

<b>to:</b>	Richcraft Group of Companies - <b>Mr. Patrick Gaudreault</b> - pgaudreault@richcraft.com
<b>re:</b>	Environmental Remedial Action Plan <b>Proposed Mixed-Use Development - Trail's Edge - Phase 4 (South), Ottawa, Ontario Part of 2220 Mer Bleue Road</b>
<b>date:</b>	June 22, 2021
<b>file:</b>	PE4999-RAP.01
<b>from:</b>	Nick Sullivan

Further to your request and authorization, Paterson Group (Paterson) has prepared a remedial action plan for the proposed mixed-use development at the aforementioned property (the subject site).

The subject site is located on the west side of Mer Bleue Road, north of Brian Coburn Boulevard, in the City of Ottawa, Ontario. The subject site is currently vacant and consists entirely of grassland.

## **Environmental Site Conditions**

In August 2020, Paterson completed a Phase I - Environmental Site Assessment (Phase I ESA) Update for the subject site. According to the historical information reviewed, the subject site has never been formally developed. Fill material of unknown quality was suspected to have been placed on the subject site as a result of the operations of a neighbouring contractor business to the north. This was considered to represent an on-site PCA, resulting in an APEC with respect to the subject site.

The neighbouring properties have historically consisted of residential properties, vacant land, and the aforementioned contractor's equipment storage yard. Due to the nature of the equipment observed on the neighbouring contractor's yard, this property was considered to represent an off-site PCA, resulting in an APEC with respect to the subject site.

In September, October, and November 2020, a Phase II ESA was conducted for the subject site to address the two aforementioned PCAs considered to result in APECs with respect to the subject site. The subsurface investigation consisted of drilling five boreholes throughout the subject site, of which three were equipped with groundwater monitoring wells, in addition to the excavation of nine test pits.

A select number of soil samples were submitted for laboratory analysis of BTEX, PHCs, PAHs, and/or metal parameters. Based on the analytical test results, the concentration of several PAHs and metals identified within the surficial layer of imported fill material were in excess of the appropriate MECP Table 2 residential site condition standards selected for the subject site.

Groundwater samples were also recovered from the monitoring wells installed on-site and submitted for laboratory analysis of BTEX, PHCs, and/or PAH parameters. Based on the analytical results, no contaminated groundwater was identified on the subject site.

Based on the findings of the Phase II ESA, contaminated fill material was identified within the northern and eastern portions of the subject site, requiring some remedial work. The thickness of the fill material in these areas ranges from approximately 0.46 m to 1.28 m below the existing ground surface. This impacted fill material should be remediated by means of removal from the subject site and disposed at an approved waste disposal facility.

Please refer to the following section for further details on the recommended plan for site remediation.

## **Remedial Action Plan/Soil Quality Assessment**

The suggested action plan consists of a generic approach, where the excavation and removal of site soils will be undertaken. The suggested action plan is as follows:

- All impacted soils will be removed from the subject site prior to any future site development activities.
- Paterson personnel will be present on-site to monitor the excavation and removal of any impacted soils.
- Excavated soils will be screened using visual and olfactory observations as well as a portable soil vapour analyser. Field observations will be used in combination with the collection and analytical testing of confirmatory base samples for Polycyclic Aromatic Hydrocarbons (PAHs) and/or Metal parameters.
- Any impacted soils identified will be placed in trucks and hauled to an approved waste disposal facility. The laboratory results of a toxicity characteristic leaching procedure (TCLP) sample will be provided prior to the transfer of any soil to the waste disposal site.
- Given the surficial nature of the impacted fill, no fill material is expected to be required to be imported for backfilling purposes. The limits of the final excavation should be graded to a safe condition using the surrounding fill material.
- Based on the findings of the Phase II ESA, the groundwater beneath the Phase II property is not contaminated. Groundwater is not expected to be encountered during the remedial program.

- Upon completion of the remedial program, a summary report will be prepared including our observations, findings, and analytical test results. This remediation report will be incorporated into our Phase II ESA for submission to the city.

## Quantities and Cost Estimate

Estimated quantities are as follows:

- Contaminated Soil to be Excavated . . . . . 200 m<sup>3</sup>
- Disposal of impacted soil at an approved waste disposal facility . . . . . 400 mt
- Groundwater management and treatment . . . . . Not Required
- Backfill material. . . . . Not Required

We trust that this information satisfies your requirements.

Best Regards,

**Paterson Group Inc**



Nick Sullivan, B.Sc.



Mark D'Arcy, P.Eng.

### Attachments

- Table 1 - Generic Approach for Remediation
- Soil Profile and Test Data Sheets - BH2-20 & TP4-20
- Drawing PE4999-8 - Test Hole Location Plan

<b>Table 1</b> <b>Generic Approach for Subject Site</b> <b>Part of 2220 Mer Bleue Road, Ottawa, Ontario</b>		
Item and Estimated Quantity	Unit Rate	Estimated Cost
<b>Remediation Contractor Estimated Incremental Costs</b>		
Site preparation prior to commencing excavation operation including required safety signs and mobilization as well as cleaning and maintenance of roadway due to construction activities when removing contaminated soil.	Lump Sum	
<b>Removal of Impacted Soil Treatment</b>		
Excavation of soil (approximately 200 m <sup>3</sup> )	\$_____ / m <sup>3</sup>	
Transportation and tipping fees for impacted soil at approved waste disposal facility (approximately 200 m <sup>3</sup> or 400 mt)	\$_____ / mt	
<b>Contractor Sub-Total (excluding applicable taxes)</b>		

**Paterson Group Inc.**

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DATUM Geodetic



REMARKS

BORINGS BY Track-Mount Power Auger

DATE September 29, 2020

FILE NO. **PE4999**

HOLE NO. **BH 2-20**

SOIL DESCRIPTION	STRATA PLOT	SAMPLE				DEPTH (m)	ELEV. (m)	Photo Ionization Detector				Monitoring Well Construction
		TYPE	NUMBER	RECOVERY %	N VALUE or RQD			● Volatile Organic Rgd. (ppm)				
GROUND SURFACE								○ Lower Explosive Limit %				
								20	40	60	80	
<b>FILL:</b> Crushed stone with brown silty sand		AU	1			0	87.98					
	0.46											
Stiff to firm, brown <b>SILTY CLAY</b> - soft and grey by 3.0m depth		SS	2	100	9	1	86.98					
		SS	3	92	5	2	85.98					
		SS	4	100	4	3	84.98					
		SS	5	100	2	4	83.98					
		SS	6	100	W	5	82.98					
		SS	7	100	W							
		SS	8	100	W							
End of Borehole (GWL @ 0.54m - Nov. 12, 2020)	5.94											
								100	200	300	400	500

**RKI Eagle Rgd. (ppm)**

▲ Full Gas Resp. △ Methane Elim.

## SOIL PROFILE AND TEST DATA

Phase II - Environmental Site Assessment  
Trail's Edge: Phase 4 (South)  
Ottawa, Ontario

DATUM Geodetic

REMARKS

BORINGS BY Backhoe

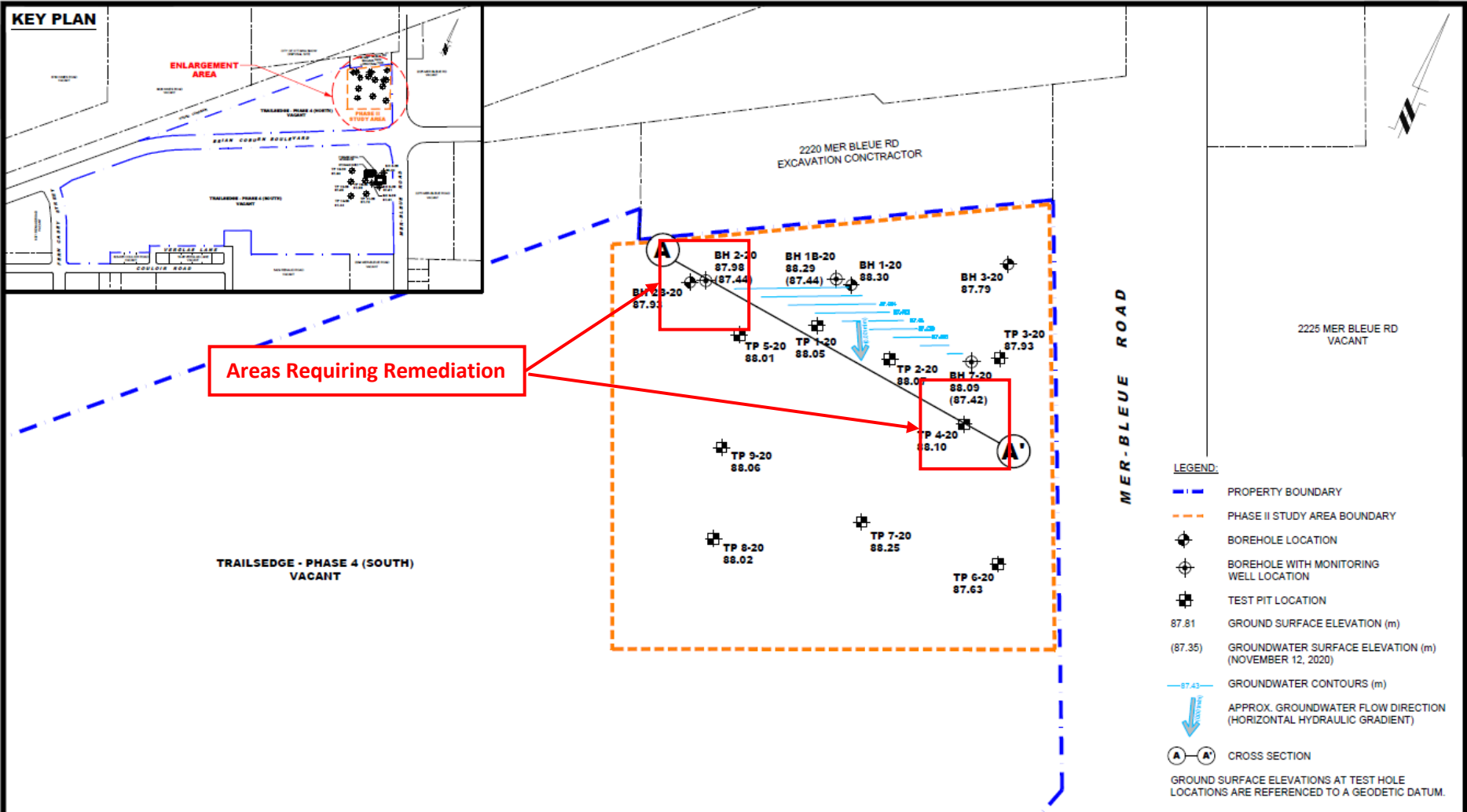
DATE October 19, 2020

FILE NO. **PE4999**

HOLE NO. **TP 4**

SOIL DESCRIPTION	STRATA PLOT	SAMPLE				DEPTH (m)	ELEV. (m)	Photo Ionization Detector				Monitoring Well Construction
		TYPE	NUMBER	RECOVERY %	N VALUE or RQD			<input checked="" type="radio"/> Volatile Organic Rdg. (ppm) <input type="radio"/> Lower Explosive Limit %				
GROUND SURFACE						0	88.10	20	40	60	80	
TOPSOIL	[REDACTED]	G	1									
	0.28											
FILL: Brown silty sand, some gravel, clay, trace cobbles, brick, asphalt, domestic waste	[Hatched]	G	2									
	1.28					1	87.10					
Brown SILTY CLAY	[Hatched]											
	1.92											
End of Test Pit												

100 200 300 400 500  
**RKI Eagle Rdg. (ppm)**  
 ▲ Full Gas Resp. △ Methane Elim.



**patersongroup**  
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NO.	REVISIONS	DATE	INITIAL

OTTAWA, ONTARIO

Title: **TEST HOLE LOCATION PLAN**

RICHCRAFT GROUP OF COMPANIES  
PHASE II - ENVIRONMENTAL SITE ASSESSMENT  
TRAIL'S EDGE - PHASE 4 (SOUTH)  
NORTHERN PARCEL (MIXED-USE ZONE)

Scale:	1:1000	Date:	01/2021
Drawn by:	YA	Report No.:	PE4999-2
Checked by:	NS	Dwg. No.:	<b>PE4999-8</b>
Approved by:	MSD	Revision No.:	

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