

If conditions on site are not as suspected, and planned borehole locations cannot be drilled, **call the office to discuss**. Alternative borehole locations will be determined in conversation with the field technician and supervising engineer.

After drilling is completed a plan with the borehole locations must be provided. Distances and orientations of boreholes with respect to site features (buildings, roadways, etc.) must be provided. Distances should be measured using a measuring tape or wheel rather than paced off. Ground surface elevations at each borehole should be surveyed relative to a geodetic benchmark, if one is available, or a temporary site benchmark which can be tied in at a later date if necessary.

Drilling Procedure

The actual drilling procedure for environmental boreholes is the same as geotechnical boreholes (see SOP for drilling and sampling) with a few exceptions as follows:

- ❒ Continuous split spoon samples (every 0.6 m or 2') or semi-continuous (every 0.76 m or 2'6") are required.
- ❒ Make sure samples are well sealed in plastic bags with no holes prior to screening and are kept cool but unfrozen.
- ❒ If sampling for VOCs, BTEX, or PHCs F_1, a soil core from each soil sample, which may be analyzed, must be taken and placed in the laboratory-provided methanol vial.
- ❒ Note all and any odours or discolouration of samples.
- ❒ Split spoon samplers must be washed between samples.
- ❒ If obvious contamination is encountered, continue sampling until vertical extent of contamination is delineated.
- ❒ As a general rule, environmental boreholes should be deep enough to intercept the groundwater table (unless this is impossible/impractical - call project manager to discuss).
- ❒ If at all possible, soil samples should be submitted to a preliminary screening procedure on site, either using a RKI Eagle, PID, etc. depending on type of suspected contamination.

Spoon Washing Procedure

All sampling equipment (spilt spoons, etc.) must be washed between samples in order to prevent cross contamination of soil samples.

- ❒ Obtain two buckets of water (preferably hot if available)
- ❒ Add a small amount of dish soap to one bucket
- ❒ Scrub spoons with brush in soapy water, inside and out, including tip
- ❒ Rinse in clean water
- ❒ Apply a small amount of methyl hydrate to the inside of the spoon. (A spray bottle or water bottle with a small hole in the cap works well)
- ❒ Allow to dry (takes seconds)
- ❒ Rinse with distilled water, a spray bottle works well.

The methyl hydrate eliminates any soap residue that may be on the spoon and is especially important when dealing with suspected VOCs.

Screening Procedure

The RKI Eagle is used to screen most soil samples, particularly where petroleum hydrocarbon contamination is suspected. The MiniRae is used when VOCs are suspected, however it also can be useful for detecting petroleum. These tools are for screening purposes only and cannot be used in place of laboratory testing. Vapour results obtained from the RKI Eagle and the PID are relative and must be interpreted.

Screening equipment should be calibrated on an approximately monthly basis, more frequently if heavily used.

- ❒ Samples should be brought to room temperature; this is specifically important in colder weather. Soil must not be frozen.
- ❒ Turn instrument on and allow to come to zero - calibrate if necessary
- ❒ If using RKI Eagle, ensure instrument is in methane elimination mode unless otherwise directed.
- ❒ Ensure measurement units are ppm (parts per million) initially. RKI Eagle will automatically switch to %LEL (lower explosive limit) if higher concentrations are encountered.
- ❒ Break up large lumps of soil in the sample bag, taking care not to puncture bag.
- ❒ Insert probe into soil bag, creating a seal with your hand around the opening.
- ❒ Gently manipulate soil in bag while observing instrument readings.
- ❒ Record the highest value obtained in the first 15 to 25 seconds
- ❒ Make sure to indicate scale (ppm or LEL); also note which instrument was used (RKI Eagle 1 or 2, or MiniRae).
- ❒ Jar samples and refrigerate as per Sampling and Analysis Plan.

3.2 Monitoring Well Installation Procedure

Equipment

- ❒ 5’ x 2” threaded sections of Schedule 40 PVC slotted well screen (5’ x 1 ¼” if installing in cored hole in bedrock)
- ❒ 5’ x 2” threaded sections of Schedule 40 PVC riser pipe (5’ x 1 ¼” if installing in cored hole in bedrock)
- ❒ Threaded end-cap
- ❒ Slip-cap or J-plug
- ❒ Asphalt cold patch or concrete
- ❒ Silica Sand
- ❒ Bentonite chips (Holeplug)
- ❒ Steel flushmount casing

Procedure

- ❒ Drill borehole to required depth, using drilling and sampling procedures described above.
- ❒ If borehole is deeper than required monitoring well, backfill with bentonite chips to required depth. This should only be done on wells where contamination is not suspected, in order to prevent downward migration of contamination.
- ❒ Only one monitoring well should be installed per borehole.
- ❒ Monitoring wells should not be screened across more than one stratigraphic unit to prevent potential migration of contaminants between units.
- ❒ Where LNAPLs are the suspected contaminants of concern, monitoring wells should be screened straddling the water table in order to capture any free product floating on top of the water table.
- ❒ Thread the end cap onto a section of screen. Thread second section of screen if required. Thread risers onto screen. Lower into borehole to required depth. Ensure slip-cap or J-plug is inserted to prevent backfill materials entering well.
- ❒ As drillers remove augers, backfill borehole annulus with silica sand until the level of sand is approximately 0.3 m above the top of the screen.
- ❒ Backfill with holeplug until at least 0.3 m of holeplug is present above the top of the silica sand.
- ❒ Backfill remainder of borehole with holeplug or with auger cuttings (if contamination is not suspected).
- ❒ Install flushmount casing. Seal space between flushmount and borehole annulus with concrete, cold patch, or holeplug to match surrounding ground surface.

3.3 Monitoring Well Sampling Procedure

Equipment

- ❒ Water level metre or interface probe on hydrocarbon/LNAPL sites
- ❒ Spray bottles containing water and methanol to clean water level tape or interface probe
- ❒ Peristaltic pump
- ❒ Polyethylene tubing for peristaltic pump
- ❒ Flexible tubing for peristaltic pump
- ❒ Latex or nitrile gloves (depending on suspected contaminant)
- ❒ Allen keys and/or 9/16” socket wrench to remove well caps
- ❒ Graduated bucket with volume measurements
- ❒ pH/Temperature/Conductivity combo pen
- ❒ Laboratory-supplied sample bottles

Sampling Procedure

- ❒ Locate well and use socket wrench or Allan key to open metal flush mount protector cap. Remove plastic well cap.
- ❒ Measure water level, with respect to existing ground surface, using water level meter or interface probe. If using interface probe on suspected NAPL site, measure the thickness of free product.
- ❒ Measure total depth of well.
- ❒ Clean water level tape or interface probe using methanol and water. Change gloves between wells.
- ❒ Calculate volume of standing water within well and record.
- ❒ Insert polyethylene tubing into well and attach to peristaltic pump. Turn on peristaltic pump and purge into graduated bucket. Purge at least three well volumes of water from the well. Measure and record field chemistry. Continue to purge, measuring field chemistry after every well volume purged, until appearance or field chemistry stabilizes.
- ❒ Note appearance of purge water, including colour, opacity (clear, cloudy, silty), sheen, presence of LNAPL, and odour. Note any other unusual features (particulate matter, effervescence (bubbling) of dissolved gas, etc.).
- ❒ Fill required sample bottles. If sampling for metals, attach 75-micron filter to discharge tube and filter metals sample. If sampling for VOCs, use low flow rate to ensure continuous stream of non-turbulent flow into sample bottles. Ensure no headspace is present in VOC vials.
- ❒ Replace well cap and flushmount casing cap.

4.0 QUALITY ASSURANCE/QUALITY CONTROL (QA/QC)

The QA/QC program for this Phase II ESA is as follows:

- ❒ All non-dedicated sampling equipment (split spoons) will be decontaminated according to the SOPs listed above.
- ❒ All groundwater sampling equipment is dedicated (polyethylene and flexible peristaltic tubing is replaced for each well).
- ❒ Where groundwater samples are to be analyzed for VOCs, one laboratory-provided trip blank will be submitted for analysis with every laboratory submission.
- ❒ Approximately one (1) field duplicate will be submitted for every ten (10) samples submitted for laboratory analysis. A minimum of one (1) field duplicate per project will be submitted. Field duplicates will be submitted for soil and groundwater samples
- ❒ Where combo pens are used to measure field chemistry, they will be calibrated on an approximately monthly basis, according to frequency of use.

5.0 DATA QUALITY OBJECTIVES

The purpose of setting data quality objectives (DQOs) is to ensure that the level of uncertainty in data collected during the Phase II ESA is low enough that decision-making is not affected, and that the overall objectives of the investigation are met.

The quality of data is assessed by comparing field duplicates with original samples. If the relative percent difference (RPD) between the duplicate and the sample is within 20%, the data are considered to be of sufficient quality so as not to affect decision-making. The RPD is calculated as follows:

$$RPD = \left| \frac{x_1 - x_2}{(x_1 + x_2)/2} \right| \times 100\%$$

Where x_1 is the concentration of a given parameter in an original sample and x_2 is the concentration of that same parameter in the field duplicate sample.

For the purpose of calculating the RPD, it is desirable to select field duplicates from samples for which parameters are present in concentrations above laboratory detection limits, i.e. samples which are expected to be contaminated. If parameters are below laboratory detection limits for selected samples or duplicates, the RPD may be calculated using a concentration equal to one half the laboratory detection limit.

It is also important to consider data quality in the overall context of the project. For example, if the DQOs are not met for a given sample, yet the concentrations of contaminants in both the sample and the duplicate exceed the MOE site remediation standards by a large margin, the decision-making usefulness of the sample may not be considered to be impaired. The proximity of other samples which meet the DQOs must also be considered in developing the Phase II Conceptual Site Model; often there are enough data available to produce a reliable Phase II Conceptual Site Model even if DQOs are not met for certain individual samples.

These considerations are discussed in the body of the report.

6.0 PHYSICAL IMPEDIMENTS

Physical impediments to the Sampling and Analysis plan may include:

- ❒ The location of underground utilities
- ❒ Poor recovery of split-spoon soil samples
- ❒ Insufficient groundwater volume for groundwater samples
- ❒ Breakage of sampling containers following sampling or while in transit to the laboratory
- ❒ Elevated detection limits due to matrix interference (generally related to soil colour or presence of organic material)
- ❒ Elevated detection limits due to high concentrations of certain parameters, necessitating dilution of samples in laboratory
- ❒ Drill rig breakdowns
- ❒ Winter conditions
- ❒ Other site-specific impediments

Site-specific impediments to the Sampling and Analysis plan are discussed in the body of the Phase II ESA report.

SOIL PROFILE AND TEST DATA

Phase II Environmental Site Assessment

560 Hazeldean Road, Ottawa, Ontario

COORD. SYS.: MTM ZONE 9 **EASTING:** 351817.17 **NORTHING:** 5016827.93 **ELEVATION:** 94.71

PROJECT: Phase II Environmental Site Assessment

ADVANCED BY: CME-55 Low Clearance Drill

REMARKS:

DATE: December 21, 2020

FILE NO. : PE5304

HOLE NO. : BH 1-20

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	SAMPLE ANALYTICAL TESTS	GASTECH (ppm) / GASTECH (% LEL) 50 100 150 200 / PID (ppm) / PID (% LEL) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									94.71
TOPSOIL 0.20m [94.51m]		0	AU 1			BTEX / PHCs (F1-F4) / PAHs / PCBs / pH			
Stiff, brown **CLAYEY SILT** with sand		1	SS 2	42	1-1-1-2 2				94
		2	SS 3	62	P				93
2.28m [92.43m]									
Firm, grey **SILTY CLAY** to **CLAYEY SILT**		3	SS 4	33	P				92
		4	SS 5	75	P				91
6.55m [88.16m]		5							90
End of Borehole		6							89
		7							88
		8							87

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SOIL PROFILE AND TEST DATA

Phase II Environmental Site Assessment

560 Hazeldean Road, Ottawa, Ontario

COORD. SYS.: MTM ZONE 9 **EASTING:** 351834.99 **NORTHING:** 5016773.01 **ELEVATION:** 95.30

PROJECT: Phase II Environmental Site Assessment

ADVANCED BY: CME-55 Low Clearance Drill

REMARKS:

DATE: December 21, 2020

FILE NO. : **PE5304**

HOLE NO. : **BH 2-20**

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE: TYPE AND NO.	SAMPLE: RECOVERY (%)	SAMPLE: N OR RQD	SAMPLE: ANALYTICAL TESTS	GASTECH (ppm) / GASTECH (% LEL) 50 100 150 200 / PID (ppm) / PID (% LEL) 20 40 60 80	MONITORING WELL CONSTRUCTION	ELEVATION (m)
GROUND SURFACE		0							95
TOPSOIL 0.15m [95.15m]									
Stiff, brown **CLAYEY SILT** with sand		1							94
2.89m [92.41m]		2							93
Firm grey **SILTY CLAY** to **CLAYEY SILT**		3						1.53m / 3.05m	92
3.65m [91.65m]		4							91
End of Borehole		5							90
		6							89
		7							88
		8							

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SOIL PROFILE AND TEST DATA

Phase II Environmental Site Assessment

560 Hazeldean Road, Ottawa, Ontario

COORD. SYS.: MTM ZONE 9 **EASTING:** 352005.58 **NORTHING:** 5016674.86 **ELEVATION:** 95.09

PROJECT: Phase II Environmental Site Assessment

ADVANCED BY: CME-55 Low Clearance Drill

REMARKS:

DATE: December 21, 2020

FILE NO. : PE5304

HOLE NO. : BH 3-20

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	SAMPLE ANALYTICAL TESTS	GASTECH (ppm) / GASTECH (% LEL) 50 100 150 200 / PID (ppm) / PID (% LEL) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									95
TOPSOIL 0.17m [94.92m]		0							
Stiff, brown **CLAYEY SILT** with sand		1							94
		2	SS 3	83	1-1-1-1 2	BTEX / PHCs (F1-F4) / pH	▲ 1.0		93
2.84m [92.25m]		3	SS 4	75	0-1-1-/ 2		▲ 0.7 ▲ 0.6		92
Firm to stiff, grey **SILTY CLAY** to **CLAYEY SILT**		4							91
		5							90
		6							89
6.55m [88.54m]		7							88
End of Borehole		8							

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P:/AutoCAD Drawings/Test Hole Data Files/PE53xx/PE5304/data.sqlite 2025-07-02, 16:44 Paterson_Template None

SOIL PROFILE AND TEST DATA

Phase II Environmental Site Assessment

560 Hazeldean Road, Ottawa, Ontario

COORD. SYS.: MTM ZONE 9 **EASTING:** 352033.82 **NORTHING:** 5016589.87 **ELEVATION:** 95.92

PROJECT: Phase II Environmental Site Assessment

ADVANCED BY: CME-55 Low Clearance Drill

REMARKS:

DATE: December 21, 2020

FILE NO. : **PE5304**

HOLE NO. : **BH 4-20**

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	SAMPLE ANALYTICAL TESTS	GASTECH (ppm) / GASTECH (% LEL) 50 100 150 200 / PID (ppm) / PID (% LEL) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
TOPSOIL 0.25m [95.67m]			AU 1				1.4		95
Stiff, brown SILT to **CLAYEY SILT** with sand		1	SS 2	50	2-3-2-2 5		0.6		94
		2	SS 3	58	1-1-1-1 2		0.8		
3.04m [92.88m]		3					0.8		93
Firm, grey **SILTY CLAY** to **CLAYEY SILT**		4							92
		5							91
6.55m [89.37m]		6							90
End of Borehole		7							89
		8							88

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SOIL PROFILE AND TEST DATA

Phase II Environmental Site Assessment

560 Hazeldean Road, Ottawa, Ontario

COORD. SYS.: MTM ZONE 9 **EASTING:** 351907.42 **NORTHING:** 5016634.92 **ELEVATION:** 96.14

PROJECT: Phase II Environmental Site Assessment

ADVANCED BY: CME-55 Low Clearance Drill

REMARKS:

DATE: December 21, 2020

FILE NO. : **PE5304**

HOLE NO. : **BH 5-20**

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	SAMPLE ANALYTICAL TESTS	GASTECH (ppm) / GASTECH (% LEL) / PID (ppm) / PID (% LEL)	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE							50 100 150 200 / 20 40 60 80		
TOPSOIL 0.13m [96.01m]		0	AU 1				0.5		96
Stiff, brown **CLAYEY SILT** with sand		1	SS 2	71	2-2-1-2 3		0.8		95
		2	SS 3	58	1-1-1-1 2		1.4		94
			SS 4	83	1-1-2-1 3		1.1		
3.05m [93.09m]		3							93
Stiff grey **SILTY CLAY** to **CLAYEY SILT**			SS 5	21	P		0.7		92
		4							
		5							91
			SS 6	100	P		0.6		
6.55m [89.59m]		6							90
End of Borehole		7							89
		8							

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SOIL PROFILE AND TEST DATA

Phase II Environmental Site Assessment

560 Hazeldean Road, Ottawa, Ontario

COORD. SYS.: MTM ZONE 9 **EASTING:** 352032.02 **NORTHING:** 5016587.87 **ELEVATION:** 95.95

PROJECT: Phase II Environmental Site Assessment

ADVANCED BY: CME-55 Low Clearance Drill

REMARKS:

DATE: December 21, 2020

FILE NO. : **PE5304**

HOLE NO. : **BH 6-20**

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	SAMPLE ANALYTICAL TESTS	GASTECH (ppm) / GASTECH (% LEL) 50 100 150 200 / PID (ppm) / PID (% LEL) 20 40 60 80	MONITORING WELL CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
TOPSOIL 0.13m [95.82m]									
Stiff, brown SILT to **CLAYEY SILT** with sand			AU 1				0.1		
		1	SS 2	46	2-2-3-1 5		1.1		95
								1.39 m 2025-06-06	
		2	SS 3	79	0-1-1-/ 2		1.0	1.53m	94
			SS 4	66	1-1-/-/ 1/0.3		0.8		
3.05m [92.90m]		3						3.05m	93
Firm, grey **SILTY CLAY** to **CLAYEY SILT**			SS 5	100	1-/-/-/ 1/0.6		0.7		
3.65m [92.30m]									
End of Borehole		4							92
(GWL at 1.39 m depth - June 6, 2025)		5							91
		6							90
		7							89
		8							88

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SOIL PROFILE AND TEST DATA

Phase II Environmental Site Assessment

560 Hazeldean Road, Ottawa, Ontario

COORD. SYS.: MTM ZONE 9 **EASTING:** 351810.20 **NORTHING:** 5016714.00 **ELEVATION:** 96.00

PROJECT: Phase II Environmental Site Assessment

ADVANCED BY: CME-55 Low Clearance Drill

REMARKS:

DATE: December 21, 2020

FILE NO. : **PE5304**

HOLE NO. : **BH 7-20**

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	SAMPLE ANALYTICAL TESTS	GASTECH (ppm) / GASTECH (% LEL) / PID (ppm) / PID (% LEL)	MONITORING WELL CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
TOPSOIL 0.18m [95.82m]									
Stiff, brown **CLAYEY SILT** with sand			AU 1				1.2		
		1	SS 2	16	3-2-2-2 4		1.7		95
			SS 3	54	1-3-2-1 5	BTEX / PHCs (F1-F4)	1.6		
2.81m [93.19m]		2	SS 4	71	1-1-1-1 2		0.9		94
Firm to stiff, grey **SILTY CLAY** to **CLAYEY SILT**		3	SS 5	46	P		0.9		93
6.55m [89.45m]		4							92
End of Borehole		5							91
(GWL at 0.73 m depth - April 15, 2025)		6							90
(GWL at 0.55 m depth - June 6, 2025)		7							89
		8							88

0.55 m 2025-06-06

0.73 m 2025-04-15

1.53m

3.05m

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SOIL PROFILE AND TEST DATA

Phase II Environmental Site Assessment

560 Hazeldean Road, Ottawa, Ontario

COORD. SYS.: MTM ZONE 9 **EASTING:** 351878.39 **NORTHING:** 5016725.03 **ELEVATION:** 95.26

PROJECT: Phase II Environmental Site Assessment

ADVANCED BY: CME-55 Low Clearance Drill

REMARKS:

DATE: May 29, 2025

FILE NO. : PE5304

HOLE NO. : BH 1-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	SAMPLE ANALYTICAL TESTS	GASTECH (ppm) / GASTECH (% LEL) / PID (ppm) / PID (% LEL)	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE		0					50 100 150 200 / 20 40 60 80		95
TOPSOIL: with organics 0.05m [95.21m]			AU 1				0.0		
FILL: Compact, brown silty clay with some fine sand 0.69m [94.57m]									
Stiff, brown **CLAYEY SILT**, trace sand		1	SS 2	42	1-1-1-2 2		0.1		94
- Sand seams at 1.52 m to 1.63 m depth		2	SS 3	62	P		0.1		93
2.21m [93.05m]									
Stiff to firm, grey **CLAYEY SILT**, trace sand		3	SS 4	33	P		0.0		92
		4	SS 5	75	P		0.2		91
6.55m [88.71m]		5							90
End of Borehole		6						5.69 m 2025-06-06	89
(GWL at 5.69 m depth - June 6, 2025)		7							88
		8							87
		9							86
		10							85
		11							84
		12							

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SOIL PROFILE AND TEST DATA

Phase II Environmental Site Assessment

560 Hazeldean Road, Ottawa, Ontario

COORD. SYS.: MTM ZONE 9 **EASTING:** 351864.41 **NORTHING:** 5016805.75 **ELEVATION:** 94.90

PROJECT: Phase II Environmental Site Assessment

ADVANCED BY: CME-55 Low Clearance Drill

REMARKS:

DATE: May 29, 2025

FILE NO. : **PE5304**

HOLE NO. : **BH 2-25**

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	SAMPLE ANALYTICAL TESTS	GASTECH (ppm) / GASTECH (% LEL) / PID (ppm) / PID (% LEL)	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE		0							94
TOPSOIL: with organics 0.05m [94.85m]			AU 1				0.1		
FILL: Brown silty fine sand, trace topsoil 0.69m [94.21m]									
Stiff, brown **CLAYEY SILT**, some trace to sand		1	SS 2	42	3-4-3-2 7		0.2		93
		2	SS 3		1-2-1-2 3		0.0		
2.97m [91.93m]			SS 4	71	P		0.0		92
Firm, grey **SILTY CLAY** to **CLAYEY SILT**		3	SS 5	50	P		0.2		
		4							91
		5							90
		6							89
		7							88
8.08m [86.82m]		8							87
End of Borehole		9							86
		10							85
		11							84
		12							83

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SOIL PROFILE AND TEST DATA

Phase II Environmental Site Assessment

560 Hazeldean Road, Ottawa, Ontario

COORD. SYS.: MTM ZONE 9 **EASTING:** 351862.44 **NORTHING:** 5016804.41 **ELEVATION:** 95.14

PROJECT: Phase II Environmental Site Assessment

ADVANCED BY: CME-55 Low Clearance Drill

REMARKS:

DATE: May 29, 2025

FILE NO. : **PE5304**

HOLE NO. : **BH 2A-25**

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE: TYPE AND NO.	SAMPLE: RECOVERY (%)	SAMPLE: N OR RQD	SAMPLE: ANALYTICAL TESTS	GASTECH (ppm) / GASTECH (% LEL) 50 100 150 200 / PID (ppm) / PID (% LEL) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE		0							95
OVERBURDEN		1							94
		2							93
		3							92
		4							91
		5							90
		6							89
		7							88
7.62m [87.52m]									
Dynamic Cone Penetration Test commenced at 7.62 m depth		8							87
		9							86
		10							85
		11							84
		12							

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SOIL PROFILE AND TEST DATA

Phase II Environmental Site Assessment

560 Hazeldean Road, Ottawa, Ontario

COORD. SYS.: MTM ZONE 9 **EASTING:** 351862.44 **NORTHING:** 5016804.41 **ELEVATION:** 95.14

PROJECT: Phase II Environmental Site Assessment

ADVANCED BY: CME-55 Low Clearance Drill

REMARKS:

DATE: May 29, 2025

FILE NO. : **PE5304**

HOLE NO. : **BH 2A-25**

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE: TYPE AND NO.	SAMPLE: RECOVERY (%)	SAMPLE: N OR RQD	SAMPLE: ANALYTICAL TESTS	GASTECH (ppm) / GASTECH (% LEL) 50 100 150 200 / PID (ppm) / PID (% LEL) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
19.84m [75.30m]		12							83
End of Borehole		13							82
DCPT pushed from 7.62 m to 19.84 m depth		14							81
Practical refusal to DCPT at 19.84 m depth		15							80
		16							79
		17							78
		18							77
		19							76
		20							75
		21							74
		22							73
		23							72
		24							

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SOIL PROFILE AND TEST DATA

Phase II Environmental Site Assessment

560 Hazeldean Road, Ottawa, Ontario

COORD. SYS.: MTM ZONE 9 **EASTING:** 351863.47 **NORTHING:** 5016805.63 **ELEVATION:** 95.02

PROJECT: Phase II Environmental Site Assessment

ADVANCED BY: CME-55 Low Clearance Drill

REMARKS:

DATE: May 29, 2025

FILE NO. : **PE5304**

HOLE NO. : **BH 2B-25**

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE: TYPE AND NO.	SAMPLE: RECOVERY (%)	SAMPLE: N OR RQD	SAMPLE: ANALYTICAL TESTS	GASTECH (ppm) / GASTECH (% LEL) / PID (ppm) / PID (% LEL)	MONITORING WELL CONSTRUCTION	ELEVATION (m)
GROUND SURFACE							50 100 150 200 / 20 40 60 80		
OVERBURDEN		0						0.97 m 2025-06-06	95
		1							94
		2						1.83m	93
		3							92
		4							91
4.57m [90.45m]								4.57m	
End of Borehole		5							90
(GWL at 0.97 m depth - June 6, 2025)		6							89
		7							88
		8							87
		9							86
		10							85
		11							84
		12							

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SOIL PROFILE AND TEST DATA

Phase II Environmental Site Assessment

560 Hazeldean Road, Ottawa, Ontario

COORD. SYS.: MTM ZONE 9 **EASTING:** 351805.60 **NORTHING:** 5016758.90 **ELEVATION:** 95.40

PROJECT: Phase II Environmental Site Assessment

ADVANCED BY: CME-55 Low Clearance Drill

REMARKS:

DATE: May 29, 2025

FILE NO. : PE5304

HOLE NO. : BH 3-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	SAMPLE ANALYTICAL TESTS	GASTECH (ppm) / GASTECH (% LEL) / PID (ppm) / PID (% LEL)	MONITORING WELL CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
ASPHALT 0.08m [95.32m]									
FILL: Brown silty sand with crushed stone and some clay 0.46m [94.94m]									
Stiff to firm, brown **CLAYEY SILT**, trace sand		1	AU 1			BTEX / PHCs (F1-F4) / PAHs / PCBs / pH	0.0		95
			SS 2	67	1-1-1-1 2		0.1	0.61 m 2025-06-06	
		2	SS 3	62	P		0.1	1.00m	94
			SS 4	42	P		0.2		93
2.97m [92.43m]		3	SS 5	100	P		0.0		92
Firm, grey **SILTY CLAY**			SS 6	100	P		0.0	4.05m	
4.42m [90.98m]		4							91
End of Borehole		5							90
(GWL at 0.61 m depth - June 6, 2025)		6							89
		7							88
		8							87
		9							86
		10							85
		11							84
		12							

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SOIL PROFILE AND TEST DATA

Phase II Environmental Site Assessment

560 Hazeldean Road, Ottawa, Ontario

COORD. SYS.: MTM ZONE 9 **EASTING:** 351860.36 **NORTHING:** 5016759.52 **ELEVATION:** 95.17

PROJECT: Phase II Environmental Site Assessment

ADVANCED BY: CME-55 Low Clearance Drill

REMARKS:

DATE: May 30, 2025

FILE NO. : **PE5304**

HOLE NO. : **BH 4-25**

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	SAMPLE ANALYTICAL TESTS	GASTECH (ppm) / GASTECH (% LEL) 50 100 150 200 / PID (ppm) / PID (% LEL) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE		0							95
TOPSOIL: with organics 0.05m [95.12m]			AU 1				0.1		
FILL: Brown silty clay, trace organics and sand 0.69m [94.48m]									
Stiff, brown **CLAYEY SILT**, trace sand		1	SS 2	67	3-2-3-2 5		0.0		94
		2	SS 3	37	P		0.1		93
			SS 4	62	P		0.1		
2.97m [92.20m]		3	SS 5		P				92
Firm, grey **SILTY CLAY** to **CLAYEY SILT**		4							91
		5							90
		6							89
7.32m [87.84m]		7							88
End of Borehole		8							87
(BH blocked on - June 6, 2025)		9							86
		10							85
		11							84
		12							

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SOIL PROFILE AND TEST DATA

Phase II Environmental Site Assessment

560 Hazeldean Road, Ottawa, Ontario

COORD. SYS.: MTM ZONE 9 **EASTING:** 351785.78 **NORTHING:** 5016793.36 **ELEVATION:** 95.12

PROJECT: Phase II Environmental Site Assessment

ADVANCED BY: CME-55 Low Clearance Drill

REMARKS:

DATE: May 30, 2025

FILE NO. : **PE5304**

HOLE NO. : **BH 5-25**

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE N OR RQD	SAMPLE ANALYTICAL TESTS	GASTECH (ppm) / GASTECH (% LEL) / PID (ppm) / PID (% LEL)	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE							50 100 150 200 / 20 40 60 80		
ASPHALT 0.08m [95.04m]			AU 1				0.1		95
FILL: Crushed stone and some sand, trace clay 0.69m [94.43m]		1	SS 2	8	1-2-2-1 4		0.0		94
Stiff, brown **CLAYEY SILT**, trace sand		2	SS 3	42	P		0.0		93
			SS 4	50	P		0.0		
2.97m [92.15m]		3	SS 5	37	P		0.0	3.35 m 2025-06-06	92
Firm, grey **SILTY CLAY** to **CLAYEY SILT**		4							91
		5							90
		6							89
		7							88
		8							87
		9							86
		10	SS 6	135	P				85
		11							84
		12							

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SOIL PROFILE AND TEST DATA

Phase II Environmental Site Assessment

560 Hazeldean Road, Ottawa, Ontario

COORD. SYS.: MTM ZONE 9 **EASTING:** 351785.78 **NORTHING:** 5016793.36 **ELEVATION:** 95.12

PROJECT: Phase II Environmental Site Assessment

ADVANCED BY: CME-55 Low Clearance Drill

REMARKS:

DATE: May 30, 2025

FILE NO. : **PE5304**

HOLE NO. : **BH 5-25**

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE: TYPE AND NO.	SAMPLE: RECOVERY (%)	SAMPLE: N OR RQD	SAMPLE: ANALYTICAL TESTS	GASTECH (ppm) / GASTECH (% LEL) 50 100 150 200 / PID (ppm) / PID (% LEL) 20 40 60 80	PIEZOMETER CONSTRUCTION	ELEVATION (m)
12.65m [82.47m]		12							83
Dynamic Cone Penetration Test commenced at 7.62 m depth		13							82
		14							81
		15							80
		16							79
		17							78
17.88m [77.24m]		18							77
End of Borehole DCPT pushed from 12.65 m to 17.88 m depth Practical refusal to DCPT at 17.88 m depth (GWL at 3.35 m depth - June 6, 2025)		19							76
		20							75
		21							74
		22							73
		23							72
		24							

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SYMBOLS AND TERMS

SOIL DESCRIPTION

Behavioural properties, such as structure and strength, take precedence over particle gradation in describing soils. Terminology describing soil structure are as follows:

Desiccated	-	having visible signs of weathering by oxidation of clay minerals, shrinkage cracks, etc.
Fissured	-	having cracks, and hence a blocky structure.
Varved	-	composed of regular alternating layers of silt and clay.
Stratified	-	composed of alternating layers of different soil types, e.g. silt and sand or silt and clay.
Well-Graded	-	Having wide range in grain sizes and substantial amounts of all intermediate particle sizes (see Grain Size Distribution).
Uniformly-Graded	-	Predominantly of one grain size (see Grain Size Distribution).

The standard terminology to describe the relative strength of cohesionless soils is the compactness condition, usually inferred from the results of the Standard Penetration Test (SPT) 'N' value. The SPT N value is the number of blows of a 63.5 kg hammer, falling 760 mm, required to drive a 51 mm O.D. split spoon sampler 300 mm into the soil after an initial penetration of 150 mm. An SPT N value of "P" denotes that the split-spoon sampler was pushed 300 mm into the soil without the use of a falling hammer.

Compactness Condition	'N' Value	Relative Density %
Very Loose	<4	<15
Loose	4-10	15-35
Compact	10-30	35-65
Dense	30-50	65-85
Very Dense	>50	>85

The standard terminology to describe the strength of cohesive soils is the consistency, which is based on the undisturbed undrained shear strength as measured by the in situ or laboratory shear vane tests, unconfined compression tests, or occasionally by the Standard Penetration Test (SPT). Note that the typical correlations of undrained shear strength to SPT N value (tabulated below) tend to underestimate the consistency for sensitive silty clays, so Paterson reviews the applicable split spoon samples in the laboratory to provide a more representative consistency value based on tactile examination.

Consistency	Undrained Shear Strength (kPa)	'N' Value
Very Soft	<12	<2
Soft	12-25	2-4
Firm	25-50	4-8
Stiff	50-100	8-15
Very Stiff	100-200	15-30
Hard	>200	>30

SYMBOLS AND TERMS (continued)

SOIL DESCRIPTION (continued)

Cohesive soils can also be classified according to their "sensitivity". The sensitivity, S_t, is the ratio between the undisturbed undrained shear strength and the remoulded undrained shear strength of the soil. The classes of sensitivity may be defined as follows:

Low Sensitivity:	$S_t < 2$
Medium Sensitivity:	$2 < S_t < 4$
Sensitive:	$4 < S_t < 8$
Extra Sensitive:	$8 < S_t < 16$
Quick Clay:	$S_t > 16$

ROCK DESCRIPTION

The structural description of the bedrock mass is based on the Rock Quality Designation (RQD).

The RQD classification is based on a modified core recovery percentage in which all pieces of sound core over 100 mm long are counted as recovery. The smaller pieces are considered to be a result of closely-spaced discontinuities (resulting from shearing, jointing, faulting, or weathering) in the rock mass and are not counted. RQD is ideally determined from NQ or larger size core. However, it can be used on smaller core sizes, such as BQ, if the bulk of the fractures caused by drilling stresses (called "mechanical breaks") are easily distinguishable from the normal in situ fractures.

RQD %	**ROCK QUALITY**
90-100	Excellent, intact, very sound
75-90	Good, massive, moderately jointed or sound
50-75	Fair, blocky and seamy, fractured
25-50	Poor, shattered and very seamy or blocky, severely fractured
0-25	Very poor, crushed, very severely fractured

SAMPLE TYPES

SS	-	Split spoon sample (obtained in conjunction with the performing of the Standard Penetration Test (SPT))
TW	-	Thin wall tube or Shelby tube, generally recovered using a piston sampler
G	-	"Grab" sample from test pit or surface materials
AU	-	Auger sample or bulk sample
WS	-	Wash sample
RC	-	Rock core sample (Core bit size BQ, NQ, HQ, etc.). Rock core samples are obtained with the use of standard diamond drilling bits.

SYMBOLS AND TERMS (continued)

PLASTICITY LIMITS AND GRAIN SIZE DISTRIBUTION

WC%	-	Natural water content or water content of sample, %
LL	-	Liquid Limit, % (water content above which soil behaves as a liquid)
PL	-	Plastic Limit, % (water content above which soil behaves plastically)
PI	-	Plasticity Index, % (difference between LL and PL)
Dxx	-	Grain size at which xx% of the soil, by weight, is of finer grain sizes These grain size descriptions are not used below 0.075 mm grain size
D10	-	Grain size at which 10% of the soil is finer (effective grain size)
D60	-	Grain size at which 60% of the soil is finer
Cc	-	Concavity coefficient = $(D30)^2 / (D10 \times D60)$
Cu	-	Uniformity coefficient = D60 / D10

Cc and Cu are used to assess the grading of sands and gravels:
Well-graded gravels have: $1 < Cc < 3$ and $Cu > 4$
Well-graded sands have: $1 < Cc < 3$ and $Cu > 6$
Sands and gravels not meeting the above requirements are poorly-graded or uniformly-graded.
Cc and Cu are not applicable for the description of soils with more than 10% silt and clay (more than 10% finer than 0.075 mm or the #200 sieve)

CONSOLIDATION TEST

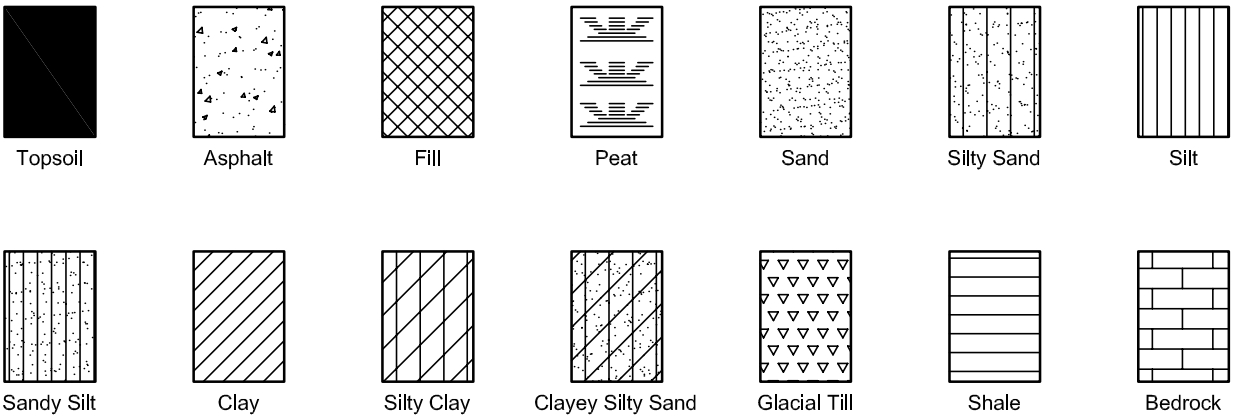
p'_o	-	Present effective overburden pressure at sample depth
p'_c	-	Preconsolidation pressure of (maximum past pressure on) sample
Ccr	-	Recompression index (in effect at pressures below p'_c)
Cc	-	Compression index (in effect at pressures above p'_c)
OC Ratio		Overconsolidaton ratio = p'_c / p'_o
Void Ratio		Initial sample void ratio = volume of voids / volume of solids
Wo	-	Initial water content (at start of consolidation test)

PERMEABILITY TEST

k	-	Coefficient of permeability or hydraulic conductivity is a measure of the ability of water to flow through the sample. The value of k is measured at a specified unit weight for (remoulded) cohesionless soil samples, because its value will vary with the unit weight or density of the sample during the test.

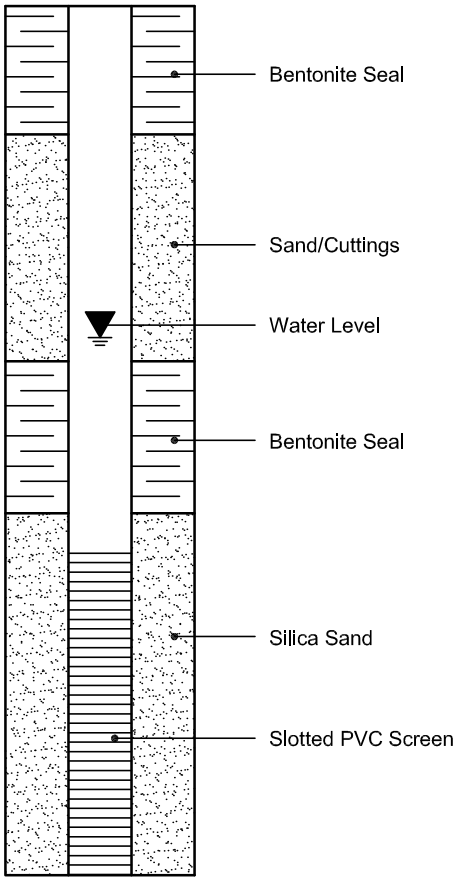
SYMBOLS AND TERMS (continued)

STRATA PLOT

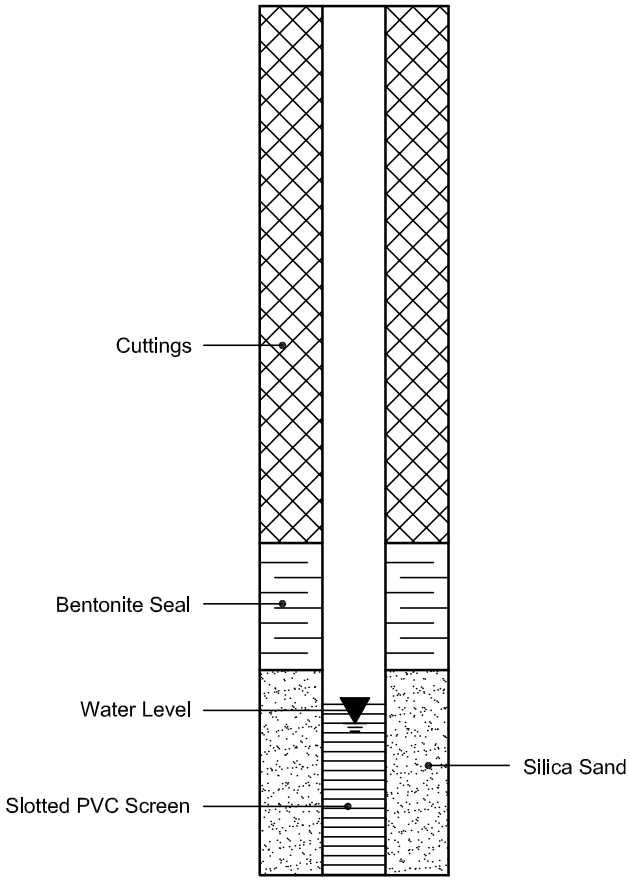


MONITORING WELL AND PIEZOMETER CONSTRUCTION

MONITORING WELL CONSTRUCTION



PIEZOMETER CONSTRUCTION



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Certificate of Analysis

Paterson Group Consulting Engineers

154 Colonnade Road South
Nepean, ON K2E 7J5
Attn: Mark D'Arcy

Client PO: 31621
Project: PE5129
Custody: 55619

Report Date: 7-Jan-2021
Order Date: 5-Jan-2021

Order #: 2102140

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

Paracel ID	Client ID
2102140-01	BH6-GW1
2102140-02	BH7-GW1

Approved By:

Mark Foto

Mark Foto, M.Sc.
Lab Supervisor

Any use of these results implies your agreement that our total liabilty in connection with this work, however arising, shall be limited to the amount paid by you for this work, and that our employees or agents shall not under any circumstances be liable to you in connection with this work.

Certificate of Analysis

Report Date: 07-Jan-2021

Client: Paterson Group Consulting Engineers

Order Date: 5-Jan-2021

Client PO: 31621

Project Description: PE5129

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
BTEX by P&T GC-MS	EPA 624 - P&T GC-MS	6-Jan-21	6-Jan-21
PHC F1	CWS Tier 1 - P&T GC-FID	6-Jan-21	6-Jan-21
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	6-Jan-21	6-Jan-21

Certificate of Analysis

Report Date: 07-Jan-2021

Client: Paterson Group Consulting Engineers

Order Date: 5-Jan-2021

Client PO: 31621

Project Description: PE5129

	Client ID:	BH6-GW1	BH7-GW1	-	-
	Sample Date:	04-Jan-21 09:00	04-Jan-21 09:00	-	-
	Sample ID:	2102140-01	2102140-02	-	-
	MDL/Units	Water	Water	-	-
Volatiles					
Benzene	0.5 ug/L	<0.5	<0.5	-	-
Ethylbenzene	0.5 ug/L	<0.5	<0.5	-	-
Toluene	0.5 ug/L	<0.5	<0.5	-	-
m,p-Xylenes	0.5 ug/L	<0.5	<0.5	-	-
o-Xylene	0.5 ug/L	<0.5	<0.5	-	-
Xylenes, total	0.5 ug/L	<0.5	<0.5	-	-
Toluene-d8	Surrogate	108%	106%	-	-
Hydrocarbons					
F1 PHCs (C6-C10)	25 ug/L	<25	<25	-	-
F2 PHCs (C10-C16)	100 ug/L	<100	<100	-	-
F3 PHCs (C16-C34)	100 ug/L	<100	<100	-	-
F4 PHCs (C34-C50)	100 ug/L	<100	<100	-	-

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L						
F2 PHCs (C10-C16)	ND	100	ug/L						
F3 PHCs (C16-C34)	ND	100	ug/L						
F4 PHCs (C34-C50)	ND	100	ug/L						
Volatiles									
Benzene	ND	0.5	ug/L						
Ethylbenzene	ND	0.5	ug/L						
Toluene	ND	0.5	ug/L						
m,p-Xylenes	ND	0.5	ug/L						
o-Xylene	ND	0.5	ug/L						
Xylenes, total	ND	0.5	ug/L						
Surrogate: Toluene-d8	*84.9*		*ug/L*		*106*	*50-140*			

Certificate of Analysis

Report Date: 07-Jan-2021

Client: Paterson Group Consulting Engineers

Order Date: 5-Jan-2021

Client PO: 31621

Project Description: PE5129

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L	ND			NC	30	
Volatiles									
Benzene	ND	0.5	ug/L	ND			NC	30	
Ethylbenzene	ND	0.5	ug/L	ND			NC	30	
Toluene	ND	0.5	ug/L	ND			NC	30	
m,p-Xylenes	ND	0.5	ug/L	ND			NC	30	
o-Xylene	ND	0.5	ug/L	ND			NC	30	
Surrogate: Toluene-d8	*84.4*		*ug/L*		*105*	*50-140*			

Certificate of Analysis

Client: Paterson Group Consulting Engineers

Client PO: 31621

Report Date: 07-Jan-2021

Order Date: 5-Jan-2021

Project Description: PE5129

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	2280	25	ug/L	ND	114	68-117			
F2 PHCs (C10-C16)	1880	100	ug/L	ND	118	60-140			
F3 PHCs (C16-C34)	5250	100	ug/L	ND	134	60-140			
F4 PHCs (C34-C50)	3360	100	ug/L	ND	136	60-140			
Volatiles									
Benzene	38.7	0.5	ug/L	ND	96.8	60-130			
Ethylbenzene	42.0	0.5	ug/L	ND	105	60-130			
Toluene	42.8	0.5	ug/L	ND	107	60-130			
m,p-Xylenes	72.7	0.5	ug/L	ND	90.9	60-130			
o-Xylene	36.0	0.5	ug/L	ND	89.9	60-130			
Surrogate: Toluene-d8	*83.1*		*ug/L*		*104*	*50-140*			

Qualifier Notes:

None

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

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

CCME PHC additional information:

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

PARAC LABORATORIES

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Paracel Order Number (Lab Use Only)	Chain Of Custody (Lab Use Only)
2102140	№ 55619

Client Name: Paterson	Project Ref: PE 5129	Page __ of __
Contact Name: Marie D'Arcy	Quote #:	Turnaround Time
Address: 154 Colonnade	PO #: 31621	☐ 1 day ☐ 3 day ☐ 2 day ☒ Regular
Telephone: 613 226 7381	E-mail: MDarcy@Patersongroup.ca	Date Required:

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

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

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken Date	Sample Taken Time	Required Analysis: Btex F1-F4
1	BH6-GW1	GW		3	Jan 4 2021		✓
2	BH7-GW1	GW		3	〃		✓
3							
4							
5							
6							
7							
8							
9							
10							

Comments:

Method of Delivery: PARACEL COURIER

Relinquished By (Sign): G Pat	Received By Driver/Depot: A. DeLuise	Received at Lab:	Verified By:
Relinquished By (Print): Grant Paterson	Date/Time: 05/01/21 1:47	Date/Time: 05 Jan 2021 1435	Date/Time: 1-5-21 14:52
Date/Time: 4 Jan 4 2021	Temperature: °C	Temperature: 9.1 °C	pH Verified: ☐ By:

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Certificate of Analysis

Paterson Group Consulting Engineers (Ottawa)
9 Auriga Drive
Ottawa, ON K2E 7T9
Attn: Nick Sullivan

Client PO: 62860
Project: PE5304
Custody:

Report Date: 21-Apr-2025
Order Date: 15-Apr-2025

Order #: 2516198

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

Paracel ID	Client ID
2516198-01	BH7-20-GW
2516198-02	DUP1-25

Approved By:

Dale Robertson, BSc
Senior Technical Advisor

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
BTEX by P&T GC-MS	EPA 624 - P&T GC-MS	16-Apr-25	16-Apr-25
PHC F1	CWS Tier 1 - P&T GC-FID	16-Apr-25	16-Apr-25
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	16-Apr-25	17-Apr-25

	Client ID:	BH7-20-GW	DUP1-25	-	-	-	-
	Sample Date:	15-Apr-25 08:30	15-Apr-25 08:35	-	-		
	Sample ID:	2516198-01	2516198-02	-	-		
	Matrix:	Ground Water	Ground Water	-	-		
	MDL/Units						
Volatiles							
Benzene	0.5 ug/L	<0.5	<0.5	-	-	-	-
Ethylbenzene	0.5 ug/L	<0.5	<0.5	-	-	-	-
Toluene	0.5 ug/L	<0.5	<0.5	-	-	-	-
m,p-Xylenes	0.5 ug/L	<0.5	<0.5	-	-	-	-
o-Xylene	0.5 ug/L	<0.5	<0.5	-	-	-	-
Xylenes, total	0.5 ug/L	<0.5	<0.5	-	-	-	-
Toluene-d8	Surrogate	82.0%	81.8%	-	-	-	-
Hydrocarbons							
F1 PHCs (C6-C10)	25 ug/L	<25	<25	-	-	-	-
F2 PHCs (C10-C16)	100 ug/L	<100	<100	-	-	-	-
F3 PHCs (C16-C34)	100 ug/L	<100	<100	-	-	-	-
F4 PHCs (C34-C50)	100 ug/L	<100	<100	-	-	-	-

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons								
F1 PHCs (C6-C10)	ND	25	ug/L					
F2 PHCs (C10-C16)	ND	100	ug/L					
F3 PHCs (C16-C34)	ND	100	ug/L					
F4 PHCs (C34-C50)	ND	100	ug/L					
Volatiles								
Benzene	ND	0.5	ug/L					
Ethylbenzene	ND	0.5	ug/L					
Toluene	ND	0.5	ug/L					
m,p-Xylenes	ND	0.5	ug/L					
o-Xylene	ND	0.5	ug/L					
Xylenes, total	ND	0.5	ug/L					
Surrogate: Toluene-d8	*65.2*		*%*	*81.6*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L	ND			NC	30	
Volatiles									
Benzene	ND	0.5	ug/L	ND			NC	30	
Ethylbenzene	ND	0.5	ug/L	ND			NC	30	
Toluene	ND	0.5	ug/L	ND			NC	30	
m,p-Xylenes	ND	0.5	ug/L	ND			NC	30	
o-Xylene	ND	0.5	ug/L	ND			NC	30	
Surrogate: Toluene-d8	*65.7*		*%*		*82.2*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	34	25	ug/L	ND	86.0	85-115			
F2 PHCs (C10-C16)	1630	100	ug/L	ND	102	60-140			
F3 PHCs (C16-C34)	4410	100	ug/L	ND	112	60-140			
F4 PHCs (C34-C50)	2430	100	ug/L	ND	98.0	60-140			
Volatiles									
Benzene	48.1	0.5	ug/L	ND	120	60-130			
Ethylbenzene	42.3	0.5	ug/L	ND	106	60-130			
Toluene	45.5	0.5	ug/L	ND	114	60-130			
m,p-Xylenes	79.1	0.5	ug/L	ND	98.8	60-130			
o-Xylene	43.5	0.5	ug/L	ND	109	60-130			
Surrogate: Toluene-d8	*81.2*		*%*		*101*	*50-140*			

Qualifier Notes:

Sample Data Revisions:

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

CCME PHC additional information:

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.

- F1 range corrected for BTEX.

- F2 to F3 ranges corrected for appropriate PAHs where available.

- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.

- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.

- When reported, data for F4G has been processed using a silica gel cleanup.

Any use of these results implies your agreement that our total liabilty in connection with this work, however arising, shall be limited to the amount paid by you for this work, and that our employees or agents shall not under any circumstances be liable to you in connection with this work.

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Paracel ID: 2516198

Paracel Order Number (Lab Use Only): 2516198

Chain Of Custody (Lab Use Only)

Client Name: Paterson	Project Ref: PE5304	Page 1 of 1
Contact Name: Nick Sullivan	Quote #: 62960	**Turnaround Time**
Address: 9 Auriga Drive	PO #:	☐ 1 day ☐ 3 day
Telephone: 613-226-7381	E-mail: nsullivan@paterson group.ca	☐ 2 day ☒ Regular
		Date Required:

☒ REG 153/04 ☐ REG 406/19

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

Other Regulation

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

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

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Field Filtered	Sample Taken: Date	Sample Taken: Time	PHCs F1-F4+BTEX	VOCs	PAHs	Metals by ICP	Hg	CrVI	B (HWS)				
1	BH7-20-GW	GW		3		15/04/25	8:30AM	X										
2	DUP1-25	GW		3		15/04/25	8:35AM	X										
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

Comments:

Method of Delivery: Paracel Courier

Relinquished By (Sign):	Received at Depot:	Received at Lab:	Verified By: SP
Relinquished By (Print): Katharina Burley	Date/Time:	Date/Time: Apr 15 16:15	Date/Time: Apr 15, 2025 4:40pm
Date/Time: 10:00 AM 15/04/25	Temperature: °C	Temperature: 13.6	pH Verified: ☐ By:

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Certificate of Analysis

Paterson Group Consulting Engineers (Ottawa)
9 Auriga Drive
Ottawa, ON K2E 7T9
Attn: Nick Sullivan

Client PO: 63281
Project: PE5304
Custody:

Report Date: 12-Jun-2025
Order Date: 6-Jun-2025

Order #: 2523493

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

Paracel ID	Client ID
2523493-01	BH3-25-GW1
2523493-02	DUP-June 6

Approved By:

Mark Foto, M.Sc.
Laboratory Director

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
BTEX by P&T GC-MS	EPA 624 - P&T GC-MS	10-Jun-25	10-Jun-25
PCBs, total	EPA 608 - GC-ECD	9-Jun-25	9-Jun-25
PHC F1	CWS Tier 1 - P&T GC-FID	9-Jun-25	10-Jun-25
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	10-Jun-25	11-Jun-25
REG 153: PAHs by GC-MS	EPA 625 - GC-MS, extraction	10-Jun-25	11-Jun-25

Certificate of Analysis

Report Date: 12-Jun-2025

Client: **Paterson Group Consulting Engineers (Ottawa)**

Order Date: 6-Jun-2025

Client PO: **63281**

Project Description: PE5304

	Client ID:	BH3-25-GW1	DUP-June 6	-	-	-	-
	Sample Date:	06-Jun-25 09:00	06-Jun-25 09:00	-	-		
	Sample ID:	2523493-01	2523493-02	-	-		
	Matrix:	Ground Water	Ground Water	-	-		
	MDL/Units						
Volatiles							
Benzene	0.5 ug/L	<0.5	<0.5	-	-	-	-
Ethylbenzene	0.5 ug/L	<0.5	<0.5	-	-	-	-
Toluene	0.5 ug/L	<0.5	<0.5	-	-	-	-
m,p-Xylenes	0.5 ug/L	<0.5	<0.5	-	-	-	-
o-Xylene	0.5 ug/L	<0.5	<0.5	-	-	-	-
Xylenes, total	0.5 ug/L	<0.5	<0.5	-	-	-	-
Toluene-d8	Surrogate	102%	102%	-	-	-	-
Hydrocarbons							
F1 PHCs (C6-C10)	25 ug/L	<25	<25	-	-	-	-
F2 PHCs (C10-C16)	100 ug/L	<100	<100	-	-	-	-
F3 PHCs (C16-C34)	100 ug/L	<100	<100	-	-	-	-
F4 PHCs (C34-C50)	100 ug/L	<100	<100	-	-	-	-
Semi-Volatiles							
Acenaphthene	0.05 ug/L	<0.05	<0.05	-	-	-	-
Acenaphthylene	0.05 ug/L	<0.05	<0.05	-	-	-	-
Anthracene	0.01 ug/L	<0.01	<0.01	-	-	-	-
Benzo [a] anthracene	0.01 ug/L	<0.01	<0.01	-	-	-	-
Benzo [a] pyrene	0.01 ug/L	<0.01	<0.01	-	-	-	-
Benzo [b] fluoranthene	0.05 ug/L	<0.05	<0.05	-	-	-	-
Benzo [g,h,i] perylene	0.05 ug/L	<0.05	<0.05	-	-	-	-
Benzo [k] fluoranthene	0.05 ug/L	<0.05	<0.05	-	-	-	-
Chrysene	0.05 ug/L	<0.05	<0.05	-	-	-	-
Dibenzo [a,h] anthracene	0.05 ug/L	<0.05	<0.05	-	-	-	-
Fluoranthene	0.01 ug/L	<0.01	<0.01	-	-	-	-
Fluorene	0.05 ug/L	<0.05	<0.05	-	-	-	-

	Client ID:	BH3-25-GW1	DUP-June 6	-	-		
	Sample Date:	06-Jun-25 09:00	06-Jun-25 09:00	-	-	-	-
	Sample ID:	2523493-01	2523493-02	-	-		
	Matrix:	Ground Water	Ground Water	-	-		
	MDL/Units						
Semi-Volatiles							
Indeno [1,2,3-cd] pyrene	0.05 ug/L	<0.05	<0.05	-	-	-	-
1-Methylnaphthalene	0.05 ug/L	<0.05	<0.05	-	-	-	-
2-Methylnaphthalene	0.05 ug/L	<0.05	<0.05	-	-	-	-
Methylnaphthalene (1&2)	0.10 ug/L	<0.10	<0.10	-	-	-	-
Naphthalene	0.05 ug/L	<0.05	<0.05	-	-	-	-
Phenanthrene	0.05 ug/L	<0.05	<0.05	-	-	-	-
Pyrene	0.01 ug/L	<0.01	<0.01	-	-	-	-
2-Fluorobiphenyl	Surrogate	71.2%	71.1%	-	-	-	-
Terphenyl-d14	Surrogate	84.0%	81.1%	-	-	-	-
PCBs							
PCBs, total	0.05 ug/L	<0.05	<0.05	-	-	-	-
Decachlorobiphenyl	Surrogate	97.3%	96.9%	-	-	-	-

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons								
F1 PHCs (C6-C10)	ND	25	ug/L					
F2 PHCs (C10-C16)	ND	100	ug/L					
F3 PHCs (C16-C34)	ND	100	ug/L					
F4 PHCs (C34-C50)	ND	100	ug/L					
PCBs								
PCBs, total	ND	0.05	ug/L					
Surrogate: Decachlorobiphenyl	*0.217*		*%*	*86.6*	*60-140*			
Semi-Volatiles								
Acenaphthene	ND	0.05	ug/L					
Acenaphthylene	ND	0.05	ug/L					
Anthracene	ND	0.01	ug/L					
Benzo [a] anthracene	ND	0.01	ug/L					
Benzo [a] pyrene	ND	0.01	ug/L					
Benzo [b] fluoranthene	ND	0.05	ug/L					
Benzo [g,h,i] perylene	ND	0.05	ug/L					
Benzo [k] fluoranthene	ND	0.05	ug/L					
Chrysene	ND	0.05	ug/L					
Dibenzo [a,h] anthracene	ND	0.05	ug/L					
Fluoranthene	ND	0.01	ug/L					
Fluorene	ND	0.05	ug/L					
Indeno [1,2,3-cd] pyrene	ND	0.05	ug/L					
1-Methylnaphthalene	ND	0.05	ug/L					
2-Methylnaphthalene	ND	0.05	ug/L					
Methylnaphthalene (1&2)	ND	0.10	ug/L					
Naphthalene	ND	0.05	ug/L					
Phenanthrene	ND	0.05	ug/L					
Pyrene	ND	0.01	ug/L					
Surrogate: 2-Fluorobiphenyl	*14.5*		*%*	*72.3*	*50-140*			
Surrogate: Terphenyl-d14	*15.0*		*%*	*75.0*	*50-140*			
Volatiles								
Benzene	ND	0.5	ug/L					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Ethylbenzene	ND	0.5	ug/L					
Toluene	ND	0.5	ug/L					
m,p-Xylenes	ND	0.5	ug/L					
o-Xylene	ND	0.5	ug/L					
Xylenes, total	ND	0.5	ug/L					
Surrogate: Toluene-d8	*81.6*		*%*	*102*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L	ND			NC	30	
Volatiles									
Benzene	ND	0.5	ug/L	ND			NC	30	
Ethylbenzene	ND	0.5	ug/L	ND			NC	30	
Toluene	ND	0.5	ug/L	ND			NC	30	
m,p-Xylenes	ND	0.5	ug/L	ND			NC	30	
o-Xylene	ND	0.5	ug/L	ND			NC	30	
Surrogate: Toluene-d8	*82.3*		*%*		*103*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	2260	25	ug/L	ND	113	85-115			
F2 PHCs (C10-C16)	1570	100	ug/L	ND	98.3	60-140			
F3 PHCs (C16-C34)	4290	100	ug/L	ND	109	60-140			
F4 PHCs (C34-C50)	2680	100	ug/L	ND	108	60-140			
PCBs									
PCBs, total	1.14	0.05	ug/L	ND	114	65-135			
Surrogate: Decachlorobiphenyl	*0.236*		*%*		*94.4*	*60-140*			
Semi-Volatiles									
Acenaphthene	3.70	0.05	ug/L	ND	74.0	50-140			
Acenaphthylene	3.91	0.05	ug/L	ND	78.1	50-140			
Anthracene	4.08	0.01	ug/L	ND	81.6	50-140			
Benzo [a] anthracene	4.31	0.01	ug/L	ND	86.2	50-140			
Benzo [a] pyrene	4.15	0.01	ug/L	ND	82.9	50-140			
Benzo [b] fluoranthene	4.64	0.05	ug/L	ND	92.8	50-140			
Benzo [g,h,i] perylene	4.35	0.05	ug/L	ND	87.0	50-140			
Benzo [k] fluoranthene	4.43	0.05	ug/L	ND	88.7	50-140			
Chrysene	4.47	0.05	ug/L	ND	89.4	50-140			
Dibenzo [a,h] anthracene	4.85	0.05	ug/L	ND	97.0	50-140			
Fluoranthene	4.44	0.01	ug/L	ND	88.8	50-140			
Fluorene	3.72	0.05	ug/L	ND	74.4	50-140			
Indeno [1,2,3-cd] pyrene	4.61	0.05	ug/L	ND	92.2	50-140			
1-Methylnaphthalene	4.86	0.05	ug/L	ND	97.3	50-140			
2-Methylnaphthalene	4.93	0.05	ug/L	ND	98.5	50-140			
Naphthalene	4.20	0.05	ug/L	ND	84.0	50-140			
Phenanthrene	4.29	0.05	ug/L	ND	85.7	50-140			
Pyrene	4.56	0.01	ug/L	ND	91.2	50-140			
Surrogate: 2-Fluorobiphenyl	*16.7*		*%*		*83.5*	*50-140*			
Surrogate: Terphenyl-d14	*15.9*		*%*		*79.6*	*50-140*			
Volatiles									
Benzene	48.9	0.5	ug/L	ND	122	60-130			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Ethylbenzene	50.3	0.5	ug/L	ND	126	60-130			
Toluene	46.8	0.5	ug/L	ND	117	60-130			
m,p-Xylenes	93.3	0.5	ug/L	ND	117	60-130			
o-Xylene	45.2	0.5	ug/L	ND	113	60-130			
Surrogate: Toluene-d8	*81.8*		*%*		*102*	*50-140*			

Qualifier Notes:

Sample Data Revisions:

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

CCME PHC additional information:

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.

- F1 range corrected for BTEX.

- F2 to F3 ranges corrected for appropriate PAHs where available.

- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.

- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.

- When reported, data for F4G has been processed using a silica gel cleanup.

Any use of these results implies your agreement that our total liabilty in connection with this work, however arising, shall be limited to the amount paid by you for this work, and that our employees or agents shall not under any circumstances be liable to you in connection with this work.

PARACE LABORATORIES LT

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Paracel Order Number (Lab Use Only)	Chain Of Custody (Lab Use Only)
2523493	

Client Name: Paterson
Contact Name: Nick Sullivan
Address: 9 Auriga Drive
Telephone: 613-226-7381

Project Ref: PE5304
Quote #:
PO #: 63281
E-mail: mdarcy@patersongroup.ca
NSullivan@patersongroup.ca

Page 1 of 1

Turnaround Time
☐ 1 day ☐ 3 day
☐ 2 day ☑ Regular
Date Required:

☑ REG 153/04 ☐ REG 406/19

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

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

Required Analysis

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken Date	Sample Taken Time	PHCs F1-F4+BTEX	VOCs	PAHs	Metals by ICP	Hg	CrVI	B (HWS)	PCBs
1	BH3-25-GW1	GW		5	June 6, 2025		✓		✓					✓
2	DUP-June6	GW		5	↓		✓		✓					✓
3														
4														
5														
6														
7														
8														
9														
10														

Comments:

Method of Delivery: Paracel Courier

Relinquished By (Sign):	Received at Depot:	Received at Lab: JM
Relinquished By (Print): Kuldeep Panchal	Date/Time:	Date/Time: June 6/25 1607
Date/Time: June 6, 2025	Temperature: °C	Temperature: 21.9
		Verified By: SP
		Date/Time: June 6, 2025 4:18pm
		pH Verified: ☐ By:

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Certificate of Analysis

Paterson Group Consulting Engineers

154 Colonnade Road South
Nepean, ON K2E 7J5
Attn: Mark D'Arcy

Client PO: 31186
Project: PE5129
Custody: 55047

Report Date: 31-Dec-2020
Order Date: 23-Dec-2020

Order #: 2052290

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

Paracel ID	Client ID
2052290-01	BH2-AU1
2052290-02	BH3-SS3
2052290-03	Dup

Approved By:

Dale Robertson, BSc
Laboratory Director

Any use of these results implies your agreement that our total liabilty in connection with this work, however arising, shall be limited to the amount paid by you for this work, and that our employees or agents shall not under any circumstances be liable to you in connection with this work.

Certificate of Analysis

Report Date: 31-Dec-2020

Client: Paterson Group Consulting Engineers

Order Date: 23-Dec-2020

Client PO: 31186

Project Description: PE5129

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
BTEX by P&T GC-MS	EPA 8260 - P&T GC-MS	24-Dec-20	24-Dec-20
PCBs, total	SW846 8082A - GC-ECD	23-Dec-20	24-Dec-20
pH, soil	EPA 150.1 - pH probe @ 25 °C, CaCl buffered ext.	23-Dec-20	24-Dec-20
PHC F1	CWS Tier 1 - P&T GC-FID	24-Dec-20	24-Dec-20
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	24-Dec-20	29-Dec-20
REG 153: PAHs by GC-MS	EPA 8270 - GC-MS, extraction	24-Dec-20	30-Dec-20
Solids, %	Gravimetric, calculation	24-Dec-20	24-Dec-20

Certificate of Analysis

Report Date: 31-Dec-2020

Client: Paterson Group Consulting Engineers

Order Date: 23-Dec-2020

Client PO: 31186

Project Description: PE5129

	Client ID:	BH2-AU1	BH3-SS3	Dup	-
	Sample Date:	21-Dec-20 09:00	21-Dec-20 09:00	21-Dec-20 09:00	-
	Sample ID:	2052290-01	2052290-02	2052290-03	-
	MDL/Units	Soil	Soil	Soil	-
Physical Characteristics					
% Solids	0.1 % by Wt.	75.6	75.0	76.1	-
General Inorganics					
pH	0.05 pH Units	7.25	7.60	7.79	-
Volatiles					
Benzene	0.02 ug/g dry	<0.02	<0.02	<0.02	-
Ethylbenzene	0.05 ug/g dry	<0.05	<0.05	<0.05	-
Toluene	0.05 ug/g dry	<0.05	<0.05	<0.05	-
m,p-Xylenes	0.05 ug/g dry	<0.05	<0.05	<0.05	-
o-Xylene	0.05 ug/g dry	<0.05	<0.05	<0.05	-
Xylenes, total	0.05 ug/g dry	<0.05	<0.05	<0.05	-
Toluene-d8	Surrogate	122%	124%	122%	-
Hydrocarbons					
F1 PHCs (C6-C10)	7 ug/g dry	<7	<7	<7	-
F2 PHCs (C10-C16)	4 ug/g dry	<4	<4	<4	-
F3 PHCs (C16-C34)	8 ug/g dry	<8	<8	<8	-
F4 PHCs (C34-C50)	6 ug/g dry	<6	<6	<6	-
Semi-Volatiles					
Acenaphthene	0.02 ug/g dry	<0.02	-	-	-
Acenaphthylene	0.02 ug/g dry	<0.02	-	-	-
Anthracene	0.02 ug/g dry	<0.02	-	-	-
Benzo [a] anthracene	0.02 ug/g dry	<0.02	-	-	-
Benzo [a] pyrene	0.02 ug/g dry	<0.02	-	-	-
Benzo [b] fluoranthene	0.02 ug/g dry	<0.02	-	-	-
Benzo [g,h,i] perylene	0.02 ug/g dry	<0.02	-	-	-
Benzo [k] fluoranthene	0.02 ug/g dry	<0.02	-	-	-
Chrysene	0.02 ug/g dry	<0.02	-	-	-
Dibenzo [a,h] anthracene	0.02 ug/g dry	<0.02	-	-	-
Fluoranthene	0.02 ug/g dry	<0.02	-	-	-
Fluorene	0.02 ug/g dry	<0.02	-	-	-
Indeno [1,2,3-cd] pyrene	0.02 ug/g dry	<0.02	-	-	-
1-Methylnaphthalene	0.02 ug/g dry	<0.02	-	-	-
2-Methylnaphthalene	0.02 ug/g dry	<0.02	-	-	-
Methylnaphthalene (1&2)	0.04 ug/g dry	<0.04	-	-	-
Naphthalene	0.01 ug/g dry	<0.01	-	-	-
Phenanthrene	0.02 ug/g dry	<0.02	-	-	-

Certificate of Analysis

Report Date: 31-Dec-2020

Client: Paterson Group Consulting Engineers

Order Date: 23-Dec-2020

Client PO: 31186

Project Description: PE5129

	Client ID:	BH2-AU1	BH3-SS3	Dup	-
	Sample Date:	21-Dec-20 09:00	21-Dec-20 09:00	21-Dec-20 09:00	-
	Sample ID:	2052290-01	2052290-02	2052290-03	-
	MDL/Units	Soil	Soil	Soil	-
Pyrene	0.02 ug/g dry	<0.02	-	-	-
2-Fluorobiphenyl	Surrogate	86.8%	-	-	-
Terphenyl-d14	Surrogate	111%	-	-	-
PCBs					
PCBs, total	0.05 ug/g dry	<0.05	-	-	-
Decachlorobiphenyl	Surrogate	102%	-	-	-

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g						
F2 PHCs (C10-C16)	ND	4	ug/g						
F3 PHCs (C16-C34)	ND	8	ug/g						
F4 PHCs (C34-C50)	ND	6	ug/g						
PCBs									
PCBs, total	ND	0.05	ug/g						
Surrogate: Decachlorobiphenyl	*0.0901*		*ug/g*		*90.1*	*60-140*			
Semi-Volatiles									
Acenaphthene	ND	0.02	ug/g						
Acenaphthylene	ND	0.02	ug/g						
Anthracene	ND	0.02	ug/g						
Benzo [a] anthracene	ND	0.02	ug/g						
Benzo [a] pyrene	ND	0.02	ug/g						
Benzo [b] fluoranthene	ND	0.02	ug/g						
Benzo [g,h,i] perylene	ND	0.02	ug/g						
Benzo [k] fluoranthene	ND	0.02	ug/g						
Chrysene	ND	0.02	ug/g						
Dibenzo [a,h] anthracene	ND	0.02	ug/g						
Fluoranthene	ND	0.02	ug/g						
Fluorene	ND	0.02	ug/g						
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g						
1-Methylnaphthalene	ND	0.02	ug/g						
2-Methylnaphthalene	ND	0.02	ug/g						
Methylnaphthalene (1&2)	ND	0.04	ug/g						
Naphthalene	ND	0.01	ug/g						
Phenanthrene	ND	0.02	ug/g						
Pyrene	ND	0.02	ug/g						
Surrogate: 2-Fluorobiphenyl	*1.06*		*ug/g*		*79.8*	*50-140*			
Surrogate: Terphenyl-d14	*1.57*		*ug/g*		*118*	*50-140*			
Volatiles									
Benzene	ND	0.02	ug/g						
Ethylbenzene	ND	0.05	ug/g						
Toluene	ND	0.05	ug/g						
m,p-Xylenes	ND	0.05	ug/g						
o-Xylene	ND	0.05	ug/g						
Xylenes, total	ND	0.05	ug/g						
Surrogate: Toluene-d8	*9.73*		*ug/g*		*122*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
pH	7.62	0.05	pH Units	7.48			1.9	2.3	
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g dry	ND			NC	40	
F2 PHCs (C10-C16)	ND	4	ug/g dry	ND			NC	30	
F3 PHCs (C16-C34)	ND	8	ug/g dry	ND			NC	30	
F4 PHCs (C34-C50)	ND	6	ug/g dry	ND			NC	30	
PCBs									
PCBs, total	ND	0.05	ug/g dry	ND			NC	40	
Surrogate: Decachlorobiphenyl	*0.108*		*ug/g dry*		*98.4*	*60-140*			
Physical Characteristics									
% Solids	91.4	0.1	% by Wt.	91.7			0.2	25	
Semi-Volatiles									
Acenaphthene	ND	0.02	ug/g dry	ND			NC	40	
Acenaphthylene	ND	0.02	ug/g dry	ND			NC	40	
Anthracene	ND	0.02	ug/g dry	ND			NC	40	
Benzo [a] anthracene	ND	0.02	ug/g dry	ND			NC	40	
Benzo [a] pyrene	ND	0.02	ug/g dry	ND			NC	40	
Benzo [b] fluoranthene	ND	0.02	ug/g dry	ND			NC	40	
Benzo [g,h,i] perylene	ND	0.02	ug/g dry	ND			NC	40	
Benzo [k] fluoranthene	ND	0.02	ug/g dry	ND			NC	40	
Chrysene	ND	0.02	ug/g dry	ND			NC	40	
Dibenzo [a,h] anthracene	ND	0.02	ug/g dry	ND			NC	40	
Fluoranthene	ND	0.02	ug/g dry	ND			NC	40	
Fluorene	ND	0.02	ug/g dry	ND			NC	40	
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g dry	ND			NC	40	
1-Methylnaphthalene	ND	0.02	ug/g dry	ND			NC	40	
2-Methylnaphthalene	ND	0.02	ug/g dry	ND			NC	40	
Naphthalene	ND	0.01	ug/g dry	ND			NC	40	
Phenanthrene	ND	0.02	ug/g dry	ND			NC	40	
Pyrene	ND	0.02	ug/g dry	ND			NC	40	
Surrogate: 2-Fluorobiphenyl	*1.49*		*ug/g dry*		*84.6*	*50-140*			
Surrogate: Terphenyl-d14	*1.97*		*ug/g dry*		*112*	*50-140*			
Volatiles									
Benzene	ND	0.02	ug/g dry	ND			NC	50	
Ethylbenzene	ND	0.05	ug/g dry	ND			NC	50	
Toluene	ND	0.05	ug/g dry	ND			NC	50	
m,p-Xylenes	ND	0.05	ug/g dry	ND			NC	50	
o-Xylene	ND	0.05	ug/g dry	ND			NC	50	
Surrogate: Toluene-d8	*13.5*		*ug/g dry*		*122*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	207	7	ug/g	ND	104	80-120			
F2 PHCs (C10-C16)	119	4	ug/g	ND	112	60-140			
F3 PHCs (C16-C34)	327	8	ug/g	ND	126	60-140			
F4 PHCs (C34-C50)	224	6	ug/g	ND	136	60-140			
PCBs									
PCBs, total	0.379	0.05	ug/g	ND	86.6	60-140			
Surrogate: Decachlorobiphenyl	*0.101*		*ug/g*		*92.7*	*60-140*			
Semi-Volatiles									
Acenaphthene	0.176	0.02	ug/g	ND	79.8	50-140			
Acenaphthylene	0.148	0.02	ug/g	ND	67.0	50-140			
Anthracene	0.150	0.02	ug/g	ND	68.0	50-140			
Benzo [a] anthracene	0.116	0.02	ug/g	ND	52.6	50-140			
Benzo [a] pyrene	0.143	0.02	ug/g	ND	64.6	50-140			
Benzo [b] fluoranthene	0.158	0.02	ug/g	ND	71.5	50-140			
Benzo [g,h,i] perylene	0.147	0.02	ug/g	ND	66.7	50-140			
Benzo [k] fluoranthene	0.145	0.02	ug/g	ND	65.6	50-140			
Chrysene	0.155	0.02	ug/g	ND	70.5	50-140			
Dibenzo [a,h] anthracene	0.157	0.02	ug/g	ND	71.1	50-140			
Fluoranthene	0.144	0.02	ug/g	ND	65.4	50-140			
Fluorene	0.158	0.02	ug/g	ND	71.5	50-140			
Indeno [1,2,3-cd] pyrene	0.143	0.02	ug/g	ND	64.9	50-140			
1-Methylnaphthalene	0.192	0.02	ug/g	ND	86.9	50-140			
2-Methylnaphthalene	0.191	0.02	ug/g	ND	86.4	50-140			
Naphthalene	0.198	0.01	ug/g	ND	89.9	50-140			
Phenanthrene	0.146	0.02	ug/g	ND	66.4	50-140			
Pyrene	0.144	0.02	ug/g	ND	65.5	50-140			
Surrogate: 2-Fluorobiphenyl	*1.33*		*ug/g*		*75.7*	*50-140*			
Surrogate: Terphenyl-d14	*1.69*		*ug/g*		*96.0*	*50-140*			
Volatiles									
Benzene	4.97	0.02	ug/g	ND	124	60-130			
Ethylbenzene	4.98	0.05	ug/g	ND	125	60-130			
Toluene	5.20	0.05	ug/g	ND	130	60-130			
m,p-Xylenes	9.91	0.05	ug/g	ND	124	60-130			
o-Xylene	5.08	0.05	ug/g	ND	127	60-130			
Surrogate: Toluene-d8	*7.55*		*ug/g*		*94.4*	*50-140*			

Qualifier Notes:

None

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

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

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

CCME PHC additional information:

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

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Paracel ID: 2052290

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Paracel Order Number (Lab Use Only)	Chain Of Custody (Lab Use Only)
2052290	№ 55047

Client Name: PATERSON GROUP	Project Ref: PE5129	Page 1 of 1
Contact Name: MARK D'ARCY	Quote #:	Turnaround Time
Address: 154 Colonnade Road	PO #: 31186	☐ 1 day ☐ 3 day ☑ Regular ☐ 2 day
Telephone: 613-226-7381	E-mail: mdarcy@patersongroup.ca	Date Required:

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

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

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken: Date	Sample Taken: Time	Required Analysis: BTEX / PHCs	PAH	PCB	PH
1	BH2 - AU1	~~AS~~ S		2	Dec 21/20		✓	✓	✓	✓
2	BH3 - SS3	S		2	Dec 21/20		✓			✓
3	DUP	S		2	Dec 21/20		✓			✓
4										
5										
6										
7										
8										
9										
10										

Comments:

Method of Delivery: PARACEL COURIER

Relinquished By (Sign):	Received By Driver/Depot: M. Jerome	Received at Lab:	Verified By:
Relinquished By (Print): Joshua Ramsey	Date/Time: 23/12/20 3:22	Date/Time: 12-23-20 16:16	Date/Time: 12-23-20 16:16
Date/Time: Dec 23/2020	Temperature: °C FH	Temperature: 4.9 °C	pH Verified: ☐ By:

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Certificate of Analysis

Paterson Group Consulting Engineers

154 Colonnade Road South
Nepean, ON K2E 7J5
Attn: Mark D'Arcy

Client PO: 31620
Project: PG5129
Custody: 55618

Report Date: 8-Jan-2021
Order Date: 5-Jan-2021

Order #: 2102143

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

Paracel ID	Client ID
2102143-01	BH7-SS3
2102143-02	BH8-SS3

Approved By:

Dale Robertson, BSc
Laboratory Director

Any use of these results implies your agreement that our total liabilty in connection with this work, however arising, shall be limited to the amount paid by you for this work, and that our employees or agents shall not under any circumstances be liable to you in connection with this work.

Certificate of Analysis

Report Date: 08-Jan-2021

Client: Paterson Group Consulting Engineers

Order Date: 5-Jan-2021

Client PO: 31620

Project Description: PG5129

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
BTEX by P&T GC-MS	EPA 8260 - P&T GC-MS	6-Jan-21	7-Jan-21
PHC F1	CWS Tier 1 - P&T GC-FID	6-Jan-21	7-Jan-21
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	5-Jan-21	7-Jan-21
Solids, %	Gravimetric, calculation	5-Jan-21	6-Jan-21

Certificate of Analysis

Report Date: 08-Jan-2021

Client: Paterson Group Consulting Engineers

Order Date: 5-Jan-2021

Client PO: 31620

Project Description: PG5129

	Client ID:	BH7-SS3	BH8-SS3	-	-
	Sample Date:	21-Dec-20 09:00	21-Dec-20 09:00	-	-
	Sample ID:	2102143-01	2102143-02	-	-
	MDL/Units	Soil	Soil	-	-
Physical Characteristics					
% Solids	0.1 % by Wt.	79.1	77.7	-	-
Volatiles					
Benzene	0.02 ug/g dry	<0.02 [1]	<0.02 [1]	-	-
Ethylbenzene	0.05 ug/g dry	<0.05 [1]	<0.05 [1]	-	-
Toluene	0.05 ug/g dry	<0.05 [1]	<0.05 [1]	-	-
m,p-Xylenes	0.05 ug/g dry	<0.05 [1]	<0.05 [1]	-	-
o-Xylene	0.05 ug/g dry	<0.05 [1]	<0.05 [1]	-	-
Xylenes, total	0.05 ug/g dry	<0.05 [1]	<0.05 [1]	-	-
Toluene-d8	Surrogate	109% [1]	108% [1]	-	-
Hydrocarbons					
F1 PHCs (C6-C10)	7 ug/g dry	<7 [1]	<7 [1]	-	-
F2 PHCs (C10-C16)	4 ug/g dry	<4 [1]	<4 [1]	-	-
F3 PHCs (C16-C34)	8 ug/g dry	<8 [1]	<8 [1]	-	-
F4 PHCs (C34-C50)	6 ug/g dry	<6 [1]	<6 [1]	-	-

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g						
F2 PHCs (C10-C16)	ND	4	ug/g						
F3 PHCs (C16-C34)	ND	8	ug/g						
F4 PHCs (C34-C50)	ND	6	ug/g						
Volatiles									
Benzene	ND	0.02	ug/g						
Ethylbenzene	ND	0.05	ug/g						
Toluene	ND	0.05	ug/g						
m,p-Xylenes	ND	0.05	ug/g						
o-Xylene	ND	0.05	ug/g						
Xylenes, total	ND	0.05	ug/g						
Surrogate: Toluene-d8	*8.45*		*ug/g*		*106*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g dry	ND			NC	40	
F2 PHCs (C10-C16)	ND	4	ug/g dry	ND			NC	30	
F3 PHCs (C16-C34)	44	8	ug/g dry	50			13.7	30	
F4 PHCs (C34-C50)	44	6	ug/g dry	60			NC	30	
Physical Characteristics									
% Solids	91.3	0.1	% by Wt.	91.5			0.2	25	
Volatiles									
Benzene	ND	0.02	ug/g dry	ND			NC	50	
Ethylbenzene	ND	0.05	ug/g dry	ND			NC	50	
Toluene	ND	0.05	ug/g dry	ND			NC	50	
m,p-Xylenes	ND	0.05	ug/g dry	ND			NC	50	
o-Xylene	ND	0.05	ug/g dry	ND			NC	50	
Surrogate: Toluene-d8	*9.28*		*ug/g dry*		*108*	*50-140*			

Certificate of Analysis

Report Date: 08-Jan-2021

Client: Paterson Group Consulting Engineers

Order Date: 5-Jan-2021

Client PO: 31620

Project Description: PG5129

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	207	7	ug/g	ND	104	80-120			
F2 PHCs (C10-C16)	94	4	ug/g	ND	95.9	60-140			
F3 PHCs (C16-C34)	292	8	ug/g	50	101	60-140			
F4 PHCs (C34-C50)	214	6	ug/g	60	102	60-140			
Volatiles									
Benzene	4.90	0.02	ug/g	ND	122	60-130			
Ethylbenzene	4.45	0.05	ug/g	ND	111	60-130			
Toluene	4.63	0.05	ug/g	ND	116	60-130			
m,p-Xylenes	8.46	0.05	ug/g	ND	106	60-130			
o-Xylene	4.27	0.05	ug/g	ND	107	60-130			
Surrogate: Toluene-d8	*8.16*		*ug/g*		*102*	*50-140*			

Qualifier Notes:

Login Qualifiers :

Sample - One or more parameter received past hold time - PHC's & BTEX

Applies to samples: BH7-SS3, BH8-SS3

Sample Qualifiers :

1 : Holding time had been exceeded upon receipt of the sample at the laboratory.

QC Qualifiers :

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

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

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

CCME PHC additional information:

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

PARACEL LABORATORIES LTD.

Paracel ID: 2102143

Paracel Order Number (Lab Use Only)	Chain Of Custody (Lab Use Only)
2102143	№ 55618

Client Name: Paterson	Project Ref: PG5692	Page __ of __
Contact Name: Mark Darcy	Quote #:	Turnaround Time
Address: 154 Colonnade	PO #: 31620	☐ 1 day ☐ 3 day ☐ 2 day ☒ Regular
Telephone: 613 226 7381	E-mail: MDarcy@Patersongroup.ca	Date Required:

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

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

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken Date	Sample Taken Time	Required Analysis: Btex + PHC F1-F4
1	BH7-553	S		2	Dec 21 2020		✓
2	BH8-553	S		2	Dec 21 2020		✓
3							
4							
5							
6							
7							
8							
9							
10							

Comments:

Method of Delivery: PARACEL COURIER

Relinquished By (Sign): G.Pat	Received By Driver/Depot: M. Blouin	Received at Lab:	Verified By:
Relinquished By (Print): Grant Paterson	Date/Time: 05/01/21 1:47	Date/Time: 05 Jan 2021 1435	Date/Time: 1-5-21 1845
Date/Time: Jan 5 2021	Temperature: °C PM	Temperature: 9.1 °C	pH Verified: ☐ By:

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Certificate of Analysis

Paterson Group Consulting Engineers (Ottawa)
9 Auriga Drive
Ottawa, ON K2E 7T9
Attn: Nick Sullivan

Client PO: 63271
Project: PE5304
Custody:

Report Date: 10-Jun-2025
Order Date: 4-Jun-2025

Order #: 2523290

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

Paracel ID	Client ID
2523290-01	BH3-25-AU1
2523290-02	DUP-1

Approved By:

Mark Foto, M.Sc.
Laboratory Director

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
BTEX by P&T GC-MS	EPA 8260 - P&T GC-MS	6-Jun-25	7-Jun-25
PCBs, total	SW846 8082A - GC-ECD	5-Jun-25	5-Jun-25
PHC F1	CWS Tier 1 - P&T GC-FID	6-Jun-25	7-Jun-25
PHC F4G (gravimetric)	CWS Tier 1 - Extraction Gravimetric	6-Jun-25	6-Jun-25
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	5-Jun-25	6-Jun-25
REG 153: PAHs by GC-MS	EPA 8270 - GC-MS, extraction	5-Jun-25	9-Jun-25
Solids, %	CWS Tier 1 - Gravimetric	5-Jun-25	5-Jun-25

	Client ID:	BH3-25-AU1	DUP-1	-	-	-	-
	Sample Date:	29-May-25 09:00	29-May-25 09:00	-	-		
	Sample ID:	2523290-01	2523290-02	-	-		
	Matrix:	Soil	Soil	-	-		
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	91.0	91.8	-	-	-	-
Volatiles							
Benzene	0.02 ug/g	<0.02	<0.02	-	-	-	-
Ethylbenzene	0.05 ug/g	<0.05	<0.05	-	-	-	-
Toluene	0.05 ug/g	<0.05	<0.05	-	-	-	-
m,p-Xylenes	0.05 ug/g	<0.05	<0.05	-	-	-	-
o-Xylene	0.05 ug/g	<0.05	<0.05	-	-	-	-
Xylenes, total	0.05 ug/g	<0.05	<0.05	-	-	-	-
Toluene-d8	Surrogate	109%	110%	-	-	-	-
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g	<7	<7	-	-	-	-
F2 PHCs (C10-C16)	4 ug/g	<4	<4	-	-	-	-
F3 PHCs (C16-C34)	8 ug/g	76	33	-	-	-	-
F4 PHCs (C34-C50)	6 ug/g	177 [1]	86	-	-	-	-
F4G PHCs (gravimetric)	50 ug/g	264	-	-	-	-	-
Semi-Volatiles							
Acenaphthene	0.02 ug/g	<0.02	<0.02	-	-	-	-
Acenaphthylene	0.02 ug/g	<0.02	<0.02	-	-	-	-
Anthracene	0.02 ug/g	<0.02	<0.02	-	-	-	-
Benzo [a] anthracene	0.02 ug/g	<0.02	<0.02	-	-	-	-
Benzo [a] pyrene	0.02 ug/g	<0.02	<0.02	-	-	-	-
Benzo [b] fluoranthene	0.02 ug/g	<0.02	<0.02	-	-	-	-
Benzo [g,h,i] perylene	0.02 ug/g	<0.02	<0.02	-	-	-	-
Benzo [k] fluoranthene	0.02 ug/g	<0.02	<0.02	-	-	-	-
Chrysene	0.02 ug/g	<0.02	<0.02	-	-	-	-

	Client ID:	BH3-25-AU1	DUP-1	-	-	-	-
	Sample Date:	29-May-25 09:00	29-May-25 09:00	-	-		
	Sample ID:	2523290-01	2523290-02	-	-		
	Matrix:	Soil	Soil	-	-		
	MDL/Units						
Semi-Volatiles							
Dibenzo [a,h] anthracene	0.02 ug/g	<0.02	<0.02	-	-	-	-
Fluoranthene	0.02 ug/g	<0.02	<0.02	-	-	-	-
Fluorene	0.02 ug/g	<0.02	<0.02	-	-	-	-
Indeno [1,2,3-cd] pyrene	0.02 ug/g	<0.02	<0.02	-	-	-	-
1-Methylnaphthalene	0.02 ug/g	<0.02	<0.02	-	-	-	-
2-Methylnaphthalene	0.02 ug/g	<0.02	<0.02	-	-	-	-
Methylnaphthalene (1&2)	0.04 ug/g	<0.04	<0.04	-	-	-	-
Naphthalene	0.01 ug/g	<0.01	<0.01	-	-	-	-
Phenanthrene	0.02 ug/g	<0.02	<0.02	-	-	-	-
Pyrene	0.02 ug/g	<0.02	<0.02	-	-	-	-
2-Fluorobiphenyl	Surrogate	99.2%	84.1%	-	-	-	-
Terphenyl-d14	Surrogate	93.6%	98.0%	-	-	-	-
PCBs							
PCBs, total	0.05 ug/g	<0.05	<0.05	-	-	-	-
Decachlorobiphenyl	Surrogate	119%	116%	-	-	-	-

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons								
F1 PHCs (C6-C10)	ND	7	ug/g					
F2 PHCs (C10-C16)	ND	4	ug/g					
F3 PHCs (C16-C34)	ND	8	ug/g					
F4 PHCs (C34-C50)	ND	6	ug/g					
F4G PHCs (gravimetric)	ND	50	ug/g					
PCBs								
PCBs, total	ND	0.05	ug/g					
Surrogate: Decachlorobiphenyl	*0.0643*		*%*	*129*	*60-140*			
Semi-Volatiles								
Acenaphthene	ND	0.02	ug/g					
Acenaphthylene	ND	0.02	ug/g					
Anthracene	ND	0.02	ug/g					
Benzo [a] anthracene	ND	0.02	ug/g					
Benzo [a] pyrene	ND	0.02	ug/g					
Benzo [b] fluoranthene	ND	0.02	ug/g					
Benzo [g,h,i] perylene	ND	0.02	ug/g					
Benzo [k] fluoranthene	ND	0.02	ug/g					
Chrysene	ND	0.02	ug/g					
Dibenzo [a,h] anthracene	ND	0.02	ug/g					
Fluoranthene	ND	0.02	ug/g					
Fluorene	ND	0.02	ug/g					
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g					
1-Methylnaphthalene	ND	0.02	ug/g					
2-Methylnaphthalene	ND	0.02	ug/g					
Methylnaphthalene (1&2)	ND	0.04	ug/g					
Naphthalene	ND	0.01	ug/g					
Phenanthrene	ND	0.02	ug/g					
Pyrene	ND	0.02	ug/g					
Surrogate: 2-Fluorobiphenyl	*0.975*		*%*	*73.1*	*50-140*			
Surrogate: Terphenyl-d14	*0.908*		*%*	*68.1*	*50-140*			
Volatiles								

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Benzene	ND	0.02	ug/g					
Ethylbenzene	ND	0.05	ug/g					
Toluene	ND	0.05	ug/g					
m,p-Xylenes	ND	0.05	ug/g					
o-Xylene	ND	0.05	ug/g					
Xylenes, total	ND	0.05	ug/g					
Surrogate: Toluene-d8	*8.30*		*%*	*104*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g	ND			NC	40	
F2 PHCs (C10-C16)	ND	4	ug/g	ND			NC	30	
F3 PHCs (C16-C34)	ND	8	ug/g	ND			NC	30	
F4 PHCs (C34-C50)	ND	6	ug/g	ND			NC	30	
PCBs									
PCBs, total	ND	0.05	ug/g	ND			NC	40	
Surrogate: Decachlorobiphenyl	*0.0609*		*%*		*111*	*60-140*			
Physical Characteristics									
% Solids	81.4	0.1	% by Wt.	80.2			1.5	25	
Semi-Volatiles									
Acenaphthene	ND	0.02	ug/g	ND			NC	40	
Acenaphthylene	ND	0.02	ug/g	ND			NC	40	
Anthracene	ND	0.02	ug/g	ND			NC	40	
Benzo [a] anthracene	ND	0.02	ug/g	ND			NC	40	
Benzo [a] pyrene	ND	0.02	ug/g	ND			NC	40	
Benzo [b] fluoranthene	ND	0.02	ug/g	ND			NC	40	
Benzo [g,h,i] perylene	ND	0.02	ug/g	ND			NC	40	
Benzo [k] fluoranthene	ND	0.02	ug/g	ND			NC	40	
Chrysene	ND	0.02	ug/g	ND			NC	40	
Dibenzo [a,h] anthracene	ND	0.02	ug/g	ND			NC	40	
Fluoranthene	ND	0.02	ug/g	ND			NC	40	
Fluorene	ND	0.02	ug/g	ND			NC	40	
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g	ND			NC	40	
1-Methylnaphthalene	ND	0.02	ug/g	ND			NC	40	
2-Methylnaphthalene	ND	0.02	ug/g	ND			NC	40	
Naphthalene	ND	0.01	ug/g	ND			NC	40	
Phenanthrene	ND	0.02	ug/g	ND			NC	40	
Pyrene	ND	0.02	ug/g	ND			NC	40	
Surrogate: 2-Fluorobiphenyl	*1.30*		*%*		*81.6*	*50-140*			
Surrogate: Terphenyl-d14	*1.10*		*%*		*69.0*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Volatiles									
Benzene	ND	0.02	ug/g	ND			NC	50	
Ethylbenzene	ND	0.05	ug/g	ND			NC	50	
Toluene	ND	0.05	ug/g	ND			NC	50	
m,p-Xylenes	ND	0.05	ug/g	ND			NC	50	
o-Xylene	ND	0.05	ug/g	ND			NC	50	
Surrogate: Toluene-d8	*10.0*		*%*		*110*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	173	7	ug/g	ND	100	85-115			
F2 PHCs (C10-C16)	93	4	ug/g	ND	99.2	60-140			
F3 PHCs (C16-C34)	253	8	ug/g	ND	110	60-140			
F4 PHCs (C34-C50)	149	6	ug/g	ND	102	60-140			
F4G PHCs (gravimetric)	820	50	ug/g	ND	82.0	80-120			
PCBs									
PCBs, total	0.478	0.05	ug/g	ND	109	60-140			
Surrogate: Decachlorobiphenyl	*0.0617*		*%*		*112*	*60-140*			
Semi-Volatiles									
Acenaphthene	0.117	0.02	ug/g	ND	58.6	50-140			
Acenaphthylene	0.114	0.02	ug/g	ND	57.5	50-140			
Anthracene	0.100	0.02	ug/g	ND	50.4	50-140			
Benzo [a] anthracene	0.105	0.02	ug/g	ND	52.7	50-140			
Benzo [a] pyrene	0.101	0.02	ug/g	ND	50.5	50-140			
Benzo [b] fluoranthene	0.104	0.02	ug/g	ND	52.4	50-140			
Benzo [g,h,i] perylene	0.131	0.02	ug/g	ND	66.0	50-140			
Benzo [k] fluoranthene	0.114	0.02	ug/g	ND	57.1	50-140			
Chrysene	0.111	0.02	ug/g	ND	55.9	50-140			
Dibenzo [a,h] anthracene	0.136	0.02	ug/g	ND	68.3	50-140			
Fluoranthene	0.121	0.02	ug/g	ND	60.9	50-140			
Fluorene	0.121	0.02	ug/g	ND	61.0	50-140			
Indeno [1,2,3-cd] pyrene	0.126	0.02	ug/g	ND	63.2	50-140			
1-Methylnaphthalene	0.181	0.02	ug/g	ND	90.9	50-140			
2-Methylnaphthalene	0.141	0.02	ug/g	ND	70.6	50-140			
Naphthalene	0.118	0.01	ug/g	ND	59.3	50-140			
Phenanthrene	0.108	0.02	ug/g	ND	54.4	50-140			
Pyrene	0.115	0.02	ug/g	ND	57.9	50-140			
Surrogate: 2-Fluorobiphenyl	*0.998*		*%*		*62.7*	*50-140*			
Surrogate: Terphenyl-d14	*0.939*		*%*		*59.0*	*50-140*			
Volatiles									

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Benzene	3.01	0.02	ug/g	ND	75.2	60-130			
Ethylbenzene	4.82	0.05	ug/g	ND	120	60-130			
Toluene	4.98	0.05	ug/g	ND	125	60-130			
m,p-Xylenes	10.0	0.05	ug/g	ND	125	60-130			
o-Xylene	5.12	0.05	ug/g	ND	128	60-130			
Surrogate: Toluene-d8	*8.27*		*%*		*103*	*50-140*			

Qualifier Notes:

Sample Qualifiers :

1: GC-FID signal did not return to baseline by C50

Applies to Samples: BH3-25-AU1

Sample Data Revisions:

None

Certificate of Analysis

Report Date: 10-Jun-2025

Client: **Paterson Group Consulting Engineers (Ottawa)**

Order Date: 4-Jun-2025

Client PO: 63271

Project Description: PE5304

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

Soil results are reported on a dry weight basis unlesss otherwise noted.

Where %Solids is reported, moisture loss includes the loss of volatile hydrocarbons.

CCME PHC additional information:

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.

- F1 range corrected for BTEX.

- F2 to F3 ranges corrected for appropriate PAHs where available.

- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.

- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.

- When reported, data for F4G has been processed using a silica gel cleanup.

Any use of these results implies your agreement that our total liabilty in connection with this work, however arising, shall be limited to the amount paid by you for this work, and that our employees or agents shall not under any circumstances be liable to you in connection with this work.

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Paracel Order Number (Lab Use Only)	Chain Of Custody (Lab Use Only)
2523290	

Client Name: Paterson Group	Project Ref: PE5304	Page 1 of 1
Contact Name: Nick Sullivan	Quote #:	
Address: 9 Auriga Drive, Ottawa, Ontario, K2E 7T9	PO #: 63271	Turnaround Time: ☐ 1 day ☐ 3 day ☐ 2 day ☒ Regular
Telephone: 613-226-7381	E-mail: nsullivan@patersongroup.ca	Date Required:

☒ REG 153/04 ☐ REG 406/19

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

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

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

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken: Date	Sample Taken: Time	Required Analysis: BTEX	PHCs (F1-F4)	PAHs	PCBs
1	BH3-25-AU1	S		~~3~~ 2	29-MAY-2025		✔	✔	✔	✔
2	DUP-1	S		~~3~~ 2	29-MAY-2025		✔	✔	✔	✔
3										
4										
5										
6										
7										
8										
9										
10										

Comments:

Method of Delivery: Paracel Courier

Relinquished By (Sign): N. Sullivan	Received at Depot:	Received at Lab: LJT	Verified By: SD
Relinquished By (Print): Nick Sullivan	Date/Time:	Date/Time: 04/06/25 16:16	Date/Time: June 4, 2025 4:47 PM
Date/Time: June 4, 2025 @ 3:00 PM	Temperature: °C	Temperature: 22.9°C	pH Verified: ☐ By: