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September 26, 2022
File: PE5100-LET.04

Fastfrate (Ottawa) Holdings Inc.
55 Commerce Valley Drive West
Thornhill, Ontario
L3T 7V9

Attention: **Mr. Keefe Primett**

Subject: **Phase II-Environmental Site Assessment Update**
301 Somme 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 entitled “Phase II Environmental Site Assessment, formerly the Northern Part of 5123 Hawthorne Road, and now readdressed 301 Somme Street, Ottawa, Ontario” prepared by Paterson Group Inc. (Paterson), dated November 30, 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

Physical Setting

The Phase II Property is situated in an industrial area. Adjacent and neighbouring properties primarily consist of vacant undeveloped lands with some commercial to light industrial land use further west.

The Phase II Property in terms of occupancy remains vacant land. There have been some minor earth works completed on-site in preparation of construction, such as site grading and compaction. All previous groundwater monitoring wells were removed prior to site preparation.

Drainage on the Phase II Property consists primarily of surface infiltration throughout the property. The site is relatively at the grade of the surrounding lands with the regional topography sloping downwards in a south-easterly direction.

Past Assessments

- ❑ "Phase I-Environmental Site Assessment, Part Lot 26 & 27, Concession 6, Ottawa, Ontario," prepared by CRA, dated July 2008.

Based on the findings of the Phase I ESA, CRA noted the presence of the waste road building materials on-site as a potential environmental impairment to the land.

The Ontario Ministry of Environment (MOE) approved the placement of non-recyclable asphalt and waste road building materials more than 30 years ago (MOE letter, 1990). The placement of waste road building materials (granular materials, non-recyclable asphalt and presumably concrete) on-site in the past, represented a potential environmental concern on the subject site. CRA recommended a Phase II-ESA, to assess the site conditions due to the former handling of waste road building materials on-site.

- ❑ "Phase I Environmental Site Assessment, 5123 Hawthorne Road, Part 1, Ottawa, Ontario," prepared by Paterson Group Inc. (Paterson), dated November 20, 2020.

The Phase I-ESA was completed in general accordance with the Ontario Regulation (O.Reg.) 153/04, as amended. The findings of the Phase I ESA identified fill material of an unknown quality across the majority of the Phase I Property which resulted in an area of potential environmental concern (APEC) on the Phase I Property.

A Phase II ESA was recommended and carried out to address the aforementioned APEC on the Phase I Property.

- ❑ "Phase II Environmental Site Assessment, 5123 Hawthorne Road, Part 1, Ottawa, Ontario," prepared by Paterson Group Inc. (Paterson), dated November 30, 2020.

The Phase II – ESA was completed to assess the quality of the fill material (waste road building materials) that had been placed on-site by the owner of the property, R.W. Tomlinson.

The field program consisted of placing three (3) boreholes on the Phase II Property. The boreholes were placed to obtain a general coverage of the area to address the unknown quality of the fill material on-site.

The soil profile generally consisted of a layer of fill, overlying native clayey silt/silty clay and/or a silty fine sand with traces of gravel. Practical refusal was reached at depths ranging from 5.28 to 10.67 m below the existing grade on inferred bedrock.

The fill material consisted of a mix of clay, silt, sand and gravel with varying amounts of asphaltic concrete and concrete. The fill varied in thickness from 2.3 to 5.8 m.

Six (6) soil samples and two (2) grab samples were submitted for BTEX, PHCs (F1-F4), metals and/or PAH analysis, as well as for electrical conductivity (EC) and sodium absorption ratio (SAR) and pH analysis. All soil samples complied with the selected MECP Table 2 Standards. A comparison of the soil data to the MECP Table 1 Standards, indicated that the petroleum hydrocarbon fraction 4 concentrations in several soil samples exceeded the Table 1 Standard, as well as molybdenum and chromium concentrations.

Groundwater samples were recovered from the monitoring wells BH1, BH2 and MW7-8 on May 28, June 7, 2019, and November 10, 2020. No visual or olfactory signs of contamination were noted in the groundwater. The groundwater samples were submitted for PHC (F1-F4), PAH, VOC and sodium and chloride analysis. No PHCs and/or VOCs concentrations were detected. VOC and PHC test results complied the MECP Table 2 Standards.

Detectable PAH parameters were identified in all of the groundwater samples analyzed for the May 28, 2019, sampling event. All PAH parameter concentrations from MW7-08 were in compliance with the MECP Table 2 Standards. Benzo[a]pyrene concentrations in BH1 and BH2 were in excess of the applicable standards. Benzo[b]fluoranthene and chrysene concentrations in BH2 were also in excess of the applicable MECP standards.

It was speculated that some sediment was present in the groundwater samples, and as such, BH1 and BH2 were resampled on June 7, 2019, and November 10, 2020.

The analytical test results from the last two (2) sampling events showed that the groundwater complied with the MECP Table 2 Standards. The apparent discrepancies between these analytical results, are considered to be a result of sediment present in the first groundwater samples analyzed.

Based on the findings of the Phase II ESA, no additional work was required; however, the investigation confirmed that the fill contains waste road building materials, various soils, road based granular materials concrete and asphaltic concrete.

A Phase I ESA Update was completed in July 2022, in general accordance with O.Reg 153/04, as amended. No new PCAs that would result in APECs on the Phase I Property were identified during the Phase I ESA Update.

Applicable Site Condition Standard

The site condition standards for the property were obtained from Table 2 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 intended use of the Phase II Property is industrial, and therefore, the industrial standards have been selected for the purpose of this Phase II ESA. The MECP Table 2 Industrial Standards are based on the following considerations:

- ❒ Coarse-grained soil conditions;
- ❒ Full depth generic site conditions;
- ❒ Potable groundwater conditions; and
- ❒ Industrial land use.

Section 35 of O.Reg. 153/04 does not apply to the Phase II Property in that the property, and the properties within the 250 m study area rely upon potable groundwater.

Section 41 of O.Reg. 153/04 does not apply to the Phase II Property, as the property is not considered an environmentally sensitive area, as the pH values at the surface and subsurface are 7.90 and 7.06, respectively.

Section 43.1 of O.Reg. 153/04 does not apply to the Phase II Property in that the property, is a not situated where Shallow Soils are present.

Impediments

Resampling of the former groundwater monitoring wells drilled in 2019 and 2020 was not possible as these wells were decommissioned prior to recent grading and compaction of the site. No other impediments were encountered during this Phase II ESA Update.

Investigation Method

A water supply well and observation well (MW22-1) were installed on the Phase II Property on July 29, 2022. The locations and identifications of these groundwater wells are shown in Drawing PE5100-3R – Test Hole Location Plan, which has been appended to this report.

Groundwater samples were collected on August 12, 2022 by Paterson and submitted for analytical testing.

Review and Evaluation

Geology

Site soils generally generally consisted of a layer of fill, overlying native clayey silt/silty clay and/or a silty fine sand with traces of gravel. Practical refusal was reached at depths ranging from 5.28 to 10.67 m below the existing grade on inferred bedrock. It should be noted that refusal was initially encountered during the drilling of BH1 and BH3 on inferred concrete in the fill.

The fill material consisted of a mix of clay, silt, sand and gravel with varying amounts of asphaltic concrete and concrete.

Groundwater was encountered within either the fill or native soil at depths ranging from approximately of 2.92 to 3.82 m, below the existing grade.

Further details regarding the soil profile are provided on the Soil Profile and Test Data Sheets, appended to the original Phase II ESA Report.

Groundwater Elevations, Flow Direction and Hydraulic Gradient

The groundwater level was measured in MW22-1 on August 12, 2022. The groundwater level was measured at 3.12 mbgs.

Based on the November 10, 2020, groundwater sampling event, a groundwater contour plan was completed. The groundwater contour mapping is shown on Drawing PE5100-3R– Groundwater Contour Plan. Based on the contour mapping, groundwater flow beneath the Phase II Property is in a westerly direction. A horizontal hydraulic gradient of approximately 0.015 m/m was calculated. The groundwater contour plan is shown on Drawing PE5100-3R.

Groundwater Quality

A groundwater sample was recovered from the new observation well, MW22-1 on August 12, 2022.

The groundwater sample was submitted for laboratory analysis of polycyclic aromatic hydrocarbons (PAHs) and volatile organic compounds (VOCs).

The results of the analytical testing are presented in Tables 1 and 2. The laboratory certificate of analysis has been appended to this report.

Table 1
Analytical Test Results – Groundwater – PAHs

Parameter	MDL (µg/L)	Groundwater Samples (µg/L)	MECP Table 2 Standards (µg/L)
		August 12, 2022	
		BH1-GW1 (MW22-1)	
Acenaphthene	0.05	nd	4.1
Acenaphthylene	0.05	nd	1
Anthracene	0.01	nd	2.4
Benzo[a]anthracene	0.01	nd	1
Benzo[a]pyrene	0.01	nd	0.01
Benzo[b]fluoranthene	0.05	nd	0.1
Benzo[g,h,i]perylene	0.05	nd	0.2
Benzo[k]fluoranthene	0.05	nd	0.1
Chrysene	0.05	nd	0.1
Dibenzo[a,h]anthracene	0.05	nd	0.2
Fluoranthene	0.01	nd	0.41
Fluorene	0.05	nd	120
Indeno[1,2,3-cd]pyrene	0.05	nd	0.2
1-Methylnaphthalene	0.05	nd	3.2
2-Methylnaphthalene	0.05	nd	3.2
Methylnaphthalene (1&2)	0.1	nd	3.2
Naphthalene	0.05	nd	11
Phenanthrene	0.05	nd	1
Pyrene	0.01	nd	4.1

Notes:
- MDL - Method Detection Limit
- nd - Not Detected (i.e <MDL)

No PAH concentrations were detected in the groundwater sample.

Table 2
Analytical Test Results – Groundwater – VOCs

Parameter	MDL (µg/L)	Groundwater Samples (µg/L)	MECP Table 2 Standards (µg/L)
		August 12, 2022	
		BH1-GW1 (MW22-1)	
Acetone	5	nd	2700
Benzene	0.5	nd	5
Bromodichloromethane	0.5	nd	16
Bromoform	0.5	nd	25
Bromomethane	0.5	nd	0.89
Carbon Tetrachloride	0.2	nd	0.79
Chlorobenzene	0.5	nd	30
Chloroform	0.5	nd	2.4
Dibromochloromethane	0.5	nd	25
Dichlorodifluoromethane	1	nd	590
1,2-Dichlorobenzene	0.5	nd	3
1,3-Dichlorobenzene	0.5	nd	59

Table 2
Analytical Test Results – Groundwater – VOCs

Parameter	MDL (µg/L)	Groundwater Samples (µg/L)	MECP Table 2 Standards (µg/L)
		August 12, 2022	
		BH1-GW1 (MW22-1)	
1,4-Dichlorobenzene	0.5	nd	1
1,1-Dichloroethane	0.5	nd	5
1,2-Dichloroethane	0.5	nd	1.6
1,1-Dichloroethylene	0.5	nd	1.6
cis-1,2-Dichloroethylene	0.5	nd	1.6
trans-1,2-Dichloroethylene	0.5	nd	1.6
1,2-Dichloropropane	0.5	nd	5
1,3-Dichloropropene, total	0.5	nd	0.5
Ethylbenzene	0.5	nd	2.4
Ethylene dibromide	0.2	nd	0.2
Hexane	1	nd	51
Methyl Ethyl Ketone	5	nd	1800
Methyl Isobutyl Ketone	5	nd	640
Methyl tert-butyl ether	2	nd	15
Methylene Chloride	5	nd	50
Styrene	0.5	nd	5.4
1,1,1,2-Tetrachloroethane	0.5	nd	1.1
1,1,2,2-Tetrachloroethane	0.5	nd	1
Tetrachloroethylene	0.5	nd	1.6
Toluene	0.5	nd	24
1,1,1-Trichloroethane	0.5	nd	200
1,1,2-Trichloroethane	0.5	nd	4.7
Trichloroethylene	0.5	nd	1.6
Trichlorofluoromethane	1	nd	150
Vinyl Chloride	0.5	nd	0.5
Xylenes, total	0.5	nd	300

Notes:
- MDL - Method Detection Limit
- nd - Not Detected (i.e <MDL)

No VOC concentrations were detected in the groundwater sample.

All of the analytical results comply with the MECP Table 2 standards.

Phase II Conceptual Site Model

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

As per the Past Investigations Section of this report, the PCA considered to result in an APEC on the Phase II Property is as follows:

Table 3: 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)
APEC 1: Resulting from fill material of unknown quality	Across the Phase II Property	PCA 30 – "*Importation of Fill Material of Unknown Quality.*"	On-site	PHCs PAHs Metals (including Hg, CrVI) VOCs Sodium Chloride EC and SAR	Soil and/or Groundwater

Contaminants of Potential Concern (CPCs)

The following Contaminants of Potential Concern (CPC) were identified with respect to the Phase II Property:

- ❒ Petroleum hydrocarbons (PHCs, Fractions F_1-F_4).
- ❒ Polycyclic Aromatic Hydrocarbons (PAHs).
- ❒ Metals (Hg and CrVI).
- ❒ Volatile Organic Compounds (VOCs).
- ❒ Sodium and Chloride.
- ❒ Sodium Adsorption Ratio (SAR) and Electrical Conductivity (EC).

Subsurface Structures and Utilities

The potable groundwater well and monitoring well are the only subsurface structures present on Phase II Property. Upon development, the Phase II Property will be equipped with a private septic system, electricity and natural gas.

Physical Setting

Site Stratigraphy

The site stratigraphy consists of:

- ❒ Fill material consisting of silt, sand, gravel with some cobbles, shale and road construction materials (i.e., asphalt and concrete), extending to depths ranging from 2.30 to 5.79 mbgs. Groundwater was encountered in this layer at BH1.

- Clayey silt or silty clay was encountered in BH1 and BH2 beneath the fill material, extending to depths of 6.0 to 5.30 mbgs, respectively. Groundwater was encountered in this layer at BH2.
- Silty sand was encountered in BH1 and BH3, extending to depths of 8.35 and 9.45 mbgs, respectively. BH1 was terminated in this layer.
- Sandy silt was encountered in BH3. This borehole was terminated in this layer at a depth of 10.67 mbgs.

Hydrogeological Characteristics

Groundwater at the Phase II Property was generally encountered in the fill ranging at depths of approximately 2.92 to 3.82 mbgs.

Groundwater flow was measured in a northwesterly direction with a hydraulic gradient of 0.015 m/m. Groundwater contours are shown on Drawing PE5100-3R–Test Hole Location Plan.

Approximate Depth to Water Table

Depth to the water table at the Phase II Property varies between approximately 2.30 to 3.82 mbgs and is expected to fluctuate seasonal.

Approximate Depth to Bedrock

Bedrock was not confirmed during the drilling program. All boreholes were completed in native soil. Practical refusal was reached at depths ranging from 5.28 to 10.67 m below the existing grade on inferred bedrock.

Sections 35, 41 and 43.1 of the Regulation

Section 35 of O.Reg. 153/04 does not apply to the Phase II Property in that the property, and the properties within the 250 m study area rely upon potable groundwater.

Section 41 of O.Reg. 153/04 does not apply to the Phase II Property, as the property is not considered an environmentally sensitive area.

Section 43.1 of O.Reg. 153/04 does not apply to the Phase II Property in that the property, is a not situated where Shallow Soils are present.

Fill Placement

Based on the findings of the subsurface investigation, the fill material consisted of a mix of clay, silt, sand and gravel with varying amounts of asphaltic concrete and concrete. The fill varied in thickness from 2.3 to 5.8 m.

Existing Buildings and Structures

No buildings or structures are present on the Phase II Property.

Proposed Buildings and Other Structures

The proposed development for the Phase II Property includes a commercial/light industrial development that will consist of a large warehouse attached with a cross-dock area which leads to an office. The footprint of the development will cover the majority of the central portion of the site, and it will be privately serviced (i.e., septic system and potable groundwater well).

Drinking Water Wells

One potable water well is present on the Phase II Property.

Water Bodies and Areas of Natural Significance

No areas of natural significance were identified within the study area. A tributary of Findley Creek is present approximately 245 m southeast of the Phase I Property and discharges into the North Caster River.

Environmental Condition

Based on the Phase II ESA and Phase II ESA Update, there are no contaminants present on or beneath the Phase II Property.

Conclusion

Based on the findings of the Phase II ESA Update, no further investigation is required on the Phase II Property.

Recommendations

As recommended in the original Phase II ESA, the presence of road waste building materials, asphalt concrete and concrete may restrict the reuse of this material if it requires removal off-site for construction purposes. Any excess soil requiring off-site disposal during construction must be managed in accordance with Ontario Regulation 406/19 – On-site and Excess Soil Management.

Any soils deemed excess during development will require additional analytical testing to determine the appropriate off-site disposal method.

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 conclusions presented herein are based on information gathered from a limited historical review and field inspection program.

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 Fastfrate (Ottawa) Holdings Inc. Permission and notification from Fastfrate (Ottawa) Holdings Inc. and Paterson will be required to release this report to any other party.

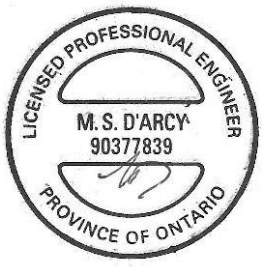
We trust that this submission satisfies your current requirements. Should you have any questions please contact the undersigned.

Regards,

Paterson Group Inc.

Mandy Witteman, M.A.Sc., P.Eng.

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

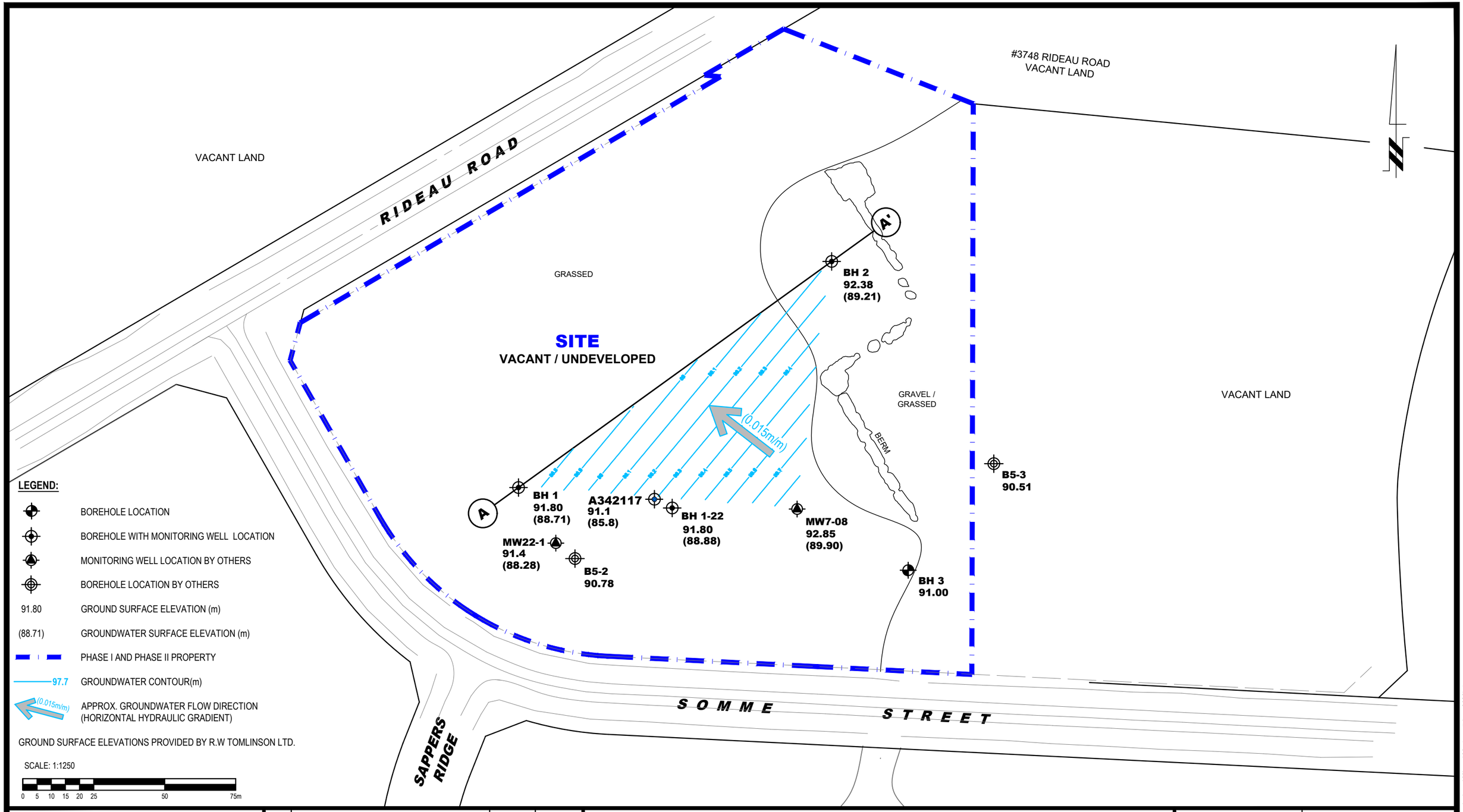


Report Distribution:

- ❑ Fastfrate (Ottawa) Holdings Inc.
- ❑ Paterson Group

Appendix

- ❑ Drawing PE5100-3R – Test Hole Location Plan
- ❑ Drawing PE5100-5R – Analytical Testing Plan – Groundwater
- ❑ Laboratory Certificates of Analysis



LEGEND:

- BOREHOLE LOCATION
- BOREHOLE WITH MONITORING WELL LOCATION
- MONITORING WELL LOCATION BY OTHERS
- BOREHOLE LOCATION BY OTHERS
- 91.80 — GROUND SURFACE ELEVATION (m)
- (88.71) — GROUNDWATER SURFACE ELEVATION (m)
- PHASE I AND PHASE II PROPERTY
- 97.7 — GROUNDWATER CONTOUR(m)
- (0.015m/m) — APPROX. GROUNDWATER FLOW DIRECTION (HORIZONTAL HYDRAULIC GRADIENT)

GROUND SURFACE ELEVATIONS PROVIDED BY R.W TOMLINSON LTD.

SCALE: 1:1250

0 5 10 15 20 25 50 75m

PATERSON GROUP
9 AURIGA DRIVE
OTTAWA, ON
K2E 7S8
TEL: (613) 226-7381

NO.	REVISIONS	DATE	INITIAL

FASTFRATE (OTTAWA) HOLDINGS INC.

PHASE II - ENVIRONMENTAL SITE ASSESSMENT UPDATE
301 SOMME STREET

OTTAWA, ONTARIO

Title:

TEST HOLE LOCATION PLAN

Scale: 1:1250	Date: 09/2022
Drawn by: MPG	Report No.: PE5100-LET.04
Checked by: MW	Dwg. No.: PE5100-3R
Approved by: MSD	Revision No.:

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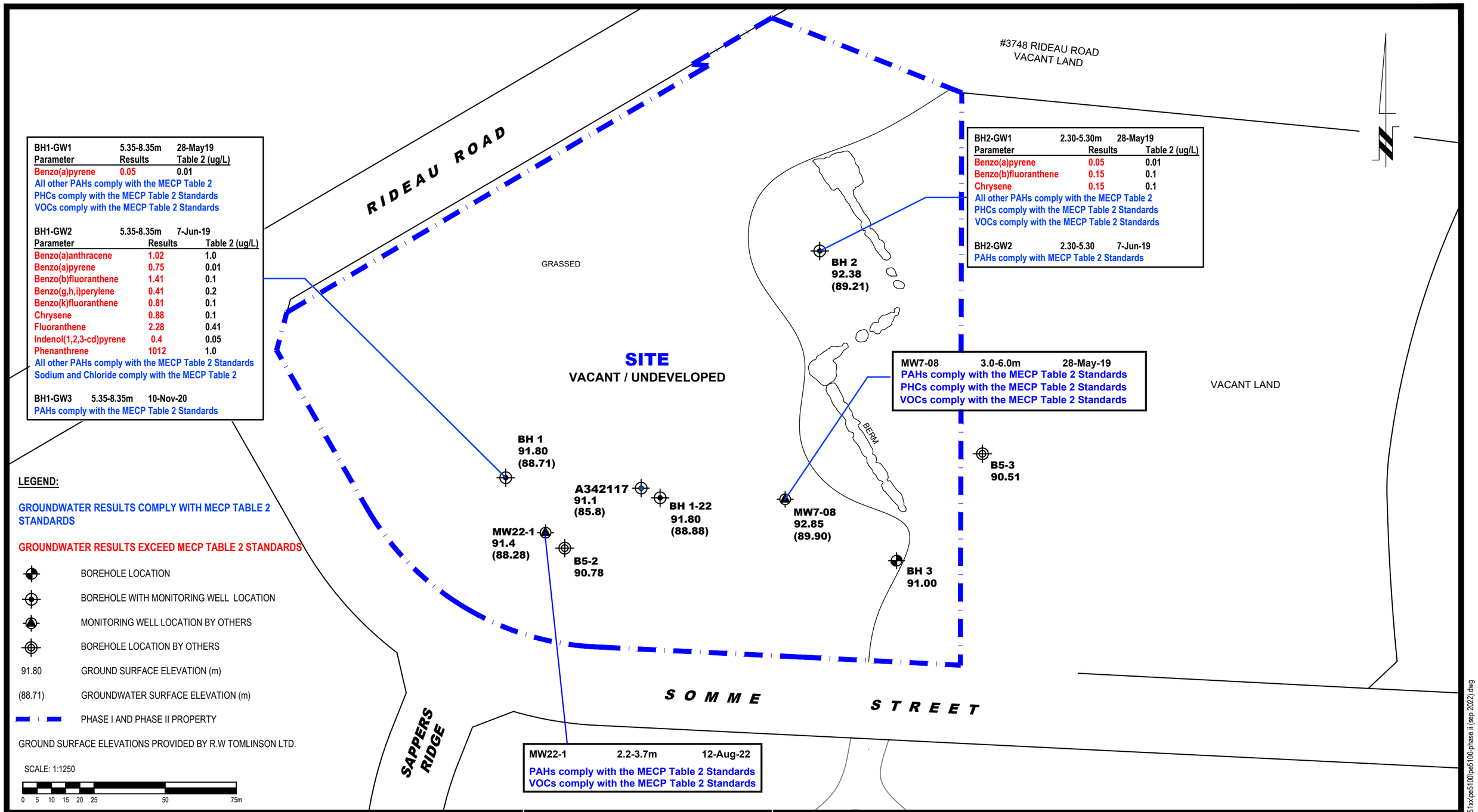

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9 AURIGA DRIVE
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NO.	REVISIONS	DATE	INITIAL

FASTFRATE (OTTAWA) HOLDINGS INC.

PHASE II - ENVIRONMENTAL SITE ASSESSMENT UPDATE
301 SOMME STREET

OTTAWA, ONTARIO

Title:
ANALYTICAL TESTING PLAN - GROUNDWATER

Scale: 1:1250	Date: 09/2022
Drawn by: MPG	Report No.: PE5100-LET.04
Checked by: MW	Dwg. No.: PE5100-5R
Approved by: MSD	Revision No.:

11x17

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Certificate of Analysis

Paterson Group Consulting Engineers

9 Auriga Drive
Ottawa, ON K2E 7T9
Attn: Mandy Witteman

Client PO: 55523
Project: PE5100
Custody: 139321

Report Date: 22-Aug-2022
Order Date: 15-Aug-2022

Order #: 2234098

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

Paracel ID	Client ID
2234098-01	BH1-GW1

Approved By: Mark Foto

Mark Foto, M.Sc.
Lab Supervisor

Certificate of Analysis

Client: Paterson Group Consulting Engineers

Client PO: 55523

Report Date: 22-Aug-2022

Order Date: 15-Aug-2022

Project Description: PE5100

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
REG 153: PAHs by GC-MS	EPA 625 - GC-MS, extraction	18-Aug-22	19-Aug-22
REG 153: VOCs by P&T GC/MS	EPA 624 - P&T GC-MS	16-Aug-22	16-Aug-22

Certificate of Analysis

Report Date: 22-Aug-2022

Client: Paterson Group Consulting Engineers

Order Date: 15-Aug-2022

Client PO: 55523

Project Description: PE5100

	Client ID:	BH1-GW1	-	-	-
	Sample Date:	12-Aug-22 09:00	-	-	-
	Sample ID:	2234098-01	-	-	-
	MDL/Units	Water	-	-	-
Volatiles					
Acetone	5.0 ug/L	<5.0	-	-	-
Benzene	0.5 ug/L	<0.5	-	-	-
Bromodichloromethane	0.5 ug/L	<0.5	-	-	-
Bromoform	0.5 ug/L	<0.5	-	-	-
Bromomethane	0.5 ug/L	<0.5	-	-	-
Carbon Tetrachloride	0.2 ug/L	<0.2	-	-	-
Chlorobenzene	0.5 ug/L	<0.5	-	-	-
Chloroform	0.5 ug/L	<0.5	-	-	-
Dibromochloromethane	0.5 ug/L	<0.5	-	-	-
Dichlorodifluoromethane	1.0 ug/L	<1.0	-	-	-
1,2-Dichlorobenzene	0.5 ug/L	<0.5	-	-	-
1,3-Dichlorobenzene	0.5 ug/L	<0.5	-	-	-
1,4-Dichlorobenzene	0.5 ug/L	<0.5	-	-	-
1,1-Dichloroethane	0.5 ug/L	<0.5	-	-	-
1,2-Dichloroethane	0.5 ug/L	<0.5	-	-	-
1,1-Dichloroethylene	0.5 ug/L	<0.5	-	-	-
cis-1,2-Dichloroethylene	0.5 ug/L	<0.5	-	-	-
trans-1,2-Dichloroethylene	0.5 ug/L	<0.5	-	-	-
1,2-Dichloropropane	0.5 ug/L	<0.5	-	-	-
cis-1,3-Dichloropropylene	0.5 ug/L	<0.5	-	-	-
trans-1,3-Dichloropropylene	0.5 ug/L	<0.5	-	-	-
1,3-Dichloropropene, total	0.5 ug/L	<0.5	-	-	-
Ethylbenzene	0.5 ug/L	<0.5	-	-	-
Ethylene dibromide (dibromoethane, 1,2-)	0.2 ug/L	<0.2	-	-	-
Hexane	1.0 ug/L	<1.0	-	-	-
Methyl Ethyl Ketone (2-Butanone)	5.0 ug/L	<5.0	-	-	-
Methyl Isobutyl Ketone	5.0 ug/L	<5.0	-	-	-
Methyl tert-butyl ether	2.0 ug/L	<2.0	-	-	-
Methylene Chloride	5.0 ug/L	<5.0	-	-	-
Styrene	0.5 ug/L	<0.5	-	-	-
1,1,1,2-Tetrachloroethane	0.5 ug/L	<0.5	-	-	-
1,1,2,2-Tetrachloroethane	0.5 ug/L	<0.5	-	-	-
Tetrachloroethylene	0.5 ug/L	<0.5	-	-	-
Toluene	0.5 ug/L	<0.5	-	-	-
1,1,1-Trichloroethane	0.5 ug/L	<0.5	-	-	-

Certificate of Analysis

Report Date: 22-Aug-2022

Client: Paterson Group Consulting Engineers

Order Date: 15-Aug-2022

Client PO: 55523

Project Description: PE5100

	Client ID:	BH1-GW1	-	-	-
	Sample Date:	12-Aug-22 09:00	-	-	-
	Sample ID:	2234098-01	-	-	-
	MDL/Units	Water	-	-	-
1,1,2-Trichloroethane	0.5 ug/L	<0.5	-	-	-
Trichloroethylene	0.5 ug/L	<0.5	-	-	-
Trichlorofluoromethane	1.0 ug/L	<1.0	-	-	-
Vinyl chloride	0.5 ug/L	<0.5	-	-	-
m,p-Xylenes	0.5 ug/L	<0.5	-	-	-
o-Xylene	0.5 ug/L	<0.5	-	-	-
Xylenes, total	0.5 ug/L	<0.5	-	-	-
4-Bromofluorobenzene	Surrogate	93.3%	-	-	-
Dibromofluoromethane	Surrogate	106%	-	-	-
Toluene-d8	Surrogate	106%	-	-	-
Semi-Volatiles					
Acenaphthene	0.05 ug/L	<0.05	-	-	-
Acenaphthylene	0.05 ug/L	<0.05	-	-	-
Anthracene	0.01 ug/L	<0.01	-	-	-
Benzo [a] anthracene	0.01 ug/L	<0.01	-	-	-
Benzo [a] pyrene	0.01 ug/L	<0.01	-	-	-
Benzo [b] fluoranthene	0.05 ug/L	<0.05	-	-	-
Benzo [g,h,i] perylene	0.05 ug/L	<0.05	-	-	-
Benzo [k] fluoranthene	0.05 ug/L	<0.05	-	-	-
Chrysene	0.05 ug/L	<0.05	-	-	-
Dibenzo [a,h] anthracene	0.05 ug/L	<0.05	-	-	-
Fluoranthene	0.01 ug/L	<0.01	-	-	-
Fluorene	0.05 ug/L	<0.05	-	-	-
Indeno [1,2,3-cd] pyrene	0.05 ug/L	<0.05	-	-	-
1-Methylnaphthalene	0.05 ug/L	<0.05	-	-	-
2-Methylnaphthalene	0.05 ug/L	<0.05	-	-	-
Methylnaphthalene (1&2)	0.10 ug/L	<0.10	-	-	-
Naphthalene	0.05 ug/L	<0.05	-	-	-
Phenanthrene	0.05 ug/L	<0.05	-	-	-
Pyrene	0.01 ug/L	<0.01	-	-	-
2-Fluorobiphenyl	Surrogate	84.3%	-	-	-
Terphenyl-d14	Surrogate	109%	-	-	-

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
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	*13.4*		*ug/L*		*66.8*	*50-140*			
Surrogate: Terphenyl-d14	*17.2*		*ug/L*		*86.2*	*50-140*			
Volatiles									
Acetone	ND	5.0	ug/L						
Benzene	ND	0.5	ug/L						
Bromodichloromethane	ND	0.5	ug/L						
Bromoform	ND	0.5	ug/L						
Bromomethane	ND	0.5	ug/L						
Carbon Tetrachloride	ND	0.2	ug/L						
Chlorobenzene	ND	0.5	ug/L						
Chloroform	ND	0.5	ug/L						
Dibromochloromethane	ND	0.5	ug/L						
Dichlorodifluoromethane	ND	1.0	ug/L						
1,2-Dichlorobenzene	ND	0.5	ug/L						
1,3-Dichlorobenzene	ND	0.5	ug/L						
1,4-Dichlorobenzene	ND	0.5	ug/L						
1,1-Dichloroethane	ND	0.5	ug/L						
1,2-Dichloroethane	ND	0.5	ug/L						
1,1-Dichloroethylene	ND	0.5	ug/L						
cis-1,2-Dichloroethylene	ND	0.5	ug/L						
trans-1,2-Dichloroethylene	ND	0.5	ug/L						
1,2-Dichloropropane	ND	0.5	ug/L						
cis-1,3-Dichloropropylene	ND	0.5	ug/L						
trans-1,3-Dichloropropylene	ND	0.5	ug/L						
1,3-Dichloropropene, total	ND	0.5	ug/L						
Ethylbenzene	ND	0.5	ug/L						
Ethylene dibromide (dibromoethane, 1,2-	ND	0.2	ug/L						
Hexane	ND	1.0	ug/L						
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L						
Methyl Isobutyl Ketone	ND	5.0	ug/L						
Methyl tert-butyl ether	ND	2.0	ug/L						
Methylene Chloride	ND	5.0	ug/L						
Styrene	ND	0.5	ug/L						
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L						
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L						
Tetrachloroethylene	ND	0.5	ug/L						
Toluene	ND	0.5	ug/L						
1,1,1-Trichloroethane	ND	0.5	ug/L						
1,1,2-Trichloroethane	ND	0.5	ug/L						
Trichloroethylene	ND	0.5	ug/L						

Certificate of Analysis

Report Date: 22-Aug-2022

Client: Paterson Group Consulting Engineers

Order Date: 15-Aug-2022

Client PO: 55523

Project Description: PE5100

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Trichlorofluoromethane	ND	1.0	ug/L						
Vinyl chloride	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: 4-Bromofluorobenzene	*79.3*		*ug/L*		*99.1*	*50-140*			
Surrogate: Dibromofluoromethane	*78.3*		*ug/L*		*97.8*	*50-140*			
Surrogate: Toluene-d8	*85.0*		*ug/L*		*106*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Volatiles									
Acetone	ND	5.0	ug/L	ND			NC	30	
Benzene	ND	0.5	ug/L	ND			NC	30	
Bromodichloromethane	ND	0.5	ug/L	ND			NC	30	
Bromoform	ND	0.5	ug/L	ND			NC	30	
Bromomethane	ND	0.5	ug/L	ND			NC	30	
Carbon Tetrachloride	ND	0.2	ug/L	ND			NC	30	
Chlorobenzene	ND	0.5	ug/L	ND			NC	30	
Chloroform	1.00	0.5	ug/L	1.07			6.8	30	
Dibromochloromethane	ND	0.5	ug/L	ND			NC	30	
Dichlorodifluoromethane	ND	1.0	ug/L	ND			NC	30	
1,2-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,3-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,4-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,1-Dichloroethane	ND	0.5	ug/L	ND			NC	30	
1,2-Dichloroethane	ND	0.5	ug/L	ND			NC	30	
1,1-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
cis-1,2-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
trans-1,2-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
1,2-Dichloropropane	ND	0.5	ug/L	ND			NC	30	
cis-1,3-Dichloropropylene	ND	0.5	ug/L	ND			NC	30	
trans-1,3-Dichloropropylene	ND	0.5	ug/L	ND			NC	30	
Ethylbenzene	ND	0.5	ug/L	ND			NC	30	
Ethylene dibromide (dibromoethane, 1,2	ND	0.2	ug/L	ND			NC	30	
Hexane	ND	1.0	ug/L	ND			NC	30	
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L	ND			NC	30	
Methyl Isobutyl Ketone	ND	5.0	ug/L	ND			NC	30	
Methyl tert-butyl ether	ND	2.0	ug/L	ND			NC	30	
Methylene Chloride	ND	5.0	ug/L	ND			NC	30	
Styrene	ND	0.5	ug/L	ND			NC	30	
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L	ND			NC	30	
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L	ND			NC	30	
Tetrachloroethylene	ND	0.5	ug/L	ND			NC	30	
Toluene	ND	0.5	ug/L	ND			NC	30	
1,1,1-Trichloroethane	ND	0.5	ug/L	ND			NC	30	
1,1,2-Trichloroethane	ND	0.5	ug/L	ND			NC	30	
Trichloroethylene	ND	0.5	ug/L	ND			NC	30	
Trichlorofluoromethane	ND	1.0	ug/L	ND			NC	30	
Vinyl chloride	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: 4-Bromofluorobenzene	*74.6*		*ug/L*		*93.2*	*50-140*			
Surrogate: Dibromofluoromethane	*76.5*		*ug/L*		*95.6*	*50-140*			
Surrogate: Toluene-d8	*84.5*		*ug/L*		*106*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Semi-Volatiles									
Acenaphthene	4.28	0.05	ug/L	ND	85.5	50-140			
Acenaphthylene	3.80	0.05	ug/L	ND	76.1	50-140			
Anthracene	3.90	0.01	ug/L	ND	77.9	50-140			
Benzo [a] anthracene	3.87	0.01	ug/L	ND	77.4	50-140			
Benzo [a] pyrene	4.13	0.01	ug/L	ND	82.6	50-140			
Benzo [b] fluoranthene	5.48	0.05	ug/L	ND	110	50-140			
Benzo [g,h,i] perylene	3.97	0.05	ug/L	ND	79.5	50-140			
Benzo [k] fluoranthene	5.12	0.05	ug/L	ND	102	50-140			
Chrysene	3.90	0.05	ug/L	ND	77.9	50-140			
Dibenzo [a,h] anthracene	4.64	0.05	ug/L	ND	92.9	50-140			
Fluoranthene	3.73	0.01	ug/L	ND	74.6	50-140			
Fluorene	3.85	0.05	ug/L	ND	77.0	50-140			
Indeno [1,2,3-cd] pyrene	4.46	0.05	ug/L	ND	89.2	50-140			
1-Methylnaphthalene	4.23	0.05	ug/L	ND	84.7	50-140			
2-Methylnaphthalene	4.57	0.05	ug/L	ND	91.3	50-140			
Naphthalene	4.20	0.05	ug/L	ND	84.0	50-140			
Phenanthrene	3.68	0.05	ug/L	ND	73.7	50-140			
Pyrene	3.72	0.01	ug/L	ND	74.5	50-140			
Surrogate: 2-Fluorobiphenyl	*18.7*		*ug/L*		*93.5*	*50-140*			
Surrogate: Terphenyl-d14	*26.2*		*ug/L*		*131*	*50-140*			
Volatiles									
Acetone	98.2	5.0	ug/L	ND	98.2	50-140			
Benzene	40.6	0.5	ug/L	ND	102	60-130			
Bromodichloromethane	34.5	0.5	ug/L	ND	86.4	60-130			
Bromoform	33.1	0.5	ug/L	ND	82.8	60-130			
Bromomethane	40.2	0.5	ug/L	ND	101	50-140			
Carbon Tetrachloride	33.9	0.2	ug/L	ND	84.8	60-130			
Chlorobenzene	43.0	0.5	ug/L	ND	108	60-130			
Chloroform	43.2	0.5	ug/L	ND	108	60-130			
Dibromochloromethane	31.0	0.5	ug/L	ND	77.6	60-130			
Dichlorodifluoromethane	37.1	1.0	ug/L	ND	92.8	50-140			
1,2-Dichlorobenzene	37.3	0.5	ug/L	ND	93.3	60-130			
1,3-Dichlorobenzene	35.9	0.5	ug/L	ND	89.8	60-130			
1,4-Dichlorobenzene	37.4	0.5	ug/L	ND	93.6	60-130			
1,1-Dichloroethane	40.9	0.5	ug/L	ND	102	60-130			
1,2-Dichloroethane	42.0	0.5	ug/L	ND	105	60-130			
1,1-Dichloroethylene	44.6	0.5	ug/L	ND	111	60-130			
cis-1,2-Dichloroethylene	41.3	0.5	ug/L	ND	103	60-130			
trans-1,2-Dichloroethylene	44.2	0.5	ug/L	ND	110	60-130			
1,2-Dichloropropane	41.6	0.5	ug/L	ND	104	60-130			
cis-1,3-Dichloropropylene	31.5	0.5	ug/L	ND	78.6	60-130			
trans-1,3-Dichloropropylene	32.6	0.5	ug/L	ND	81.6	60-130			
Ethylbenzene	43.6	0.5	ug/L	ND	109	60-130			
Ethylene dibromide (dibromoethane, 1,2	31.2	0.2	ug/L	ND	77.9	60-130			
Hexane	42.7	1.0	ug/L	ND	107	60-130			
Methyl Ethyl Ketone (2-Butanone)	118	5.0	ug/L	ND	118	50-140			
Methyl Isobutyl Ketone	107	5.0	ug/L	ND	107	50-140			
Methyl tert-butyl ether	107	2.0	ug/L	ND	107	50-140			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Methylene Chloride	31.4	5.0	ug/L	ND	78.6	60-130			
Styrene	35.2	0.5	ug/L	ND	88.0	60-130			
1,1,1,2-Tetrachloroethane	31.3	0.5	ug/L	ND	78.3	60-130			
1,1,2,2-Tetrachloroethane	36.3	0.5	ug/L	ND	90.7	60-130			
Tetrachloroethylene	37.2	0.5	ug/L	ND	93.0	60-130			
Toluene	43.5	0.5	ug/L	ND	109	60-130			
1,1,1-Trichloroethane	29.5	0.5	ug/L	ND	73.8	60-130			
1,1,2-Trichloroethane	38.5	0.5	ug/L	ND	96.2	60-130			
Trichloroethylene	41.6	0.5	ug/L	ND	104	60-130			
Trichlorofluoromethane	43.9	1.0	ug/L	ND	110	60-130			
Vinyl chloride	30.7	0.5	ug/L	ND	76.8	50-140			
m,p-Xylenes	83.7	0.5	ug/L	ND	105	60-130			
o-Xylene	42.6	0.5	ug/L	ND	107	60-130			
Surrogate: 4-Bromofluorobenzene	*75.2*		*ug/L*		*94.0*	*50-140*			
Surrogate: Dibromofluoromethane	*61.6*		*ug/L*		*77.0*	*50-140*			
Surrogate: Toluene-d8	*83.0*		*ug/L*		*104*	*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

PARACEL LABORATORIES LTD.

Paracel ID: 2234098

Paracel Order Number (Lab Use Only)	Chain Of Custody (Lab Use Only)
2234098	№ 139321

Client Name: Paterson	Project Ref: PE 5100		Page 1 of 1
Contact Name: Mandy Witteman	Quote #:		Turnaround Time
Address: 9 Auriga Drive	PO #: 55523		☐ 1 day ☐ 3 day
Telephone: 613 226 7381	E-mail: mwitteman@patersongroup.ca		☐ 2 day ☒ Regular
			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)

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)					
1	BH1 - GW1	GW		3	August 12, 2022			X	X									
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

Comments: ~~HOLD for PAH~~

Method of Delivery: PARACEL COURIER

Relinquished By (Sign): [signature]	Received By Driver/Depot: M. Trouse	Received at Lab: Junezpavn Dohmal	Verified By: [signature]
Relinquished By (Print): Bryce Lee	Date/Time: 15/08/22 3:26	Date/Time: Aug 15, 2022 04.15	Date/Time: Aug 15/22 16:24
Date/Time: August 15, 2022	Temperature: °C	Temperature: 16.8 °C	pH Verified: ☐ By:

Chain of Custody (Env) xlsx

Revision 4.0