February 19, 2025
File: PE4914-LET.05

Consulting Engineers
9 Auriga Drive
Ottawa, Ontario
K2E 7T9
Tel: (613) 226-7381

Geotechnical Engineering
Environmental Engineering
Hydrogeology
Materials Testing
Building Science
Rural Development Design
Temporary Shoring Design
Retaining Wall Design
Noise and Vibration Studies

patersongroup.ca

Taggart (O'Connor) Corporation
225 Metcalfe Street, Suite 708
Ottawa, Ontario
K2P 1P9

Attention: **Mr. Kyle Kazda**

Subject: **Phase II-Environmental Site Assessment Update**
267 O'Connor Street
Ottawa, Ontario

Dear Sir,

Further to your request, Paterson Group (Paterson) has completed a Phase II Environmental Site Assessment (ESA) Update for the aforementioned property. This report updates a Phase II ESA Update entitled "Phase II - Environmental Site Assessment Update, 267 O'Connor Street, Ottawa, Ontario" prepared by Paterson Group, dated August 19, 2020.

This update report is intended to meet the requirements for an updated Phase II ESA, as per the MECP O.Reg. 153/04, as amended. This update report is to be read in conjunction with the 2020 report.

Background Information

The Phase II Property is occupied by a multi-storey medical/office building with associated parking areas and is situated in a mixed-use urban setting, in the City of Ottawa, Ontario, which is shown on Figure 1 - Key Plan, following the body of this report.

The adjacent properties are generally at the same grade as the Phase II ESA property, while the regional topography slopes downwards towards the north and east. Site drainage consists mainly of sheet flow to catch basins located on the Phase II ESA property and along the adjacent roadways.

Past Investigations

- ❒ Phase I Environmental Site Assessment, Commercial Property, 267 O'Connor Street, Ottawa, Ontario", prepared by Paterson Group. Dated March 19, 2014.

Based on the historical review and site visit, several potentially contaminating activities (PCAs) which result in Areas of Potential Environmental Concern (APEC) on the Phase I ESA property were identified. The following APECs were considered to exist on the Phase I ESA property:

- ❒ Existing Above Ground Storage Tank – An above ground storage tank was identified in the basement mechanical room of the office building.
- ❒ Fill Material of Unknown Quality – Fill Material of Unknown Quality was identified during previous subsurface investigations on the Phase I ESA property.
- ❒ Former Portrait Studio – A former portrait studio was present in the northeast corner of the Phase I ESA property.

No other PCAs considered to represent APECs on the Phase I ESA property were identified during the Phase I ESA.

- ❒ "Phase II Environmental Site Assessment, Commercial Property, 267 O'Connor Street, Ottawa, Ontario", prepared by Paterson Group. Dated April 8, 2014.

Paterson drilled three boreholes and installed two groundwater monitoring wells as part of the Phase II ESA. Paterson identified fill material in one borehole which exceeded the MECP Table 3 Residential Standards for Barium and Vanadium. All groundwater samples were in compliance with the MECP Table 3 Standards.

A remediation was recommended to be completed in conjunction with the redevelopment of the property. No further actions were recommended.

Paterson completed a Phase I ESA Update in August 2020. Based on the report, several potentially contaminating activities were identified on the Phase I ESA property and within the Phase I ESA study area. Four of these PCAs were identified on the Phase I ESA property and are considered APECs.

- ❒ APEC1 – Existing AST
- ❒ APEC2 – Former Portrait Studio
- ❒ APEC3 – Fill Material of Unknown Quality
- ❒ APEC4 – Existing Transformer.

Based on a review of the past investigations, Paterson completed additional Phase II ESA work to address APEC1 and APEC4.

- ❒ “Phase I Environmental Site Assessment Update, Commercial Property, 267 O’Connor Street, Ottawa, Ontario”, prepared by Paterson Group. Dated January 31, 2025. Prepared for: Mastercraft Starwood.

Based on the report, there are no new potential environmental concerns regarding the Phase I Property, however, it was deemed that two of the APECs (AST and transformer) remained existing APECs. As a result, it was recommended that the 2020 Phase II ESA be updated with current groundwater data for the location of these APECs.

Applicable Site Condition Standard

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

- ❒ Coarse-grained soil conditions;
- ❒ Full depth soil conditions;
- ❒ Non-potable groundwater conditions; and
- ❒ Commercial land use.

Section 35 of O.Reg. 153/04 does apply to the Phase II Property in that properties within the Phase I Study Area rely upon municipal drinking water.

Section 41 of O.Reg. 153/04 does not apply to the Phase II Property, as the property is not within 30m of an environmentally sensitive area and the pH of the soil is between 5 and 9.

Section 43.1 of the Regulation does not apply to the Phase II Property in that the Phase II Property is not a Shallow Soil Property and is not within 30m of a water body.

Coarse-grained soil standards were chosen as a conservative approach as grain size analysis has not been completed for the Phase II Property.

Impediments

No impediments were encountered during this Phase II ESA Update.

Investigation Method

Paterson completed groundwater sampling at BH3-14 and BH4-20 to update the groundwater quality at the Phase II ESA property. Groundwater levels were measured and then the wells were purged prior to collecting groundwater samples and a duplicate sample on September 27, 2023 by Paterson.

Soil Quality

As part of the 2014 Phase II ESA, three soil samples were submitted for laboratory analysis of metals, mercury (Hg) and hexavalent chromium (CrVI). Based on the analytical test results, all soil sample parameter concentrations comply with the MECP Table 3 Residential Standards with the exception of the barium and vanadium concentrations in soil sample BH3-SS1, which exceed the MECP Table 3 Standards.

As part of the 2020 Phase II ESA Update, one soil sample was submitted for laboratory analysis of BTEX, PHCs and PCBs. Based on the analytical test results, all soil sample parameter concentrations comply with the MECP Table 3 Residential Standards.

It is our opinion that the soil analytical test results from the 2014 and 2020 Phase II ESA remain valid and are considered sufficient for the purposes of this Phase II ESA Update.

Groundwater Quality Update

Two groundwater samples, plus one duplicate sample, obtained from the monitoring wells installed in BH3-14 and BH4-20 were submitted for laboratory analysis of BTEX, PHCs, metals and PCBs. The results of the analytical testing are presented in Table 1, as well as on the laboratory certificate of analysis, appended to this report.

BTEX and PHCs (F_1-F_4)

No BTEX or PHC concentrations were detected in the groundwater samples. All of the analytical results comply with the MECP Table 3 standards.

Metals (including Hg and CrVI)

All metals parameter concentrations detected in the groundwater samples analysed as part of this Phase II-ESA Update comply with the selected MECP Table 3 Standards.

The analytical results for the tested groundwater are shown on Drawing PE4914-4R – Analytical Testing Plan, appended to this report.

Phase II Conceptual Site Model

Potentially Contaminating Activity (PCA) and Area of Potential Environmental Concern (APEC)

Based on the results of the Phase I ESA and the Phase I ESA Updates completed for the Phase II ESA property, four APECs were identified on the Phase II ESA property. The APECs are summarized in the table below.

TABLE 1: Areas of Potential Environmental Concern

Area of Potential Environmental Concern	Location of Area of Potential Environmental Concern	Potentially Contaminating Activity	Location of PCA (on-site or off-site)	Contaminants of Potential Concern	Media Potentially Impacted (Groundwater, Soil, and/or Sediment)
Existing AST	Within basement of the existing building	Item 28: Gasoline and Associated Products Storage in Fixed Tanks	On-site	BTEX, PHCs	Soil, Groundwater
Former Portrait Studio	Northwest corner of Phase I ESA property	Not Applicable	On-site	Metals	Soil, Groundwater
Fill Material of Unknown Quality	Throughout Phase I ESA property	Item 30: Importation of fill material of unknown quality	On-site	Metals	Soil, Groundwater
Transformer	Within basement of the existing building	Item 55: Transformer manufacturing, processing, and use	On-site	BTEX, PHCs, PCBs	Soil, Groundwater

Contaminants of Potential Concern (CPCs)

The following contaminants of potential concern (CPCs) were identified with respect to the Phase II ESA property:

Soil and Groundwater

- ❒ Benzene, Ethylbenzene, Toluene, and Xylenes (BTEX)
- ❒ Petroleum Hydrocarbons Fractions 1 to 4 (PHCs)
- ❒ Metals (including CrVI and Hg)
- ❒ Polychlorinated Biphenyls (PCBs)

Subsurface Structures and Utilities

Underground utilities, both public and private, are expected to be present on the Phase I ESA property, however they are not expected to affect contaminant distribution and transport, based on the known contaminants on the Phase I ESA property.

No concerns regarding vapour intrusion and utility trenches are considered to be present on the Phase II property.

Physical Setting

The site stratigraphy, from ground surface to the deepest aquifer or aquitard investigated, is illustrated on the attached cross-section. The stratigraphy of the Phase II Property generally consists of:

- ❑ Asphalt pavement structure with an approximate thickness of 0.06m.
- ❑ Fill material consisting of sand and gravel with trace building debris. The fill material is not expected to be a significant water generating unit at the Phase II ESA property.
- ❑ Silty clay starting beneath the fill material extending to the full depth of all boreholes. This is the deepest unit investigated. The silty clay is considered to function as the main aquifer at the Phase II ESA property.

Hydrogeological Characteristics

The Geological Survey of Canada website on the Urban Geology of the National Capital Area was consulted as part of this assessment. Based on this information, bedrock in the area of the site consists of shale of the Billings Formation. Overburden soils consist clay and offshore marine sediment, with a drift thickness of greater than 20m.

Based on the groundwater levels collected as part of the Phase II ESA Update, groundwater beneath the Phase II Property flows towards the northeast.

Approximate Depth to Bedrock

Bedrock was not encountered during the Phase II ESA. During previous geotechnical investigations the bedrock depth was determined to be in excess of 20m below the existing ground surface.

Approximate Depth to Water Table

Depth to the water table at the Phase II Property was at approximately 5.08 mbgs based on the most recent water levels and is expected to fluctuate seasonal.

Sections 35, 41 and 43.1 of the Regulation

Section 35 of O.Reg. 153/04 does apply to the Phase II Property in that properties within the Phase I Study Area rely upon municipal drinking water.

Section 41 of the Regulation (Site Condition Standards, Environmentally Sensitive Areas) does not apply to the Phase II Property. A search for areas of natural significance and features was completed on the Ontario Ministry of Natural Resources (MNR) website as part of the Phase I ESA within the Phase I ESA Study Area (250m Radius from site boundary) and did not reveal any areas of natural significance or environmentally sensitive areas within the Phase I ESA Study Area.

Section 43.1 of the Regulation does not apply to the Phase II Property in that the Phase II Property is not a Shallow Soil Property and is not within 30m of a water body.

Fill Placement

Fill material was identified across the Phase II ESA property beneath the pavement structure as part of the historical Phase II ESA work. The fill material is suspected to be a mixture of reworked native soil and engineered fill with trace demolition material from the historical buildings. The fill material is considered to be the result of grading and excavation operations during site development.

Existing Buildings and Structures

The site is occupied with a six-storey office/medical building and associated parking areas, with the current footprint of the building constructed in the 1960s. The building is currently heated using a natural gas boiler, however the building was formerly heated using furnace oil, as evidenced by the existing AST in the basement. Due to the tank location (in a concrete bunker), no observations were able to be made regarding the tank size, age, and condition.

Site drainage consists mainly of sheet flow to catch basins located within the parking areas and adjacent streets. No signs of staining or discolouration were observed on the asphalt. No distressed vegetation was observed on the property.

Underground utilities, both public and private, are expected to be present on the Phase I ESA property, however they are not expected to affect contaminant distribution and transport, based on the known contaminants on the Phase I ESA property

Proposed Buildings and Other Structures

It is our understanding that two multi-storey residential apartment buildings with underground parking areas covering the majority of the property footprint are proposed for the site.

Drinking Water Wells

No drinking water wells are present on the Phase II Property, nor are any suspected to be present within the 250m study area.

Water Bodies and Areas of Natural Significance

There are no areas of natural and scientific interest or waterbodies were identified on the Phase II Property or within the 250m study area.

Environmental Condition

Areas Where Contaminants are Present

Based on the results of the 2014 Phase II ESA and the Phase II ESA Update, fill material which exceeds the MECP Table 3 Standards for Barium and Vanadium was identified in the southeast corner of the Phase II ESA property.

Types of Contaminants

Based on the results of the 2014 Phase II ESA and the Phase II ESA Update, the contaminants of concern on the Phase II ESA property are considered to be the following;

- Metals (Barium and Vanadium) in the fill material

Contaminated Media

Based on the results of the Phase II ESA, some fill material at the Phase II ESA property is impacted above the MECP Table 3 Standards.

What Is Known About Areas Where Contaminants Are Present

The impacted fill material is present in the southeast corner of the Phase II ESA property. The impacts (Barium and Vanadium) are consistent with the naturally occurring

concentrations of silty clays in the City of Ottawa. The impacts are expected to be related to either the importation of silty clay material or re-working of native silty clay on the site for grading purposes during the development of the property.

Distribution and Migration of Contaminants

The impacts are expected to be contained within the fill layer in the southeast corner of the Phase II ESA property.

Discharge of Contaminants

The discharge of contaminants is anticipated to be related to the importation of silty clay or the re-working of native silty clay on the Phase II ESA property. The contaminant concentrations are representative of the natural background concentrations within the soil/fill and are not considered to be related to any anthropogenic causes.

Climatic and Meteorological Conditions

In general, climatic and meteorological conditions have the potential to affect contaminant distribution. Two ways by which climatic and meteorological conditions may affect contaminant distribution include the downward leaching of contaminants by means of the infiltration of precipitation, and the migration of contaminants via groundwater levels and/or flow, which may fluctuate seasonally. Based on the results of the subsurface investigation, the contaminated areas appear to be restricted to the overburden soils, and as such, the aforementioned climatic and meteorological conditions are not considered to have affected contaminant distribution at the subject site.

Potential for Vapour Intrusion

Based on the nature of the contaminants (non-volatile), the potential for vapour intrusion is negligible.

.

Recommendations

Based on the 2014 soil results, fill material exists at the Phase II ESA Property which exceeds the MECP Table 3 Standards for Barium and Vanadium. It is our recommendation that a confirmatory sampling program be completed prior to redevelopment. If the confirmatory sampling program is unsuccessful, an environmental remediation will be required.

Following the confirmatory sampling program and/or environmental remediation, a record of site condition will be required to change the land use.

Statement of Limitations

This Phase II - Environmental Site Assessment Update report has been prepared under the supervision of a qualified person, in general accordance with Ontario Regulation 153/04, as amended.

The findings of the Phase II - ESA Update are based on the review of the previous subsurface program completed on the Phase II Property in conjunction with the most recent analytical test results. Should any conditions be encountered at the Phase II Property that differ from our findings, we request that we be notified immediately.

This report was prepared for the sole use of Taggart (O'Connor) Corporation. Permission and notification from Taggart (O'Connor) Corporation and Paterson will be required to release this report to any other party.

We trust that this submission satisfies your current requirements. Should you have any questions please contact the undersigned.

Regards,

Paterson Group Inc.

Mohammed Ramadan, B.Sc.

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

Report Distribution:

- ❑ Taggart (O'Connor) Corporation
- ❑ Paterson Group

Appendix

- ❑ Figure 1 – Key Plan
- ❑ Table 2 – Groundwater Analytical Test Results
- ❑ Drawing PE4914-3R – Test Hole Location Plan
- ❑ Drawing PE4914-4R – Analytical Testing Plan
- ❑ Drawing PE4914-4A – Cross-section A-A'
- ❑ Laboratory Certificates of Analysis

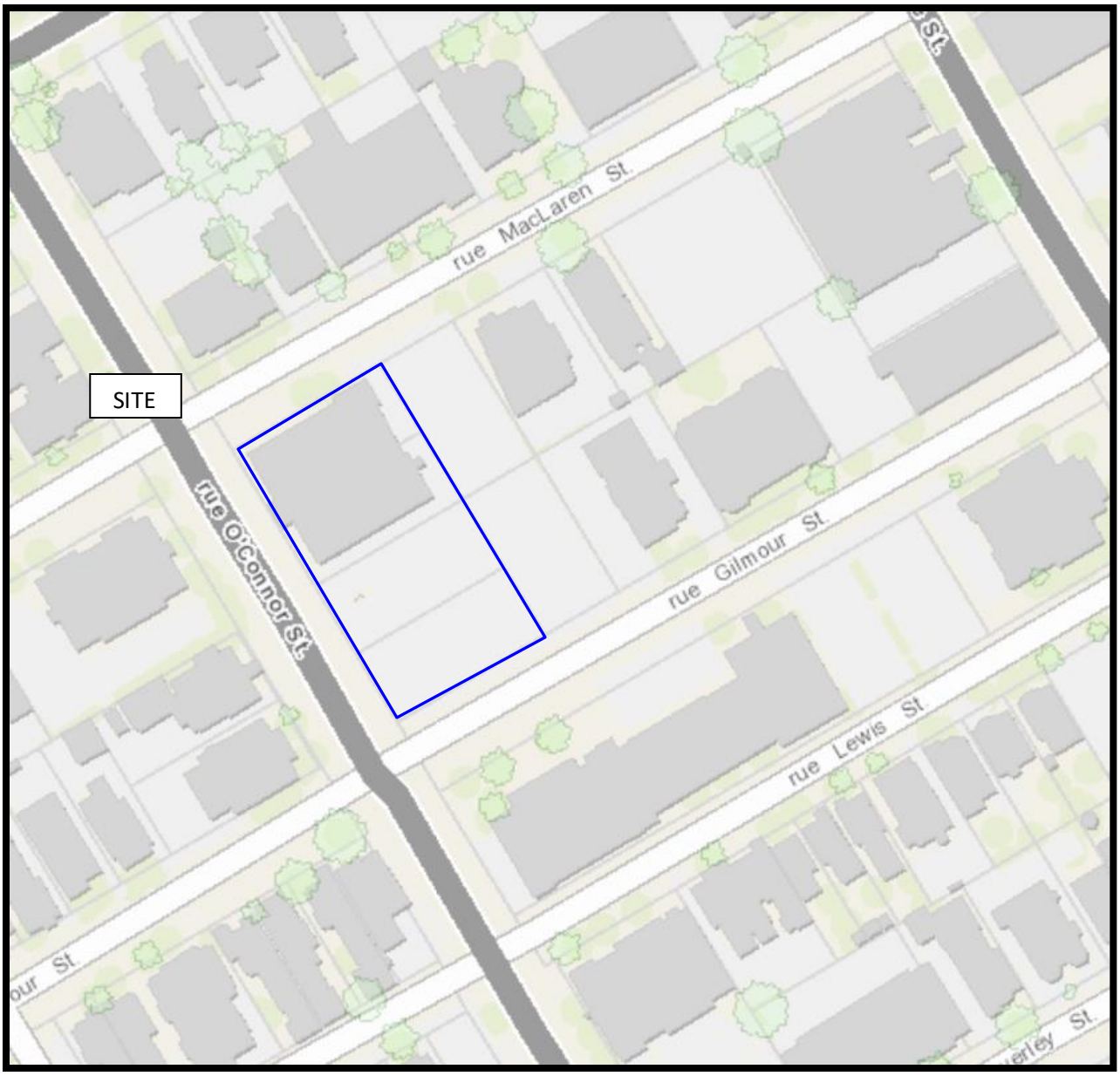


FIGURE 1

KEY PLAN

PATERSON GROUP

Table 2: Groundwater Analytical Test Results

Parameter	Units	Regulation	BH3-14-GW2	BH4-20-GW2	Dup1-23
Sample Depth (m)		Reg 153/04 - Table 3 Non-Potable	#N/A	#N/A	#N/A
Sample Date		Groundwater, coarse	09/27/2023	09/27/2023	09/27/2023
Metals					
Antimony	ug/L	20000	ND (0.5)	N/A	N/A
Arsenic	ug/L	1900	2	N/A	N/A
Barium	ug/L	29000	19	N/A	N/A
Beryllium	ug/L	67	ND (0.5)	N/A	N/A
Boron	ug/L	45000	492	N/A	N/A
Cadmium	ug/L	2.7	0.1	N/A	N/A
Chromium	ug/L	810	ND (1)	N/A	N/A
Cobalt	ug/L	66	ND (0.5)	N/A	N/A
Copper	ug/L	87	1.4	N/A	N/A
Lead	ug/L	25	0.3	N/A	N/A
Molybdenum	ug/L	9200	9.8	N/A	N/A
Nickel	ug/L	490	1	N/A	N/A
Selenium	ug/L	63	ND (1)	N/A	N/A
Silver	ug/L	1.5	ND (0.1)	N/A	N/A
Sodium	ug/L	2300000	184000	N/A	N/A
Thallium	ug/L	510	ND (0.1)	N/A	N/A
Uranium	ug/L	420	0.4	N/A	N/A
Vanadium	ug/L	250	1.4	N/A	N/A
Zinc	ug/L	1100	14	N/A	N/A
BTEX					
Benzene	ug/L	44	ND (0.5)	ND (0.5)	ND (0.5)
Ethylbenzene	ug/L	2300	ND (0.5)	ND (0.5)	ND (0.5)
Toluene	ug/L	18000	ND (0.5)	ND (0.5)	ND (0.5)
m/p-Xylene	ug/L	4200	ND (0.5)	ND (0.5)	ND (0.5)
o-Xylene	ug/L	4200	ND (0.5)	ND (0.5)	ND (0.5)
Xylenes, total	ug/L	4200	ND (0.5)	ND (0.5)	ND (0.5)
Hydrocarbons					
F1 PHCs (C6-C10)	ug/L	750	ND (25)	ND (25)	ND (25)
F2 PHCs (C10-C16)	ug/L	150	ND (100)	ND (100)	ND (100)
F3 PHCs (C16-C34)	ug/L	500	ND (100)	ND (100)	ND (100)
F4 PHCs (C34-C50)	ug/L	500	ND (100)	ND (100)	ND (100)
PCBs					
PCBs, total	ug/L	7.8 ug/L	N/A	ND (0.05)	N/A

2.00	Result exceeds Reg 153/04 - Table 3 Non-Potable Groundwater, coarse Standards
ND (0.2)	MDL exceeds Reg 153/04 - Table 3 Non-Potable Groundwater, coarse Standards
ND (0.2)	No concentrations identified above the MDL
N/A	Parameter not analysed
NV	No value given for indicated parameter

270 MACLAREN STREET
SCRIVENS OFFICE BUILDING

307 GILMOUR STREET
CASSAN MACLEAN OFFICE BUILDING

283-287 MACLAREN ST.
RESIDENTIAL
APARTMENT BUILDING

293 MACLAREN STREET
OFFICE BUILDING

261 O'CONNOR STREET
RESIDENTIAL

M A C L A R E N S T R E E T

G I L M O U R S T R E E T

WASTE
STORAGE
BIN

BH 3
71.85

BH 3-14
71.53
(63.28)
((58.20))

A'

BH 1
71.48

62.50

61.00

59.50

BH 1-14
71.95
(63.92)

A

64.00

(0.22m/m)

62.50

65.50

CB

267 O'CONNOR STREET

ASPHALTIC CONCRETE
PARKING AREA

G NATURAL
GAS
CONNECTION

BH 4-20
68.60
(68.48)
((68.41))

APPROX. LOCATION
OF ABOVEGROUND
STORAGE TANK
(BASEMENT)

BH 2-14
71.71

CB

CB

PARKING LOT
ATTENDANT BOOTH

BH 2
71.40

330 GILMOUR ST.
VACANT OFFICE
BUILDING

O ' C O N N O R S T R E E T

#250 O'CONNOR STREET
RESIDENTIAL
APARTMENT BUILDING

#320 MACLAREN STREET
RESIDENTIAL

#278 O'CONNOR STREET
RESIDENTIAL

#280 O'CONNOR STREET
RESIDENTIAL

LEGEND:

- BOREHOLE LOCATION
- BOREHOLE WITH MONITORING WELL LOCATION
- GEOTECHNICAL BOREHOLE LOCATION, PATERSON GROUP REPORT PG3176
- 71.53 GROUND SURFACE ELEVATION (m)
- (63.28) GROUNDWATER SURFACE ELEVATION (m) APRIL 02, 2014
- ((58.20)) GROUNDWATER SURFACE ELEVATION (M) SEPTEMBER 27, 2023
- 64.0 GROUNDWATER CONTOUR(m)
- (0.22m/m) APPROXIMATE GROUNDWATER FLOW DIRECTION(HORIZONTAL HYDRAULIC GRADIENT)

TBM - TOP SPINDLE OF FIRE HYDRANT. GEODETIC ELEVATION = 71.88m.

SCALE: 1:400

0 5 10 15 20 25m

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

NO.	REVISIONS	DATE	INITIAL

TAGGART REALTY MANAGEMENT

PHASE II - ENVIRONMENTAL SITE ASSESSMENT
267 O'CONNOR STREET

OTTAWA, ONTARIO

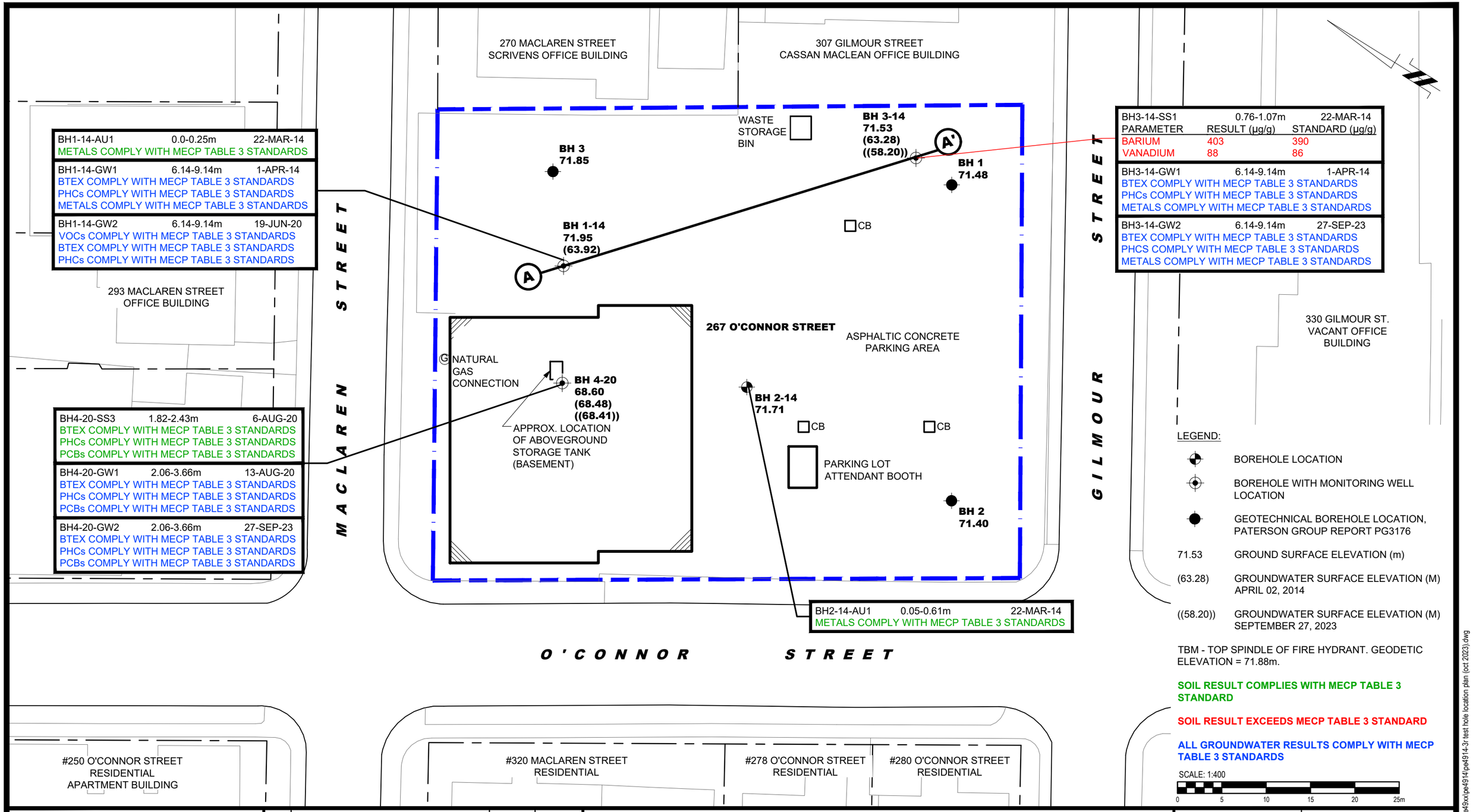
Title:

TEST HOLE LOCATION PLAN

Scale: 1:400	Date: 02/2025
Drawn by: GK	Report No.: PE4914-LET.05
Checked by: MR	Dwg. No.: PE4914-3R
Approved by: MSD	Revision No.:

11x17

p:\autocad drawings\environmental\pe4914\pe4914-3r test hole location plan (oct 2023).dwg



BH1-14-AU1	0.0-0.25m	22-MAR-14
METALS COMPLY WITH MECP TABLE 3 STANDARDS		
BH1-14-GW1	6.14-9.14m	1-APR-14
BTEX COMPLY WITH MECP TABLE 3 STANDARDS		
PHCs COMPLY WITH MECP TABLE 3 STANDARDS		
METALS COMPLY WITH MECP TABLE 3 STANDARDS		
BH1-14-GW2	6.14-9.14m	19-JUN-20
VOCs COMPLY WITH MECP TABLE 3 STANDARDS		
BTEX COMPLY WITH MECP TABLE 3 STANDARDS		
PHCs COMPLY WITH MECP TABLE 3 STANDARDS		

BH4-20-SS3	1.82-2.43m	6-AUG-20
BTEX COMPLY WITH MECP TABLE 3 STANDARDS		
PHCs COMPLY WITH MECP TABLE 3 STANDARDS		
PCBs COMPLY WITH MECP TABLE 3 STANDARDS		
BH4-20-GW1	2.06-3.66m	13-AUG-20
BTEX COMPLY WITH MECP TABLE 3 STANDARDS		
PHCs COMPLY WITH MECP TABLE 3 STANDARDS		
PCBs COMPLY WITH MECP TABLE 3 STANDARDS		
BH4-20-GW2	2.06-3.66m	27-SEP-23
BTEX COMPLY WITH MECP TABLE 3 STANDARDS		
PHCs COMPLY WITH MECP TABLE 3 STANDARDS		
PCBs COMPLY WITH MECP TABLE 3 STANDARDS		

BH2-14-AU1	0.05-0.61m	22-MAR-14
METALS COMPLY WITH MECP TABLE 3 STANDARDS		

BH3-14-SS1	0.76-1.07m	22-MAR-14
PARAMETER	RESULT (µg/g)	STANDARD (µg/g)
BARIUM	403	390
VANADIUM	88	86
BH3-14-GW1	6.14-9.14m	1-APR-14
BTEX COMPLY WITH MECP TABLE 3 STANDARDS		
PHCs COMPLY WITH MECP TABLE 3 STANDARDS		
METALS COMPLY WITH MECP TABLE 3 STANDARDS		
BH3-14-GW2	6.14-9.14m	27-SEP-23
BTEX COMPLY WITH MECP TABLE 3 STANDARDS		
PHCS COMPLY WITH MECP TABLE 3 STANDARDS		
METALS COMPLY WITH MECP TABLE 3 STANDARDS		

LEGEND:

- BOREHOLE LOCATION
- BOREHOLE WITH MONITORING WELL LOCATION
- GEOTECHNICAL BOREHOLE LOCATION, PATERSON GROUP REPORT PG3176
- 71.53 GROUND SURFACE ELEVATION (m)
- (63.28) GROUNDWATER SURFACE ELEVATION (M) APRIL 02, 2014
- ((58.20)) GROUNDWATER SURFACE ELEVATION (M) SEPTEMBER 27, 2023

TBM - TOP SPINDLE OF FIRE HYDRANT. GEODETIC ELEVATION = 71.88m.

SOIL RESULT COMPLIES WITH MECP TABLE 3 STANDARD

SOIL RESULT EXCEEDS MECP TABLE 3 STANDARD

ALL GROUNDWATER RESULTS COMPLY WITH MECP TABLE 3 STANDARDS

SCALE: 1:400

0 5 10 15 20 25m

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

NO.	REVISIONS	DATE	INITIAL

TAGGART REALTY MANAGEMENT

PHASE II - ENVIRONMENTAL SITE ASSESSMENT
267 O'CONNOR STREET

OTTAWA, ONTARIO

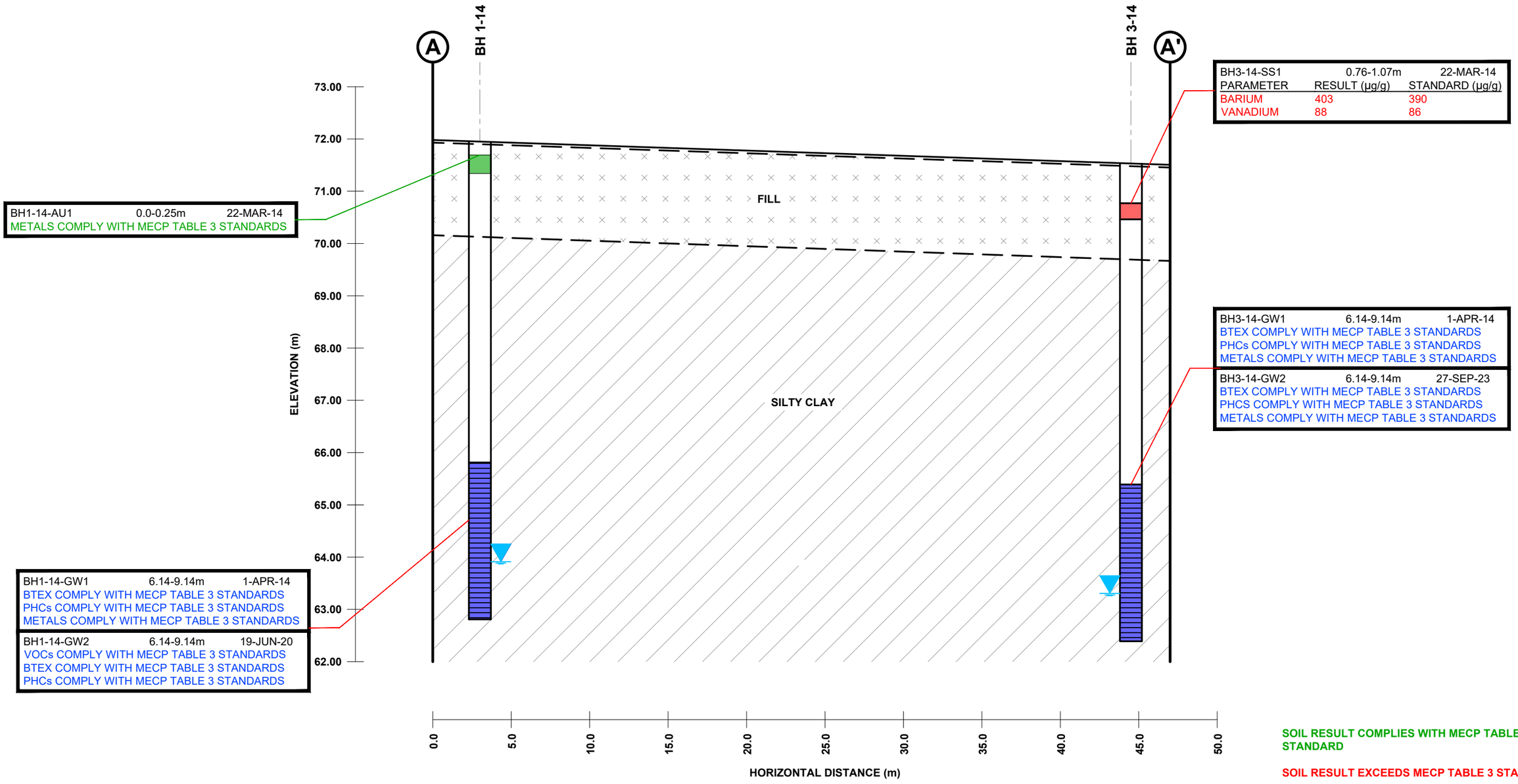
Title:

ANALYTICAL TESTING PLAN

Scale: 1:400	Date: 02/2025
Drawn by: GK	Report No.: PE4914-LET.05
Checked by: MR	Dwg. No.: PE4914-4R
Approved by: MSD	Revision No.:

11x17

p:\autocad drawings\environmental\pe49xx\pe4914\pe4914-3r test hole location plan (oct 2023).dwg



SOIL RESULT COMPLIES WITH MECP TABLE 3 STANDARD

SOIL RESULT EXCEEDS MECP TABLE 3 STANDARD

ALL GROUNDWATER RESULTS COMPLY WITH MECP TABLE 3 STANDARDS

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

NO.	REVISIONS	DATE	INITIAL

TAGGART REALTY MANAGEMENT

PHASE II - ENVIRONMENTAL SITE ASSESSMENT
267 O'CONNOR STREET

OTTAWA, ONTARIO

Title:

CROSS-SECTION A-A'

Scale: 1:250	Date: 02/2025
Drawn by: GK	Report No.: PE4914-LET.05
Checked by: MR	Dwg. No.: PE4914-4A
Approved by: MSD	Revision No.:

p:\autocad drawings\environmental\pe49xx\pe4914\pe4914-3r test hole location plan (oct 2023).dwg

11x17

PARACEL LABORATORIES LTD.
TRUSTED. RESPONSIVE. RELIABLE.

300 - 2319 St. Laurent Blvd
Ottawa, ON, K1G 4J8
1-800-749-1947
www.paracellabs.com

Certificate of Analysis

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

Client PO: 58464
Project: PE4914
Custody: 141915

Report Date: 3-Oct-2023
Order Date: 27-Sep-2023

Order #: 2339324

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

Paracel ID	Client ID
2339324-01	BH3-14-GW2
2339324-02	BH4-20-GW2
2339324-03	Dup1-23

Approved By:

Dale Robertson, BSc
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	29-Sep-23	29-Sep-23
Metals, ICP-MS	EPA 200.8 - ICP-MS	29-Sep-23	29-Sep-23
PCBs, total	EPA 608 - GC-ECD	3-Oct-23	3-Oct-23
PHC F1	CWS Tier 1 - P&T GC-FID	28-Sep-23	29-Sep-23
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	29-Sep-23	29-Sep-23

PARACEL LABORATORIES LTD.

Order #: 2339324

Certificate of Analysis

Report Date: 03-Oct-2023

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

Order Date: 27-Sep-2023

Client PO: 58464

Project Description: PE4914

	Client ID:	BH3-14-GW2	BH4-20-GW2	Dup1-23	-	-	-
	Sample Date:	27-Sep-23 09:00	27-Sep-23 09:00	27-Sep-23 09:00	-		
	Sample ID:	2339324-01	2339324-02	2339324-03	-		
	Matrix:	Ground Water	Ground Water	Ground Water	-		
	MDL/Units						
Metals							
Antimony	0.5 ug/L	<0.5	-	-	-	-	-
Arsenic	1 ug/L	2	-	-	-	-	-
Barium	1 ug/L	19	-	-	-	-	-
Beryllium	0.5 ug/L	<0.5	-	-	-	-	-
Boron	10 ug/L	492	-	-	-	-	-
Cadmium	0.1 ug/L	0.1	-	-	-	-	-
Chromium	1 ug/L	<1	-	-	-	-	-
Cobalt	0.5 ug/L	<0.5	-	-	-	-	-
Copper	0.5 ug/L	1.4	-	-	-	-	-
Lead	0.1 ug/L	0.3	-	-	-	-	-
Molybdenum	0.5 ug/L	9.8	-	-	-	-	-
Nickel	1 ug/L	1	-	-	-	-	-
Selenium	1 ug/L	<1	-	-	-	-	-
Silver	0.1 ug/L	<0.1	-	-	-	-	-
Sodium	200 ug/L	184000	-	-	-	-	-
Thallium	0.1 ug/L	<0.1	-	-	-	-	-
Uranium	0.1 ug/L	0.4	-	-	-	-	-
Vanadium	0.5 ug/L	1.4	-	-	-	-	-
Zinc	5 ug/L	14	-	-	-	-	-
Volatiles							
Benzene	0.5 ug/L	<0.5	<0.5	<0.5	-	-	-
Ethylbenzene	0.5 ug/L	<0.5	<0.5	<0.5	-	-	-
Toluene	0.5 ug/L	<0.5	<0.5	<0.5	-	-	-
m,p-Xylenes	0.5 ug/L	<0.5	<0.5	<0.5	-	-	-
o-Xylene	0.5 ug/L	<0.5	<0.5	<0.5	-	-	-

Certificate of Analysis

Report Date: 03-Oct-2023

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

Order Date: 27-Sep-2023

Client PO: 58464

Project Description: PE4914

	Client ID:	BH3-14-GW2	BH4-20-GW2	Dup1-23	-		
	Sample Date:	27-Sep-23 09:00	27-Sep-23 09:00	27-Sep-23 09:00	-	-	-
	Sample ID:	2339324-01	2339324-02	2339324-03	-		
	Matrix:	Ground Water	Ground Water	Ground Water	-		
	MDL/Units						
Volatiles							
Xylenes, total	0.5 ug/L	<0.5	<0.5	<0.5	-	-	-
Toluene-d8	Surrogate	106%	107%	112%	-	-	-
Hydrocarbons							
F1 PHCs (C6-C10)	25 ug/L	<25	<25	<25	-	-	-
F2 PHCs (C10-C16)	100 ug/L	<100	<100	<100	-	-	-
F3 PHCs (C16-C34)	100 ug/L	<100	<100	<100	-	-	-
F4 PHCs (C34-C50)	100 ug/L	<100	<100	<100	-	-	-
PCBs							
PCBs, total	0.05 ug/L	-	<0.05	-	-	-	-
Decachlorobiphenyl	Surrogate	-	106%	-	-	-	-

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					
Metals								
Antimony	ND	0.5	ug/L					
Arsenic	ND	1	ug/L					
Barium	ND	1	ug/L					
Beryllium	ND	0.5	ug/L					
Boron	ND	10	ug/L					
Cadmium	ND	0.1	ug/L					
Chromium	ND	1	ug/L					
Cobalt	ND	0.5	ug/L					
Copper	ND	0.5	ug/L					
Lead	ND	0.1	ug/L					
Molybdenum	ND	0.5	ug/L					
Nickel	ND	1	ug/L					
Selenium	ND	1	ug/L					
Silver	ND	0.1	ug/L					
Sodium	ND	200	ug/L					
Thallium	ND	0.1	ug/L					
Uranium	ND	0.1	ug/L					
Vanadium	ND	0.5	ug/L					
Zinc	ND	5	ug/L					
PCBs								
PCBs, total	ND	0.05	ug/L					
Surrogate: Decachlorobiphenyl	*0.363*		*%*	*72.6*	*60-140*			
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					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
o-Xylene	ND	0.5	ug/L					
Xylenes, total	ND	0.5	ug/L					
Surrogate: Toluene-d8	*84.8*		*%*	*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	25	ug/L	ND			NC	30	
Metals									
Antimony	ND	0.5	ug/L	ND			NC	20	
Arsenic	ND	1	ug/L	ND			NC	20	
Barium	ND	1	ug/L	ND			NC	20	
Beryllium	ND	0.5	ug/L	ND			NC	20	
Boron	ND	10	ug/L	ND			NC	20	
Cadmium	ND	0.1	ug/L	ND			NC	20	
Chromium	ND	1	ug/L	ND			NC	20	
Cobalt	ND	0.5	ug/L	ND			NC	20	
Copper	ND	0.5	ug/L	ND			NC	20	
Lead	ND	0.1	ug/L	ND			NC	20	
Molybdenum	ND	0.5	ug/L	ND			NC	20	
Nickel	ND	1	ug/L	ND			NC	20	
Selenium	ND	1	ug/L	ND			NC	20	
Silver	ND	0.1	ug/L	ND			NC	20	
Sodium	ND	200	ug/L	ND			NC	20	
Thallium	ND	0.1	ug/L	ND			NC	20	
Uranium	ND	0.1	ug/L	ND			NC	20	
Vanadium	ND	0.5	ug/L	ND			NC	20	
Zinc	ND	5	ug/L	ND			NC	20	
Volatiles									
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	*83.2*		*%*		*104*	*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)	1820	25	ug/L	ND	90.8	85-115			
F2 PHCs (C10-C16)	1360	100	ug/L	ND	85.2	60-140			
F3 PHCs (C16-C34)	3940	100	ug/L	ND	101	60-140			
F4 PHCs (C34-C50)	2480	100	ug/L	ND	100	60-140			
Metals									
Arsenic	59.7	1	ug/L	ND	119	80-120			
Barium	54.8	1	ug/L	ND	109	80-120			
Beryllium	59.8	0.5	ug/L	ND	119	80-120			
Boron	54	10	ug/L	ND	107	80-120			
Cadmium	55.8	0.1	ug/L	ND	111	80-120			
Chromium	56.4	1	ug/L	ND	113	80-120			
Cobalt	58.5	0.5	ug/L	ND	117	80-120			
Copper	57.0	0.5	ug/L	ND	114	80-120			
Lead	52.5	0.1	ug/L	ND	105	80-120			
Molybdenum	49.2	0.5	ug/L	ND	98.3	80-120			
Nickel	58.5	1	ug/L	ND	117	80-120			
Selenium	58.9	1	ug/L	ND	117	80-120			
Silver	54.2	0.1	ug/L	ND	108	80-120			
Sodium	9670	200	ug/L	ND	95.6	80-120			
Thallium	54.5	0.1	ug/L	ND	109	80-120			
Uranium	55.8	0.1	ug/L	ND	111	80-120			
Vanadium	55.6	0.5	ug/L	ND	111	80-120			
Zinc	58	5	ug/L	ND	116	80-120			
PCBs									
PCBs, total	1.05	0.05	ug/L	ND	105	65-135			
Surrogate: Decachlorobiphenyl	*0.483*		*%*		*96.6*	*60-140*			
Volatiles									
Benzene	45.6	0.5	ug/L	ND	114	60-130			
Ethylbenzene	46.6	0.5	ug/L	ND	116	60-130			
Toluene	44.4	0.5	ug/L	ND	111	60-130			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
m,p-Xylenes	77.9	0.5	ug/L	ND	97.4	60-130			
o-Xylene	46.8	0.5	ug/L	ND	117	60-130			
Surrogate: Toluene-d8	*76.1*		*%*		*95.1*	*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 crite

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

PARACEL LABORATORIES LTD.

Paracel ID: 2339324

Paracel Order Number (Lab Use Only)	Chain Of Custody (Lab Use Only)
2339324	№ 141915

Client Name: Paterson
Contact Name: Sam Berube
Address: 9 Auriga
Telephone: 613 226 7381

Project Ref: PE4914
Quote #:
PO #: 58464
E-mail: SBerube@PatersonGroup.ca
GPaterson@PatersonGroup.ca

Page __ of __

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)

	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	BH3-14-GW2	GW		4	Sep 27 2023		X			X				
2	BH4-20-GW2	↓		4	↓		X							X
3	DUP1-23	↓		3	↓		X							
4														
5														
6														
7														
8														
9														
10														

Comments:

Method of Delivery: Paracel Courier

Relinquished By (Sign):	Received By Driver/Depot:	Received at Lab: Jinneeram Bhimai	Verified By: Hiral
Relinquished By (Print): Grant Paterson	Date/Time:	Date/Time: Sep 27, 2023 04:05	Date/Time: Sept 28, 23 10:32
Date/Time: Sep 27 2023	Temperature: °C	Temperature: 16.9 °C	pH Verified: ☑ By: Hiral