

March 28, 2018

MacEwen Petroleum Inc.
18 Adelaide Street, P.O. Box 100
Maxville, Ontario
K0C 1T0

Attention: Mr. Larry Duchscher

Dear Sir:

**RE: Soil Sampling Analytical Summary
 3604 Innes Road, Orleans, Ontario
 Trafalgar Project No. T18011**

Trafalgar Environmental Consultants ("TEC") was retained by MacEwen Petroleum Inc. to complete soil sampling during the geotechnical investigation conducted at 3604 Innes Road, Orleans, Ontario ("the site"). The Site Location Map presented on Figure 1 shows the location of the site. The Site Plan presented on Figure 2, which was provided by McIntosh Perry in its draft geotechnical report dated March 2018, shows the site layout and borehole locations.

Three representative soil samples were obtained from the boreholes advanced at the site and submitted to Caduceon Environmental Laboratories for laboratory analysis of one or more of the following: benzene, toluene, ethylbenzene, xylenes ("BTEX"); petroleum hydrocarbons ("PHC") fractions F1 through F4; volatile organic compounds ("VOC"); metals; polycyclic aromatic hydrocarbons ("PAH"). The Certificates of Laboratory Analysis are presented in Appendix A.

The chemical concentrations measured in the soil samples obtained from the boreholes were compared to the O.Reg. 153/04 Table 7 site condition standards ("SCS") for an industrial/commercial/community property use and coarse textured soil. Figures 3 and 4 contain the analytical results and the O.Reg. 153/04 Table 7 SCS. This comparison indicated that the concentrations of chemical parameters measured in the soil samples are in compliance with the O.Reg. 153/04 Table 7 SCS.

If you have any questions, or require additional information, please do not hesitate to contact the undersigned.

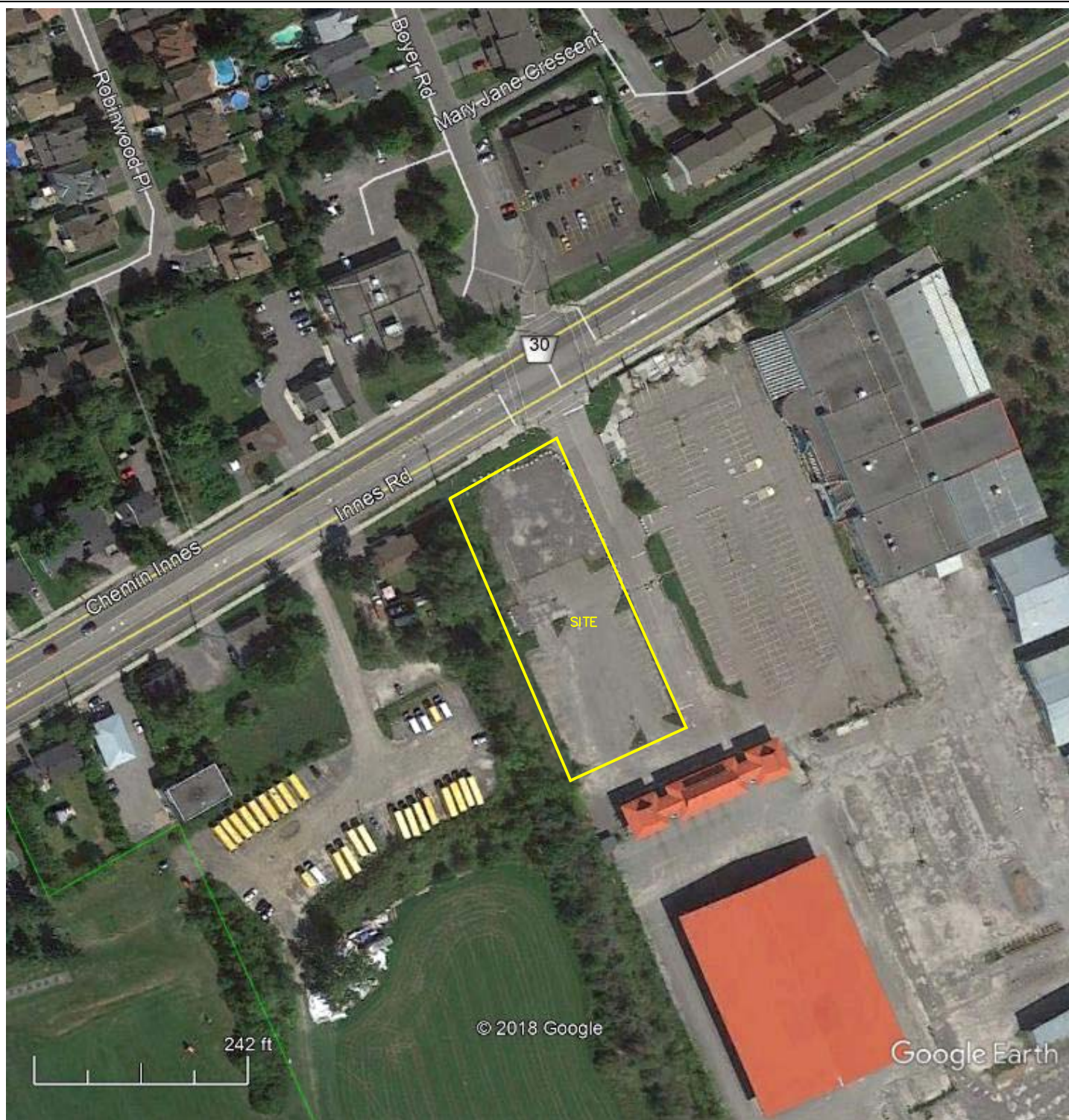
Respectfully submitted,

TRAFALGAR **E**NVIRONMENTAL **C**ONSULTANTS

A handwritten signature in black ink, appearing to read 'Robb Hudson', is written over the company name.

Robb Hudson, P.Eng., MBA, QP_{ESA}

FIGURES

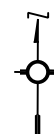


LEGEND

SCALE

AS SHOWN

DRAWN BY	PESD	MAR 16/18
CHECKED BY	RH	MAR 16/18
REVISIONS		
REVISIONS		



TITLE

SITE LOCATION MAP

SITE
VACANT LOT
3604 INNES ROAD
ORLEANS, ONTARIO

FIGURE

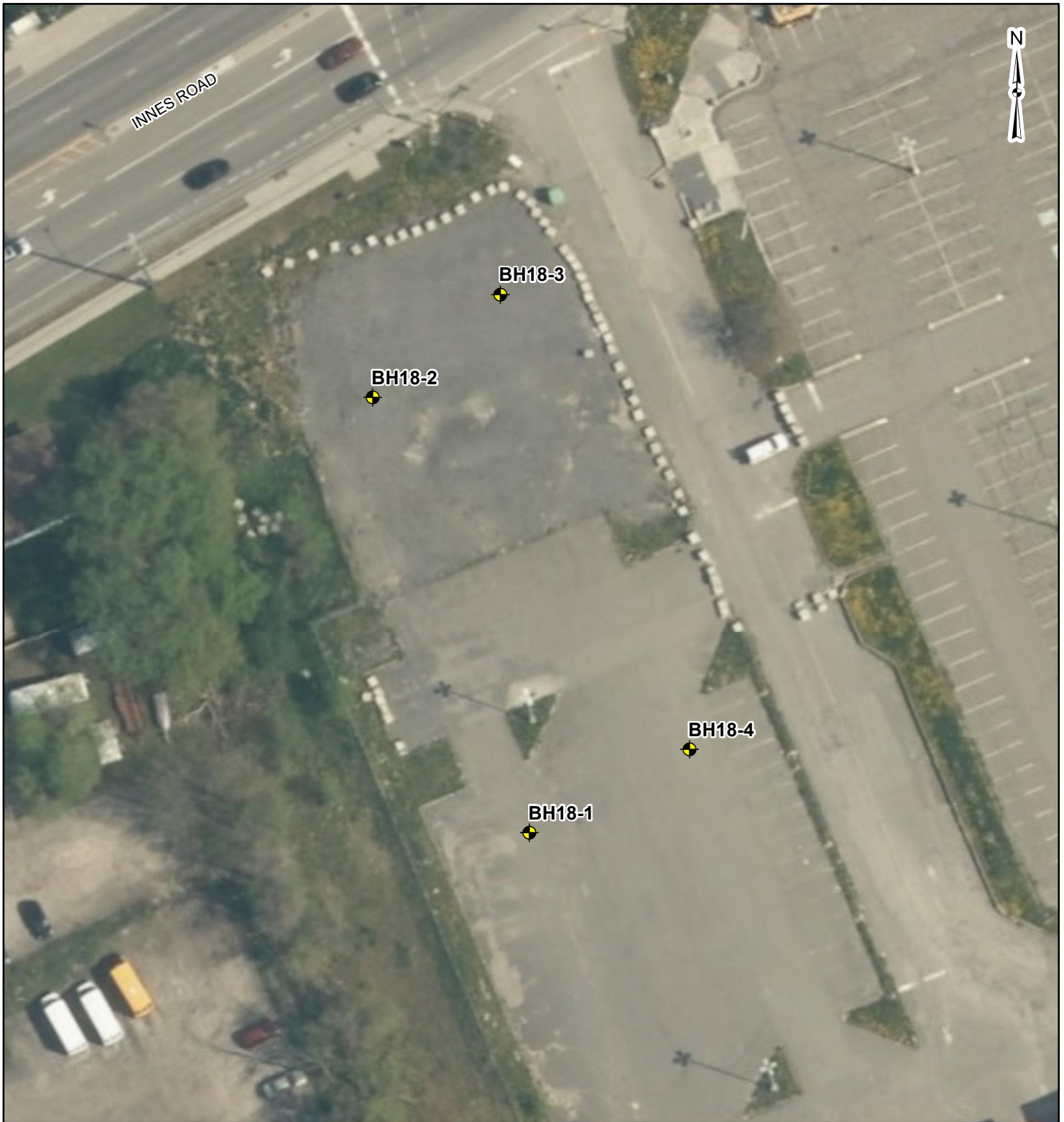
1

TRAFALGAR PROJ. No. T18011

NOTE: SERVICE/UTILITY LOCATIONS ARE APPROXIMATE ONLY

TRAFALGAR ENVIRONMENTAL CONSULTANTS

P.O. Box 93316 Yonge Street, Newmarket, Ontario L3X 1A3
Phone (416) 801-4631 Fax (905) 841-5494
www.trafalgarenvironmental.com

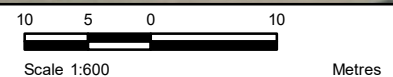


LEGEND

-  Borehole Location

REFERENCE

GIS data provided by the Ontario Ministry of Natural Resources and Forestry, 2018.



CLIENT:		TRAFALGAR ENVIRONMENTAL CONSULTANTS	
PROJECT:		GEOTECHNICAL INVESTIGATION 3604 INNES ROAD	
TITLE:		BOREHOLE LOCATIONS	
McINTOSH PERRY <small>115 Walgreen Road, RR3, Carp, ON K0A1L0 Tel: 613-836-2184 Fax: 613-836-3742 www.mcintoshperry.com</small>		PROJECT NO: CP-18-0050	FIGURE:
		Date	Mar., 15, 2018
		GIS	JD
		Checked By	JU
			2

FIGURE 3 SOIL CHEMICAL ANALYSIS BTEX, PHC, VOC						
Site 3604 Innes Road Orleans, Ontario Trafalgar Project No. T18011 Analytical Laboratory Caduceon Environmental Laboratories						
O.Reg. 153/04 Site Condition Standards* Table 7 - Nonpotable Groundwater Condition Shallow Soils Industrial/Commercial/Community Property Use Coarse Textured Soil	Sample Location	Borehole BH18-3	-	-	-	-
	Trafalgar Sample ID	BH18-3	-	-	-	-
	Sample Depth (m, BGS)	0.00-1.22	-	-	-	-
	Field Vapour Conc. (ppm)	0	-	-	-	-
	Sample Collection Date	March 6, 2018	-	-	-	-
	Laboratory Report Ref. No.	B18-05955	-	-	-	-
	Laboratory Sample ID	B18-05955-2	-	-	-	-
	Sample Analysis Date(s)	March 9-14, 2018	-	-	-	-
Contaminant Names and Site Condition Standards						
Benzene	0.32	nd	-	-	-	-
Toluene	68	nd	-	-	-	-
Ethylbenzene	9.5	nd	-	-	-	-
Xylene Mixture	26	nd	-	-	-	-
Petroleum Hydrocarbons F1 (C6 to C10 - BTEX)**	55	nd	-	-	-	-
Petroleum Hydrocarbons F2 (>C10 to C16)	230	nd	-	-	-	-
Petroleum Hydrocarbons F3 (>C16 to C34)	1700	130	-	-	-	-
Petroleum Hydrocarbons F4 (>C34)	3300	1540	-	-	-	-
Acetone	16	nd	-	-	-	-
Bromodichloromethane	18	nd	-	-	-	-
Bromoform	0.61	nd	-	-	-	-
Bromomethane	0.05	nd	-	-	-	-
Carbon Tetrachloride	0.21	nd	-	-	-	-
Chlorobenzene	2.4	nd	-	-	-	-
Chloroform	0.47	nd	-	-	-	-
Dibromochloromethane	13	nd	-	-	-	-
1,2-Dichlorobenzene (o-DCB)	6.8	nd	-	-	-	-
1,3-Dichlorobenzene (m-DCB)	9.6	nd	-	-	-	-
1,4-Dichlorobenzene (p-DCB)	0.2	nd	-	-	-	-
Dichlorodifluoromethane	16	nd	-	-	-	-
1,1-Dichloroethane	17	nd	-	-	-	-
1,2-Dichloroethane	0.05	nd	-	-	-	-
1,1-Dichloroethylene	0.064	nd	-	-	-	-
cis-1,2-Dichloroethylene	55	nd	-	-	-	-
trans-1,2-Dichloroethylene	1.3	nd	-	-	-	-
1,2-Dichloropropane	0.16	nd	-	-	-	-
1,3-Dichloropropene	0.18	nd	-	-	-	-
Ethylene Dibromide	0.05	nd	-	-	-	-
Hexane (n)	46	nd	-	-	-	-
Methyl Ethyl Ketone	70	nd	-	-	-	-
Methyl Isobutyl Ketone	31	nd	-	-	-	-
Methyl Tert Butyl Ether (MTBE)	11	nd	-	-	-	-
Methylene Chloride	1.6	nd	-	-	-	-
Styrene	34	nd	-	-	-	-
1,1,1,2-Tetrachloroethane	0.087	nd	-	-	-	-
1,1,2,2-Tetrachloroethane	0.05	nd	-	-	-	-
Tetrachloroethylene (PCE)	4.5	nd	-	-	-	-
1,1,1-Trichloroethane	6.1	nd	-	-	-	-
1,1,2-Trichloroethane	0.05	nd	-	-	-	-
Trichloroethylene (TCE)	0.91	nd	-	-	-	-
Trichlorofluoromethane	4	nd	-	-	-	-
Vinyl Chloride	0.032	nd	-	-	-	-
Notes: Reported concentrations are in ug/g (ppm-parts per million) dry weight basis unless otherwise specified. "nd" - non-detectable with respect to the laboratory detection limit (includes diluted samples, refer to Certificates of Laboratory Analysis for detection limits), "-" - sample was not analysed for the chemical parameter. "NGV" - a site condition standard is not specified in O.Reg. 153/04, "BGS" - below ground surface, "NA" - not applicable, "NM" - not measured. *Site condition standards are from Table 7 of "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" (MOE, April 15, 2011). **The Petroleum Hydrocarbons F1 standard does not include BTEX concentrations; the BTEX concentrations have been subtracted from the Petroleum Hydrocarbons F1 analytical results to yield the concentrations reported above. BOLD/Shaded values are not in compliance with the Table 7 nonpotable site condition standards for industrial/commercial/community property use and coarse textured soils.						

FIGURE 4 SOIL CHEMICAL ANALYSIS Metals, PAH						
Site 3604 Innes Road Orleans, Ontario Trafalgar Project No. T18011 Analytical Laboratory Caduceon Environmental Laboratories						
O.Reg. 153/04 Site Condition Standards* Table 7 - Nonpotable Groundwater Condition Shallow Soils Industrial/Commercial/Community Property Use Coarse Textured Soil	Sample Location	Borehole BH18-1	Borehole BH18-4	-	-	-
	Trafalgar Sample ID	BH18-1	BH18-4	-	-	-
	Sample Depth (m, BGS)	0.00-1.22	0.00-1.22	-	-	-
	Field Vapour Conc. (ppm)	0	0	-	-	-
	Sample Collection Date	March 6, 2018	March 6, 2018	-	-	-
	Laboratory Report Ref. No.	B18-05955	B18-05955	-	-	-
	Laboratory Sample ID	B18-05955-1	B18-05955-3	-	-	-
Sample Analysis Date(s)		March 13-14, 2018	March 13, 2018	-	-	-
Contaminant Names and Site Condition Standards						
Antimony	40	nd	-	-	-	-
Arsenic	18	1.3	-	-	-	-
Barium	670	212	-	-	-	-
Beryllium	8	0.3	-	-	-	-
Boron (Hot Water Soluble)**	2	0.13	-	-	-	-
Boron (Total)**	120	7.8	-	-	-	-
Cadmium	1.9	nd	-	-	-	-
Chromium (Total)	160	14	-	-	-	-
Chromium VI	8	nd	-	-	-	-
Cobalt	80	4	-	-	-	-
Copper	230	8	-	-	-	-
Lead	120	9	-	-	-	-
Mercury	3.9	0.013	-	-	-	-
Molybdenum	40	1	-	-	-	-
Nickel	270	13	-	-	-	-
Selenium	5.5	nd	-	-	-	-
Silver	40	0.3	-	-	-	-
Thallium	3.3	0.1	-	-	-	-
Uranium	33	0.5	-	-	-	-
Vanadium	86	14	-	-	-	-
Zinc	340	23	-	-	-	-
Acenaphthene	96	-	nd	-	-	-
Acenaphthylene	0.15	-	nd	-	-	-
Anthracene	0.67	-	nd	-	-	-
Benzo(a)anthracene	0.96	-	nd	-	-	-
Benzo(a)pyrene	0.3	-	nd	-	-	-
Benzo(b)fluoranthene	0.96	-	nd	-	-	-
Benzo(ghi)perylene	9.6	-	nd	-	-	-
Benzo(k)fluoranthene	0.96	-	nd	-	-	-
Chrysene	9.6	-	nd	-	-	-
Dibenz(ah)anthracene	0.1	-	nd	-	-	-
Fluoranthene	9.6	-	nd	-	-	-
Fluorene	62	-	nd	-	-	-
Indeno(123-cd)pyrene	0.76	-	nd	-	-	-
1-Methylnaphthalene	76	-	nd	-	-	-
2-Methylnaphthalene	76	-	nd	-	-	-
Naphthalene	9.6	-	nd	-	-	-
Phenanthrene	12	-	nd	-	-	-
Pyrene	96	-	nd	-	-	-
Notes: Reported concentrations are in ug/g (ppm-parts per million) dry weight basis unless otherwise specified. "nd" - non-detectable with respect to the laboratory detection limit (includes diluted samples, refer to Certificates of Laboratory Analysis for detection limits), "-" - sample was not analysed for the chemical parameter. "NGV" - a site condition standard is not specified in O.Reg. 153/04, "BGS" - below ground surface, "NA" - not applicable, "NM" - not measured. *Site condition standards are from Table 7 of "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" (MOE, April 15, 2011). **The Boron (Hot Water Soluble) standard applies to surface soil samples (0-1.5m BGS), the Boron (Total) standard applies to subsurface soil samples (>1.5m BGS). BOLD /Shaded values are not in compliance with the Table 7 nonpotable site condition standards for industrial/commercial/community property use and coarse textured soils.						

APPENDIX A

CERTIFICATES OF LABORATORY ANALYSIS

C.O.C.: G74554

REPORT No. B18-05955 (i)

Report To:

Trafalgar

PO Box 71612,
Aurora ON L4G 6S9

Attention: Robb Hudson

Caduceon Environmental Laboratories

110 West Beaver Creek Rd Unit 14
Richmond Hill ON L4B 1J9

Tel: 289-475-5442

Fax: 289-562-1963

DATE RECEIVED: 08-Mar-18

JOB/PROJECT NO.:

DATE REPORTED: 15-Mar-18

P.O. NUMBER: 3604

SAMPLE MATRIX: Soil

WATERWORKS NO.

Parameter	Qty	Site Analyzed	Analyst Initials	Date Analyzed	Lab Method	Reference Method
Chromium (VI)	1	Holly Lane	LMG	13-Mar-18	D-CRVI-02 (o)	EPA7196A
Mercury	1	Holly Lane	TPR	14-Mar-18	D-HG-01 (o)	EPA 7471A
Boron - HWS	1	Holly Lane	TPR	13-Mar-18	D-HWE s	MOE3470
Metals - ICP-OES	1	Holly Lane	TPR	13-Mar-18	D-ICP-02 (o)	EPA 6010
Metals - ICP-MS	1	Holly Lane	RPE	13-Mar-18	D-ICPMS-01 (o)	EPA 6020

µg/g = micrograms per gram (parts per million) and is equal to mg/Kg

F1 C6-C10 hydrocarbons in µg/g, (F1-btex if requested)

F2 C10-C16 hydrocarbons in µg/g, (F2-naph if requested)

F3 C16-C34 hydrocarbons in µg/g, (F3-pah if requested)

F4 C34-C50 hydrocarbons in µg/g

This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.

Any deviations from the method are noted and reported for any particular sample.

nC6 and nC10 response factor is within 30% of response factor for toluene:

nC10,nC16 and nC34 response factors within 10% of each other:

C50 response factors within 70% of nC10+nC16+nC34 average:

Linearity is within 15%:

All results expressed on a dry weight basis.

Unless otherwise noted all chromatograms returned to baseline by the retention time of nC50.

Unless otherwise noted all extraction, analysis, QC requirements and limits for holding time were met. If analyzed for F4 and F4G they are not to be summed but the greater of the two numbers are to be used in application to the CWS PHC QC will be made available upon request.

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 3 - ICC Soil - Table 3 - Ind./Commercial/Community Soil Std



Christine Burke
Lab Manager

R.L. = Reporting Limit

Test methods may be modified from specified reference method unless indicated by an *

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

The analytical results reported herein refer to the samples as received. Reproduction of this analytical report in full or in part is prohibited without prior consent from Caduceon Environmental Laboratories.

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Fax: 289-562-1963

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JOB/PROJECT NO.:

DATE REPORTED: 15-Mar-18

P.O. NUMBER: 3604

SAMPLE MATRIX: Soil

WATERWORKS NO.

Client I.D. Sample I.D. Date Collected		BH 18-1 B18-05955-1 06-Mar-18				O. Reg. 153 Tbl. 3 - ICC Soil	
Parameter	Units	R.L.					
Antimony	µg/g	0.5	< 0.5			40	
Arsenic	µg/g	0.5	1.3			18	
Barium	µg/g	1	212			670	
Beryllium	µg/g	0.2	0.3			8	
Boron	µg/g	0.5	7.8			120	
Boron (HWS)	µg/g	0.02	0.13			2	
Cadmium	µg/g	0.5	< 0.5			1.9	
Chromium	µg/g	1	14			160	
Chromium (VI)	µg/g	0.2	< 0.2			8	
Cobalt	µg/g	1	4			80	
Copper	µg/g	1	8			230	
Lead	µg/g	5	9			120	
Mercury	µg/g	0.005	0.013			3.9	
Molybdenum	µg/g	1	1			40	
Nickel	µg/g	1	13			130	
Selenium	µg/g	0.5	< 0.5			5.5	
Silver	µg/g	0.2	0.3			40	
Thallium	µg/g	0.1	0.1			3.3	
Uranium	µg/g	0.1	0.5			33	
Vanadium	µg/g	1	14			86	
Zinc	µg/g	3	23			340	

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 3 - ICC Soil - Table 3 - Ind./Commercial/Community Soil Std



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Lab Manager

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Richmond Hill ON L4B 1J9

Tel: 289-475-5442

Fax: 289-562-1963

DATE RECEIVED: 08-Mar-18

DATE REPORTED: 15-Mar-18

SAMPLE MATRIX: Soil

JOB/PROJECT NO.:

P.O. NUMBER: 3604

WATERWORKS NO.

Summary of Exceedances

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 3 - ICC Soil - Table 3 - Ind./Commercial/Community Soil Std



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Christine Burke
Lab Manager

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C.O.C.: G74554

REPORT No. B18-05955 (ii)

Report To:

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Attention: Robb Hudson

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110 West Beaver Creek Rd Unit 14
Richmond Hill ON L4B 1J9

Tel: 289-475-5442

Fax: 289-562-1963

DATE RECEIVED: 08-Mar-18

JOB/PROJECT NO.:

DATE REPORTED: 15-Mar-18

P.O. NUMBER: 3604

SAMPLE MATRIX: Soil

WATERWORKS NO.

Parameter	Qty	Site Analyzed	Analyst Initials	Date Analyzed	Lab Method	Reference Method
% Moisture	1	Richmond Hill	FAL	09-Mar-18	A-% moisture RH	
PHC(F2-F4)	1	Kingston	avd	14-Mar-18	C-PHC-S-001 (k)	CWS Tier 1
PHC(F2-F4)	1	Kingston	KPR	13-Mar-18	C-PHC-S-001 (k)	CWS Tier 1
VOC's	1	Richmond Hill	FAL	09-Mar-18	C-VOC-02 (rh)	EPA 8260
PHC(F1)	1	Richmond Hill	FAL	09-Mar-18	C-VPHS-01 (rh)	CWS Tier 1

µg/g = micrograms per gram (parts per million) and is equal to mg/Kg

F1 C6-C10 hydrocarbons in µg/g, (F1-btex if requested)

F2 C10-C16 hydrocarbons in µg/g, (F2-naph if requested)

F3 C16-C34 hydrocarbons in µg/g, (F3-pah if requested)

F4 C34-C50 hydrocarbons in µg/g

This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.

Any deviations from the method are noted and reported for any particular sample.

nC6 and nC10 response factor is within 30% of response factor for toluene:

nC10,nC16 and nC34 response factors within 10% of each other:

C50 response factors within 70% of nC10+nC16+nC34 average:

Linearity is within 15%:

All results expressed on a dry weight basis.

Unless otherwise noted all chromatograms returned to baseline by the retention time of nC50.

Unless otherwise noted all extraction, analysis, QC requirements and limits for holding time were met. If analyzed for F4 and F4G they are not to be summed but the greater of the two numbers are to be used in application to the CWS PHC QC will be made available upon request.

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 3 - ICC Soil - Table 3 - Ind./Commercial/Community Soil Std



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Lab Manager

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DATE RECEIVED: 08-Mar-18

JOB/PROJECT NO.:

DATE REPORTED: 15-Mar-18

P.O. NUMBER: 3604

SAMPLE MATRIX: Soil

WATERWORKS NO.

		Client I.D. Sample I.D. Date Collected	BH 18-3 B18-05955-2 06-Mar-18				O. Reg. 153 Tbl. 3 - ICC Soil	
Parameter	Units	R.L.						
Acetone	µg/g	0.5	< 0.5				16	
Benzene	µg/g	0.02	< 0.02				0.32	
Bromodichloromethane	µg/g	0.02	< 0.02				18	
Bromoform	µg/g	0.02	< 0.02				0.61	
Bromomethane	µg/g	0.05	< 0.05				0.05	
Carbon Tetrachloride	µg/g	0.05	< 0.05				0.21	
Monochlorobenzene (Chlorobenzene)	µg/g	0.02	< 0.02				2.4	
Chloroform	µg/g	0.02	< 0.02				0.47	
Dibromochloromethane	µg/g	0.02	< 0.02				13	
Dichlorobenzene, 1,2-	µg/g	0.05	< 0.05				6.8	
Dichlorobenzene, 1,3-	µg/g	0.05	< 0.05				9.6	
Dichlorobenzene, 1,4-	µg/g	0.05	< 0.05				0.2	
Dichlorodifluoromethane	µg/g	0.05	< 0.05				16	
Dichloroethane, 1,1-	µg/g	0.02	< 0.02				17	
Dichloroethane, 1,2-	µg/g	0.02	< 0.02				0.05	
Dichloroethylene, 1,1-	µg/g	0.02	< 0.02				0.064	
Dichloroethene, cis-1,2-	µg/g	0.02	< 0.02				30	
Dichloroethene, trans-1,2-	µg/g	0.02	< 0.02				1.3	
Dichloropropane, 1,2-	µg/g	0.02	< 0.02				0.16	
Dichloropropene, cis-1,3-	µg/g	0.02	< 0.02					
Dichloropropene, trans-1,3-	µg/g	0.02	< 0.02					

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 3 - ICC Soil - Table 3 - Ind./Commercial/Community Soil Std



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Lab Manager

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SAMPLE MATRIX: Soil

WATERWORKS NO.

Client I.D. Sample I.D. Date Collected		BH 18-3 B18-05955-2 06-Mar-18				O. Reg. 153 Tbl. 3 - ICC Soil	
Parameter	Units	R.L.					
Dichloropropene 1,3-cis+trans	µg/g	0.02	< 0.02			0.083	
Ethylbenzene	µg/g	0.05	< 0.05			9.5	
Dibromoethane,1,2-(Ethylene Dibromide)	µg/g	0.02	< 0.02			0.05	
Hexane	µg/g	0.02	< 0.02			46	
Methyl Ethyl Ketone	µg/g	0.5	< 0.5			44	
Methyl Isobutyl Ketone	µg/g	0.5	< 0.5			31	
Methyl-t-butyl Ether	µg/g	0.05	< 0.05			11	
Dichloromethane (Methylene Chloride)	µg/g	0.05	< 0.05			1.6	
Styrene	µg/g	0.05	< 0.05			34	
Tetrachloroethane,1,1,1,2-	µg/g	0.02	< 0.02			0.087	
Tetrachloroethane,1,1,2,2-	µg/g	0.05	< 0.05			0.05	
Tetrachloroethylene	µg/g	0.05	< 0.05			4.5	
Toluene	µg/g	0.2	< 0.2			68	
Trichloroethane,1,1,1-	µg/g	0.02	< 0.02			6.1	
Trichloroethane,1,1,2-	µg/g	0.02	< 0.02			0.05	
Trichloroethylene	µg/g	0.05	< 0.05			0.91	
Trichlorofluoromethane	µg/g	0.02	< 0.02			4	
Vinyl Chloride	µg/g	0.02	< 0.02			0.032	
Xylene, m,p-	µg/g	0.03	< 0.03				
Xylene, o-	µg/g	0.03	< 0.03				

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 3 - ICC Soil - Table 3 - Ind./Commercial/Community Soil Std



Christine Burke
Lab Manager

R.L. = Reporting Limit

Test methods may be modified from specified reference method unless indicated by an *

Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

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C.O.C.: G74554

REPORT No. B18-05955 (ii)

Report To:

Trafalgar

PO Box 71612,
Aurora ON L4G 6S9

Attention: Robb Hudson

Caduceon Environmental Laboratories

110 West Beaver Creek Rd Unit 14
Richmond Hill ON L4B 1J9
Tel: 289-475-5442
Fax: 289-562-1963

DATE RECEIVED: 08-Mar-18

JOB/PROJECT NO.:

DATE REPORTED: 15-Mar-18

P.O. NUMBER: 3604

SAMPLE MATRIX: Soil

WATERWORKS NO.

Client I.D. Sample I.D. Date Collected			BH 18-3 B18-05955-2 06-Mar-18				O. Reg. 153 Tbl. 3 - ICC Soil	
Parameter	Units	R.L.						
Xylene, m,p,o-	µg/g	0.03	< 0.03				26	
PHC F1 (C6-C10)	µg/g	10	< 10				55	
PHC F1 - BTEX	µg/g	10	< 10				55	
PHC F2 (>C10-C16)	µg/g	5	< 5				230	
PHC F3 (>C16-C34)	µg/g	10	130				1700	
PHC F4 (>C34-C50)	µg/g	10	176 ¹				3300	
PHC F4 (Gravimetric)	µg/g	50	1540				3300	
% moisture	%		8.7					

¹ F4 Gravimetric analysis required as chromatids did not return to baseline.

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 3 - ICC Soil - Table 3 - Ind./Commercial/Community Soil Std



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JOB/PROJECT NO.:

P.O. NUMBER: 3604

WATERWORKS NO.

Summary of Exceedances

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 3 - ICC Soil - Table 3 - Ind./Commercial/Community Soil Std



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Lab Manager

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DATE REPORTED: 15-Mar-18

P.O. NUMBER: 3604

SAMPLE MATRIX: Soil

WATERWORKS NO.

Parameter	Qty	Site Analyzed	Analyst Initials	Date Analyzed	Lab Method	Reference Method
SVOC	1	Kingston	sge	13-Mar-18	C-NAB-S-001 (k)	EPA 8270

µg/g = micrograms per gram (parts per million) and is equal to mg/Kg

F1 C6-C10 hydrocarbons in µg/g, (F1-btex if requested)

F2 C10-C16 hydrocarbons in µg/g, (F2-naph if requested)

F3 C16-C34 hydrocarbons in µg/g, (F3-pah if requested)

F4 C34-C50 hydrocarbons in µg/g

This method complies with the Reference Method for the CWS PHC and is validated for use in the laboratory.

Any deviations from the method are noted and reported for any particular sample.

nC6 and nC10 response factor is within 30% of response factor for toluene:

nC10,nC16 and nC34 response factors within 10% of each other:

C50 response factors within 70% of nC10+nC16+nC34 average:

Linearity is within 15%:

All results expressed on a dry weight basis.

Unless otherwise noted all chromatograms returned to baseline by the retention time of nC50.

Unless otherwise noted all extraction, analysis, QC requirements and limits for holding time were met. If analyzed for F4 and F4G they are not to be summed but the greater of the two numbers are to be used in application to the CWS PHC QC will be made available upon request.

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 3 - ICC Soil - Table 3 - Ind./Commercial/Community Soil Std



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Lab Manager

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SAMPLE MATRIX: Soil

WATERWORKS NO.

		Client I.D. Sample I.D. Date Collected	BH 18-4 B18-05955-3 06-Mar-18				O. Reg. 153 Tbl. 3 - ICC Soil	
Parameter	Units	R.L.						
Acenaphthene	µg/g	0.05	< 0.05				96	
Acenaphthylene	µg/g	0.05	< 0.05				0.15	
Anthracene	µg/g	0.05	< 0.05				0.67	
Benzo(a)anthracene	µg/g	0.05	< 0.05				0.96	
Benzo(a)pyrene	µg/g	0.05	< 0.05				0.3	
Benzo(b)fluoranthene	µg/g	0.05	< 0.05				0.96	
Benzo(b+k)fluoranthene	µg/g	0.05	< 0.05					
Benzo(g,h,i)perylene	µg/g	0.05	< 0.05				9.6	
Benzo(k)fluoranthene	µg/g	0.05	< 0.05				0.96	
Chrysene	µg/g	0.05	< 0.05				9.6	
Dibenzo(a,h)anthracene	µg/g	0.05	< 0.05				0.1	
Fluoranthene	µg/g	0.05	< 0.05				9.6	
Fluorene	µg/g	0.05	< 0.05				62	
Indeno(1,2,3,-cd)pyrene	µg/g	0.05	< 0.05				0.76	
Methylnaphthalene,1-	µg/g	0.05	< 0.05				76	
Methylnaphthalene,2-	µg/g	0.05	< 0.05				76	
Methylnaphthalene 2-(1-)	µg/g	0.05	< 0.05				76	
Naphthalene	µg/g	0.05	< 0.05				9.6	
Phenanthrene	µg/g	0.05	< 0.05				12	
Pyrene	µg/g	0.05	< 0.05				96	

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 3 - ICC Soil - Table 3 - Ind./Commercial/Community Soil Std



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Lab Manager

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SAMPLE MATRIX: Soil

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P.O. NUMBER: 3604

WATERWORKS NO.

Summary of Exceedances

O. Reg. 153 - Soil, Ground Water and Sediment Standards
Tbl. 3 - ICC Soil - Table 3 - Ind./Commercial/Community Soil Std



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