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Environmental Site Remediation Program

Part of 4 Booth Street, Chaudière Island
Ottawa, Ontario

Prepared For

Windmill Dream ON Holding LP

August 12, 2019

Report: PE3584-3

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EXECUTIVE SUMMARY

Assessment

Paterson Group (Paterson) monitored a remediation program at part of 4 Booth Street, in the City of Ottawa, Ontario (RSC Property). The Record of Site Condition (RSC) Property is defined by the boundaries on the survey plan provided in Appendix 5. The contaminated material was identified in the Phase II Environmental Site Assessment (ESA) conducted at the RSC Property.

Following the removal of asphaltic concrete from the surface of the RSC Property, contaminated fill was sent to Trail Road Landfill, an approved waste disposal facility, in Ottawa, Ontario. According to the documents provided by the Trail Road Landfill, approximately 22,681 metric tonnes (mt) of contaminated material was sent to the landfill.

All soil was removed from the RSC Property. The remedial excavation was terminated at the bedrock surface or concrete over the bedrock surface at depths ranging from 0 to 3.88 meters below the original grade.

Confirmatory soil samples were not obtained from the excavation as all soil was removed from the RSC Property. All fill and soil material to the bedrock surface was removed from the RSC Property. No soil was brought from another property and placed on, in or under the RSC Property for backfilling or grading. Engineered fill material was brought to the RSC Property. Blast rock from the RSC Property and engineered fill were used for backfilling.

Following a diesel fuel spill on the remediated site, impacted surface water was removed from the RSC Property. According to the MECP incident report, approximately 58,152 L of water was removed by Clean Water Works (CWW).

Eleven post remediation groundwater monitoring wells (MW1-18 through MW11-18) were installed to assess the post-remediation groundwater quality on the RSC Property. After the first round of post-remediation groundwater sampling, MW10-18, MW7-18 and MW9-18 were decommissioned and MW1-19, MW2-19 and MW3-19 were installed to replace them and the second round of post-remediation groundwater sampling was completed. The monitoring wells were screened in the bedrock and installed to depths ranging from approximately 4.62 m to 8.99 m below the drilling surface. The groundwater samples collected were analyzed for a combination of metals, mercury, chromium (VI), sodium, chloride, PCBs, VOCs, BTEX, PHCs and PAHs. Based on the

analytical test results, the groundwater beneath the RSC Property is considered to be in compliance with the MECP Table 7 and Table 9 standards.

Conclusion

Based on our field observations combined with the analytical test results, in our opinion, all soil has been removed from the RSC Property and groundwater is in compliance with the MECP Table 7 and Table 9 Standards. No further remedial work is recommended at this time.

1.0 INTRODUCTION

In June 2018, Paterson Group (Paterson) began monitoring an environmental site remediation program at part of 4 Booth Street, in the City of Ottawa, Ontario (Record of Site Condition (RSC) Property). The findings of the monitoring program are detailed in this report.

The RSC Property is located on the west side of Chaudière Island, in the City of Ottawa, Ontario. The location of the RSC Property is shown on Figure 1 - Key Plan, appended to this report. The RSC Property is defined by the boundaries on the survey plan provided in Appendix 5.

1.1 Background

Paterson completed a Phase I-Environmental Site Assessment (ESA) for the RSC Property, which will be redeveloped with mixed use buildings occupying the majority of the site. Based on a review of historical information, several environmental concerns were identified on and adjacent to the RSC Property, including the former paper mill buildings, former aboveground fuel storage tanks, a former oiler shack, former coal storage area, former railway tracks, a former off-site pump station, and fill material of unknown quality.

Between June and November 2018, Paterson collected soil samples at the RSC Property which identified concentrations of petroleum hydrocarbons (PHC F₁-F₄), polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), volatile organic compounds (VOCs), benzene, toluene, ethylbenzene and xylenes (BTEX) and metals parameters exceeding the Ontario Ministry of the Environment Conservation and Parks (MECP) Table 7 and/or 9 standards.

2.0 SOIL REMEDIATION PROGRAM

Between June 2018 and November 2018, Paterson monitored the excavation and removal of all soil (fill material) at the RSC Property. Impacted fill material was removed horizontally up to the boundaries of the RSC Property, up to concrete surfaces or horizontal bedrock faces. The remedial excavations were terminated at the bedrock surface or concrete over the bedrock surface at depths ranging from approximately 0 to 3.88 meters below the original grade.

Paterson personnel were on site to monitor the excavation process. Excavation of contaminated soil was completed using hydraulic shovels with the impacted

soil taken to Trail Road Landfill, an approved waste disposal facility, in Ottawa, Ontario.

Soil in the vicinity of the remedial excavation generally consisted of brown silty sand fill. Coal, wood, and brick fragments were encountered in pockets throughout the site.

The remedial excavations were terminated at the bedrock surface or concrete over the bedrock surface, which consisted of limestone with interbedded shale. According to the documents provided by the Trail Road Landfill, approximately 22,681 metric tonnes (mt) of contaminated material was sent to the landfill.

3.0 SPILL REMEDIATION

A diesel fuel spill occurred at the RSC Property on September 22, 2018 as a result of a weather-related power failure. Paterson was not on site during the spill event. Reportedly, approximately 50 L of fuel from an AST was released into water sitting on the bedrock surface of the RSC Property. The water was removed from the RSC Property and the fuel spill was reported by Eddy Lands Construction to the MECP Spills Action Centre (Reference Number 7640-B4WG7A). At the time of Paterson's site visit, there were no olfactory or visual indications of impacted water within the boundaries of the RSC Property. According to the MECP incident report, Clean Water Works, a licenced pumping contractor, removed approximately 58,152 L of water.

4.0 FREE PRODUCT

Free product was encountered in several locations in the soil (TP6, TP8, and TP32). The free product consisted of a viscous tar material. All free product was removed from the RSC Property.

No free product was encountered in the post-remediation wells.

5.0 CONFIRMATORY SAMPLING AND ANALYSIS

5.1 Soil Sampling

Approximately 11,341 m³ (22,681 metric tonnes) of fill material was excavated and disposed off-site at a licensed waste disposal facility. Impacted fill material was removed horizontally up to the boundaries of the RSC Property, up to concrete surfaces or horizontal bedrock faces. Impacted fill material was removed down to the bedrock surface or concrete over the bedrock surface. Field observations in combination with analytical testing during the remediation program indicated that where fill material was present, it was considered impacted and for this reason, confirmatory soil samples were not collected.

No soil was brought from another property and placed on, in or under the RSC Property for backfilling or grading. Engineered fill material was brought to the RSC Property. Blast rock from the RSC Property and engineered fill were used for backfilling.

EXP Services Inc. (exp) completed oversight on a utility trench excavation on the RSC Property and off the RSC Property. A July 31, 2019 letter report prepared by exp indicated that materials that were excavated from the RSC Property were not mixed with materials that were excavated from the non-RSC Property and that materials that were excavated from the non-RSC Property were not used for backfilling purposes and were not placed on, in or under the RSC Property at any time. The report identified that no soil was brought from another property and placed on, in or under the RSC Property. Engineered fill material was imported for backfilling. The exp letter report is attached as Appendix 6.

5.2 Post Remediation Groundwater Sampling Program

Eleven post remediation groundwater monitoring wells (MW1-18 through MW11-18) were installed to assess the post-remediation groundwater quality on the RSC Property. After the first round of post-remediation groundwater sampling, MW10-18, MW7-18 and MW9-18 were decommissioned and MW1-19, MW2-19 and MW3-19 were installed to replace them and the second round of post-remediation groundwater sampling was completed. Groundwater samples were collected and submitted for a combination of PHC (F1-F4), BTEX, VOCs, PAHs, metals (including mercury and chromium VI), sodium and chloride and PCB parameters. Contaminants analyzed were selected based on the contaminants of

concern identified in the Phase II ESA. Groundwater samples could not be recovered from MW10-18. The groundwater samples from the post-remediation groundwater monitoring wells (MW1-18 through MW9-18, MW11-18 and MW1-19 to MW3-19) installed in 2018 and 2019 were in compliance with MECP Table 7 and Table 9 standards, with the exception of concentrations of chloroform.

Concentrations of chloroform greater than the MECP Table 7 and Table 9 Standards were detected in the groundwater samples collected from the monitoring wells installed in MW3-18, MW4-18, MW1-19 and MW3-19 at the RSC Property. The source of the chloroform concentrations in the groundwater samples is considered to be municipal water used during the drilling process. Chloroform is considered to be in compliance with the applicable site condition standard as the source of the chloroform is associated with water from a treated municipal water supply and all concentrations of chloroform in the groundwater samples on the RSC Property were less than the 10 µg/L as listed in Table A of the MECP document entitled "Guidance for Addressing Chloroform at a Record of Site Condition Property."

Based on the analytical test results and the Guidance for Addressing Chloroform at a Record of Site Condition Property, the groundwater at the RSC Property is considered to be in compliance with the MECP Table 7 and Table 9 Standards. Groundwater results are provided in Table A1 attached to this report.

A summary of the post remediation monitoring well construction details is provided below in Table 1. The locations of MW1-18 through MW11-18 and MW1-19 through MW3-19 are shown on Drawing PE3584-12 – Post-Remediation Groundwater Sampling Plan.

Table 1: Post Remediation Monitoring Well Construction Details

Well ID	Const. Date	Surface Elevation (Geodetic)	Well Depth (m)	Well Base (Geodetic)	Screened Interval (Geodetic)	Sand Pack (Geodetic)	Bentonite Seal (Geodetic)
MW1-18	Dec.17, 2018	48.14	5.08	43.06	43.06-46.11	43.06-46.77	46.77-47.94
MW2-18	Dec.18, 2018	47.92	4.62	43.30	43.30-44.82	43.30-45.13	45.13-47.92
MW3-18	Dec.20, 2018	48.83	5.41	43.42	43.42-46.47	43.42-46.87	46.87-48.83
MW4-18	Dec.20, 2018	48.74	4.93	43.81	43.81-46.86	43.81-45.18	45.18-48.74
MW5-18	Dec.20, 2018	48.92	4.75	44.17	44.17-47.22	44.17-47.65	47.65-48.92
MW6-18	Jan.9, 2019	48.53	4.95	43.58	43.58-46.63	43.58-46.93	46.93-48.50
MW7-18	Dec.18, 2018	52.52	8.00	44.52	44.52-47.57	44.52-48.00	48.00-52.52
MW8-18	Dec.19, 2018	52.69	6.43	46.26	46.26-49.31	46.26-49.64	49.64-52.69
MW9-18	Dec.19, 2018	51.88	5.61	46.27	46.27-49.32	46.27-49.64	49.64-51.88
MW10-18	Dec.19, 2018	52.95	6.71	46.25	46.25-49.30	46.25-49.75	49.75-52.95
MW11-18	Dec.20, 2018	51.87	7.06	44.81	44.81-47.86	44.81-48.06	48.06-51.87
MW1-19	May 21, 2019	52.24	8.31	43.93	43.93-46.98	43.93-48.81	48.81-52.24
MW2-19	May 21, 2019	52.86	8.43	44.43	44.43-47.48	44.43-49.36	49.36-52.86
MW3-19	May 21, 2019	53.05	8.99	44.06	44.06-47.11	44.06-49.70	49.70-53.05

The post remediation groundwater monitoring wells consisted of 32 mm diameter Schedule 40 threaded PVC risers and screens. A sand pack consisting of silica sand was placed around the screen, and a bentonite seal was placed above the screen to minimize cross-contamination. The monitoring wells were drilled and installed by CCC of Ottawa, Ontario and Downing George Estate Drilling Ltd. of Hawkesbury, Ontario.

Groundwater levels were measured using an electronic water level meter. Groundwater levels are summarized below in Table 2. It should be noted that groundwater levels are expected to fluctuate throughout the year with seasonal variations.

Table 2: Groundwater Level Measurements				
Borehole Location	Surface Elevation (Geodetic)	Water Level Depth (m below grade)	Water Level Elevation (Geodetic)	Date of Measurement
MW1-18	48.14	1.15	46.99	January 18, 2019
		0.46	47.68	April 25, 2019
MW2-18	47.92	1.35	46.57	January 18, 2019
		3.44	44.48	April 25, 2019
MW3-18	48.83	2.91	45.92	January 18, 2019
		0.78	48.05	April 25, 2019
MW4-18	48.74	1.04	47.70	January 21, 2019
		4.28	44.46	April 25, 2019
MW5-18	48.92	1.16	47.76	January 21, 2019
		0.35	48.57	April 25, 2019
MW6-18	48.53	1.16	47.37	January 18, 2019
MW7-18	52.52	5.01	47.51	February 4, 2019
MW8-18	52.69	4.10	48.59	January 18, 2019
		2.33	50.36	April 25, 2019
		2.61	50.08	June 13, 2019
MW9-18	51.88	4.38	47.50	January 22, 2019
MW11-18	51.87	5.47	46.40	January 18, 2019
		2.96	48.91	April 25, 2019
MW1-19	52.24	5.25	46.99	June 5, 2019
MW2-19	52.86	5.45	47.41	June 5, 2019
MW3-19	53.05	5.63	47.42	June 5, 2019

Groundwater sampling protocols were followed using the MECP document entitled "Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario", dated May 1996. Groundwater samples were obtained from each monitoring well, using dedicated sampling equipment. Standing water was purged from each well prior to sampling. Samples were stored in coolers to reduce analyte volatilization during transportation.

5.3 Analytical Testing

The site condition standards selected for the RSC Property were taken from the more stringent of Table 7 and Table 9 of the document entitled "*Soil, Groundwater and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act*" prepared by the Ontario Ministry of Environment, Conservation and Parks, dated April 15, 2011. The Table 7 and Table 9 standards are based on the following considerations:

- Coarse-grained soil conditions
- Shallow soil property (Table 7)
- Within 30 m of a surface water body (Table 9)
- Non-potable groundwater conditions
- Residential land use
- Full depth conditions

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

5.4 Quality Assurance/Quality Control

As per the Sampling and Analysis Plan, duplicate groundwater samples (DUP-PR1 and DUP-PR2) were collected from MW5-18. The duplicate results are used to calculate the relative percent difference (RPD) between sample values as a way of assessing the quality of the analytical results.

No detectable concentrations were identified in the sample and its duplicates; as such no RPD values were calculated. Typically, RPD values below 20% are considered to be of satisfactory quality.

All samples submitted as part of the 2018 and 2019 sampling events were handled in accordance with the Analytical Protocol with respect to holding time, preservation method, storage requirement, and container type.

As per Subsection 47(3) of O.Reg. 153/04, a Certificate of Analysis has been received for each sample submitted for analysis during the 2018 and 2019 sampling events, and all Certificates of Analysis are appended to this report.

Overall, the quality of the field data collected during the remediation program is considered to be sufficient to meet the overall objectives of this assessment.

6.0 CONCLUSION

6.1 Assessment

Paterson Group (Paterson) monitored a remediation program at part of 4 Booth Street, in the City of Ottawa, Ontario (RSC Property). The Record of Site Condition (RSC) Property is defined by the boundaries on the survey plan provided in Appendix 5. The contaminated material was identified in the Phase II Environmental Site Assessment (ESA) conducted at the RSC Property.

Following the removal of asphaltic concrete from the surface of the RSC Property, contaminated fill was sent to Trail Road Landfill, an approved waste disposal facility, in Ottawa, Ontario. According to the documents provided by the Trail Road Landfill, approximately 22,681 metric tonnes (mt) of contaminated material was sent to the landfill.

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PCBs, VOCs, BTEX, PHCs and PAHs. Based on the analytical test results, the groundwater beneath the RSC Property is considered to be in compliance with the MECP Table 7 and Table 9 standards.

6.2 Conclusion

Based on our field observations combined with the analytical test results, in our opinion, all soil has been removed from the RSC Property and groundwater is in compliance with the MECP Table 7 and Table 9 Standards. No further remedial work is recommended at this time.

7.0 STATEMENT OF LIMITATIONS

The results of the sampling program are based on our field observations, vapour survey results, and analytical test results obtained at specific test locations which can only be extrapolated to an undefined limited area around each location. The test results may not reflect conditions at other locations or areas beyond the extent of the excavation.

This report was prepared for the sole use of Windmill Dream ON Holding LP. Permission from Windmill Dream ON Holding LP and Paterson Group will be required to release this report to any other party.

Paterson Group Inc.



Anna Graham, M.E.S.



Carlos P. Da Silva, P.Eng., QP_{ESA}



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FIGURES

FIGURE 1 – KEY PLAN

DRAWING PE3584-12 – POST REMEDIATION GROUNDWATER SAMPLING PLAN

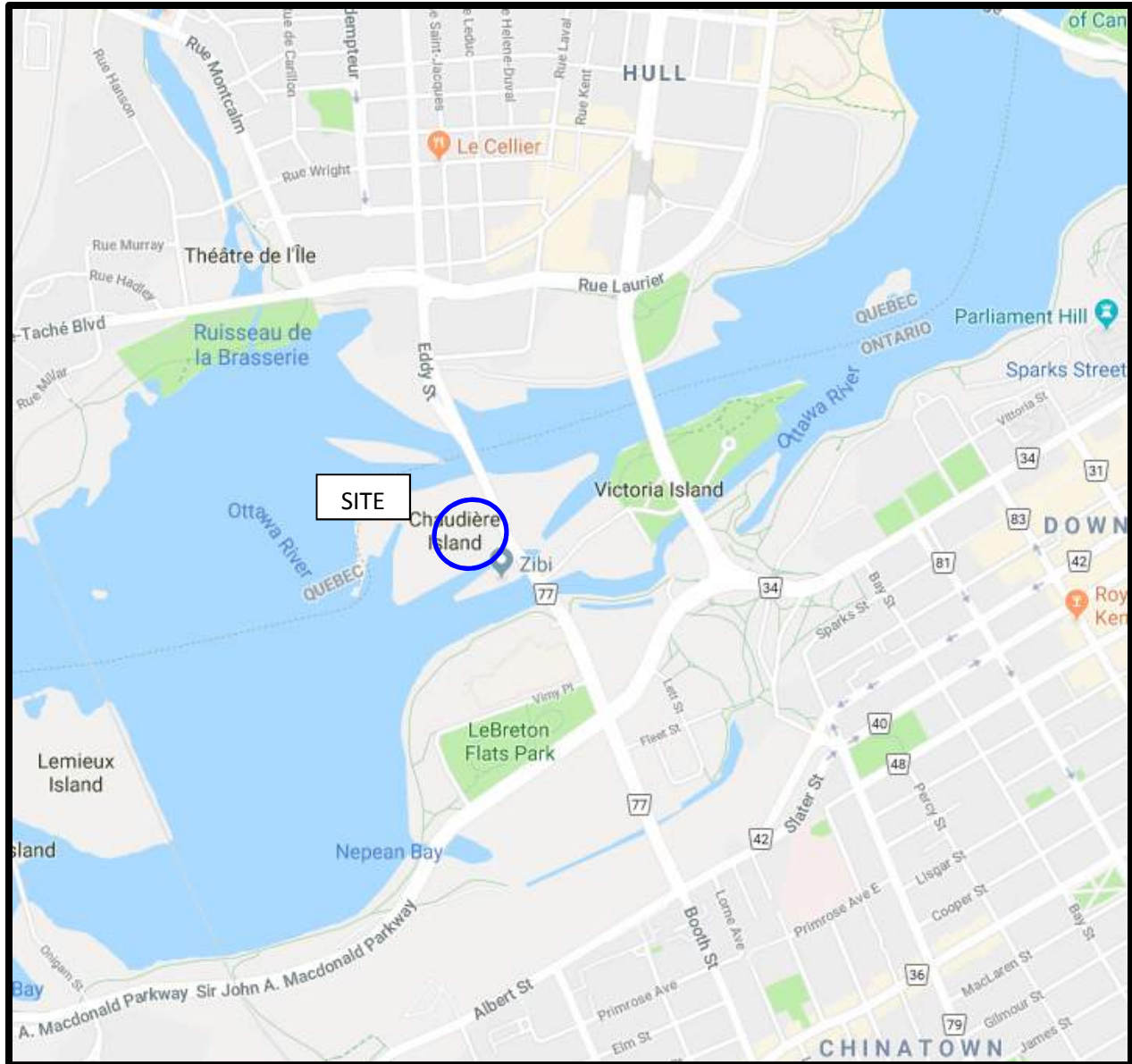
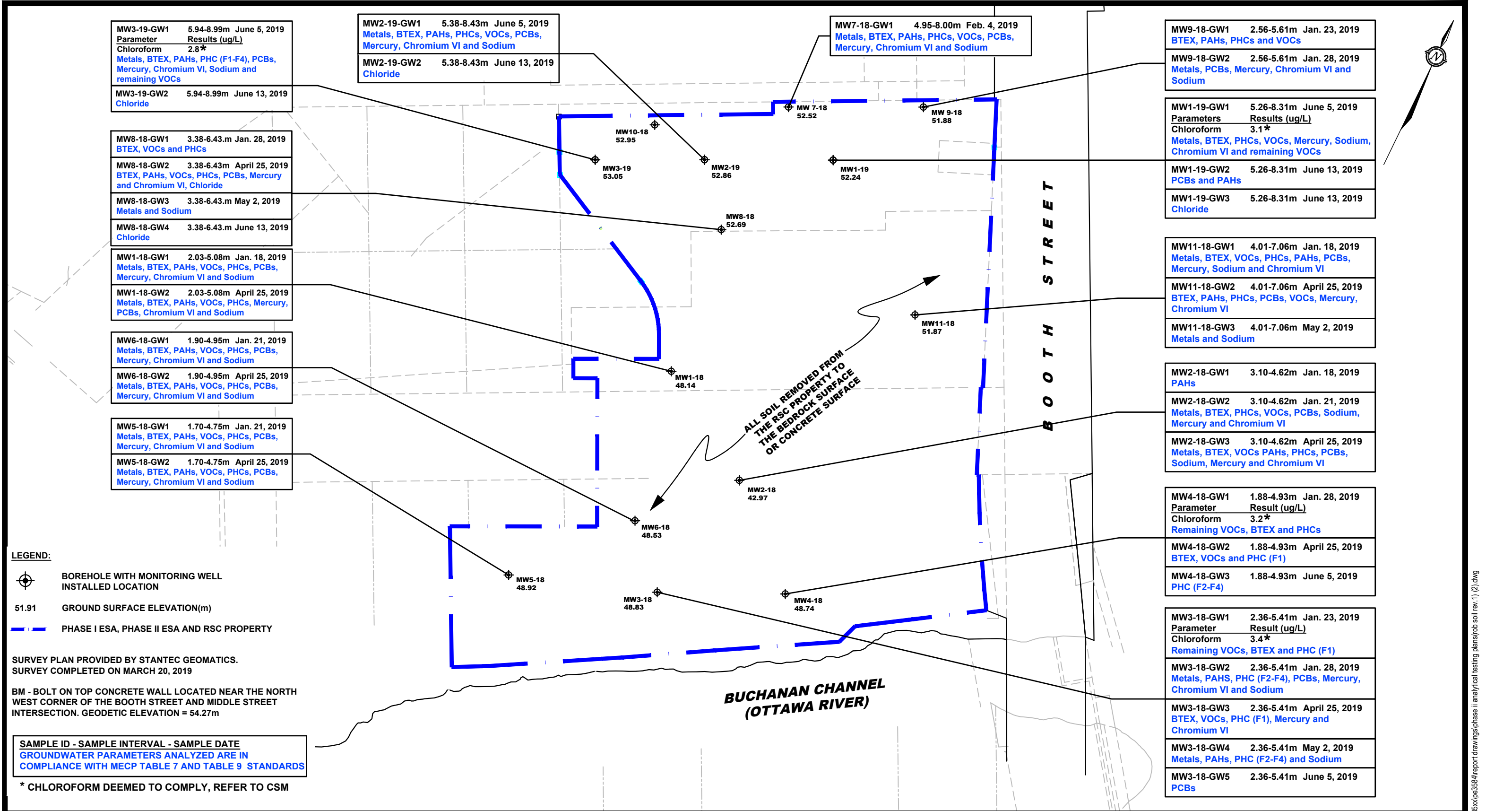


FIGURE 1
KEY PLAN



patersongroup consulting engineers 154 Colonnade Road South Ottawa, Ontario K2E 7J5 Tel: (613) 226-7381 Fax: (613) 226-6344					WINDMILL DREAM ON HOLDING LP REMEDATION PROGRAM PART OF 4 BOOTH STREET	Scale: 1:750	Date: 04/2019	
						Drawn by: RCG	Report No.:	
					OTTAWA, Title: POST REMEDIATION GROUNDWATER SAMPLING PLAN	Checked by: LK	PE3584-12	
						Approved by: CDS		Revision No.:
	NO.	REVISIONS	DATE	INITIAL				

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APPENDIX 1

TABLE A1 - ANALYTICAL TEST RESULTS – GROUNDWATER

**Post-Remediation Groundwater Sampling Program
Environmental Remediation
Part of 4 Booth Street - Ottawa**

Parameter	MDL (ug/L)	MECP Standards		MW1-18-GW1	MW2-18-GW1	MW11-18-GW1	MW2-18-GW2	MW5-18-GW1	MW6-18-GW1	Dup-PR1	MW 3-18-GW1	MW 9-18-GW1	MW3-18-GW2	MW4-18-GW1	MW8-18-GW1	MW9-18-GW2	MW7-18-GW1	MW1-18-GW2	MW2-18-GW3	MW3-18-GW3	MW4-18-GW2	MW5-18-GW2	MW6-18-GW2	MW8-18-GW2
		Table 7 (ug/L)	Table 9 (ug/L)																					
Sample depth (mbgs)				2.03-5.08 m	3.10-4.62 m	4.01-7.06 m	3.10-4.62 m	1.70-4.75 m	1.90-4.95 m	1.70-4.75 m	2.36-5.41 m	2.56-5.61 m	2.36-5.41 m	1.88-4.93 m	3.38-6.43 m	2.56-5.61 m	4.95-8.00 m	2.03-5.08 m	3.10-4.62 m	2.36-5.41 m	1.88-4.93 m	1.70-4.75 m	1.90-4.95 m	3.38-6.43 m
Sample Date (m/d/y)				Jan.18, 2019	Jan.18, 2019	Jan.18, 2019	Jan.21, 2019	Jan.21, 2019	Jan.21, 2019	Jan.21, 2019	Jan.23, 2019	Jan.23, 2019	Jan.28, 2019	Jan.28, 2019	Jan.28, 2019	Jan.28, 2019	Feb.4, 2019	Apr.25, 2019	Apr.25, 2019	Apr.25, 2019	Apr.25, 2019	Apr.25, 2019	Apr.25, 2019	Apr.25, 2019
Anions																								
Chloride	1	1800000	1800000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1600000
Metals																								
Mercury	0.1	0.1	0.29	ND (0.1)	-	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	-	-	-	ND (0.1)	-	-	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	-	ND (0.1)	ND (0.1)	ND (0.1)
Antimony	0.5	16000	16000	ND (0.5)	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	-	-	-	ND (0.5)	-	-	0.6	0.6	ND (0.5)	ND (0.5)	-	-	0.6	ND (0.5)	-
Arsenic	1	1500	1500	ND (1)	-	5	2	12	2	-	-	-	1	-	-	ND (1)	4	1	ND (1)	-	-	3	ND (1)	-
Barium	1	23000	23000	50	-	74	213	557	240	-	-	-	307	-	-	118	147	142	503	-	-	553	199	-
Beryllium	0.5	53	53	ND (0.5)	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	-	-	-	ND (0.5)	-	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	-	-	ND (0.5)	ND (0.5)	-
Boron	10	36000	36000	27	-	65	53	67	53	-	-	-	63	-	-	91	123	45	65	-	-	57	31	-
Cadmium	0.1	2.1	2.1	ND (0.1)	-	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	-	-	-	ND (0.1)	-	-	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	-	-	ND (0.1)	ND (0.1)	-
Chromium	1	640	640	ND (1)	-	ND (1)	ND (1)	ND (1)	ND (1)	-	-	-	ND (1)	ND (1)	-	4	ND (1)	ND (1)	ND (1)	-	-	ND (1)	ND (1)	-
Chromium (VI)	10	110	110	ND (10)	-	ND (10)	ND (10)	ND (10)	ND (10)	-	-	-	ND (10)	-	-	ND (10)	ND (10)	ND (10)	ND (10)	ND (10)	-	ND (10)	ND (10)	ND (10)
Cobalt	0.5	52	52	ND (0.5)	-	ND (0.5)	0.7	3.6	0.6	-	-	-	0.6	-	-	1.3	0.5	ND (0.5)	0.7	-	-	1.3	ND (0.5)	-
Copper	0.5	69	69	ND (0.5)	-	2.6	ND (0.5)	0.6	1.0	-	-	-	2.1	-	-	6.7	ND (0.5)	1.3	ND (0.5)	-	-	1.0	ND (0.5)	-
Lead	0.1	20	20	ND (0.1)	-	0.2	ND (0.1)	ND (0.1)	ND (0.1)	-	-	-	ND (0.1)	-	-	0.3	ND (0.1)	ND (0.1)	ND (0.1)	-	-	ND (0.1)	ND (0.1)	-
Molybdenum	0.5	7300	7300	0.8	-	44.4	5.1	14.9	4.7	-	-	-	2.4	-	-	5.2	23.4	8.2	2.9	-	-	14.7	1.1	-
Nickel	1	390	390	ND (1)	-	5	2	23	2	-	-	-	2	2	-	7	3	2	2	-	-	8	ND (1)	-
Selenium	1	50	50	ND (1)	-	ND (1)	ND (1)	2	ND (1)	-	-	-	ND (1)	-	-	ND (1)	ND (1)	ND (1)	ND (1)	-	-	ND (1)	ND (1)	-
Silver	0.1	1.2	1.2	ND (0.1)	-	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	-	-	-	ND (0.1)	-	-	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	-	-	ND (0.1)	ND (0.1)	-
Sodium	200	1800000	1800000	32300	-	163000	79500	203000	83300	-	-	-	81400	-	-	1250000	635000	141000	174000	-	-	155000	37000	-
Thallium	0.1	400	400	ND (0.1)	-	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	-	-	-	ND (0.1)	-	-	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)	-	-	ND (0.1)	ND (0.1)	-
Uranium	0.1	330	330	0.3	-	1.4	1.6	0.6	1.1	-	-	-	0.9	-	-	3.1	2.8	0.8	0.5	-	-	0.7	0.5	-
Vanadium	0.5	200	200	0.8	-	2.3	1.2	5.2	1.4	-	-	-	1.2	-	-	1.5	0.7	77.4	0.6	-	-	5.4	0.7	-
Zinc	5	890	890	ND (5)	-	ND (5)	ND (5)	ND (5)	ND (5)	-	-	-	ND (5)	-	-	9	6	ND (5)	ND (5)	-	-	ND (5)	ND (5)	-
Volatiles																								
Acetone	5.0	100000	100000	ND (5.0)	-	ND (5.0)	ND (5.0)	160	ND (5.0)	-	ND (5.0)	ND (5.0)	-	ND (5.0)	ND (5.0)	-	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
Benzene	0.5	0.5	44	ND (0.5)	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromodichloromethane	0.5	67000	67000	ND (0.5)	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	-	ND (0.5)	1.3	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromoform	0.5	5	380	ND (0.5)	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromomethane	0.5	0.89	5.6	ND (0.5)	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Carbon Tetrachloride	0.2	0.2	0.79	ND (0.2)	-	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	-	ND (0.2)	ND (0.2)	-	ND (0.2)	ND (0.2)	-	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Chlorobenzene	0.5	140	500	ND (0.5)	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Chloroform	0.5	2	2.4	ND (0.5)	-	ND (0.5)	ND (0.5)	0.7	ND (0.5)	-	3.4	ND (0.5)	-	3.2	1.3	-	ND (0.5)	ND (0.5)	ND (0.5)	1.6	0.6	ND (0.5)	ND (0.5)	0.5
Dibromochloromethane	0.5	65000	65000	ND (0.5)	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Dichlorodifluoromethane	1.0	3500	3500	ND (1.0)	-	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	-	ND (1.0)	ND (1.0)	-	ND (1.0)	ND (1.0)	-	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,2-Dichlorobenzene	0.5	150	4600	ND (0.5)	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,3-Dichlorobenzene	0.5	7600	7600	ND (0.5)	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,4-Dichlorobenzene	0.5	0.5	8	ND (0.5)	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1-Dichloroethane	0.5	11	320	ND (0.5)	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,2-Dichloroethane	0.5	0.5	1.6	ND (0.5)	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1-Dichloroethylene	0.5	0.5	1.6	ND (0.5)	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
cis-1,2-Dichloroethylene	0.5	1.6	1.6	ND (0.5)	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
trans-1,2-Dichloroethylene	0.5	1.6	1.6	ND (0.5)	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,2-Dichloropropane	0.5	0.58	16	ND (0.5)	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
cis-1,3-Dichloropropylene	0.5			ND (0.5)	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
trans-1,3-Dichloropropylene	0.5			ND (0.5)	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,3-Dichloropropene, total	0.5	0.5	5.2	ND (0.5)	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Ethylbenzene	0.5	54	1800	ND (0.5)	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Ethylene dibromide (dibromoethane, 1,2-)	0.2	0.2	0.25	ND (0.2)	-	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	-	ND (0.2)	ND (0.2)	-	ND (0.2)	ND (0.2)	-	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Hexane	1.0	5	51	ND (1.0)	-	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	-	ND (1.0)	ND (1.0)	-	ND (1.0)	ND (1.0)	-	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Methyl Ethyl Ketone (2- Butanone)	5.0	21000	470000	ND (5.0)	-	ND (5.0)	ND (5.0)	17.2	ND (5.0)	-	ND (5.0)	ND (5.0)	-	ND (5.0)	ND (5.0)	-	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
Methyl Isobutyl Ketone	5.0	5200	140000	ND (5.0)	-	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	-	ND (5.0)	ND (5.0)	-	ND (5.0)	ND (5.0)	-	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
Methyl tert-butyl ether	2.0	15	190	ND (2.0)	-	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	-	ND (2.0)	ND (2.0)	-	ND (2.0)	ND (2.0)	-	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Methylene Chloride	5.0	26	610	ND (5.0)	-	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	-	ND (5.0)	ND (5.0)	-	ND (5.0)	ND (5.0)	-	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
Styrene	0.5	43	1300	ND (0.5)	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,1,2-Tetrachloroethane	0.5	1.																						

Post-Remediation Groundwater Sampling Program
Environmental Remediation
Part of 4 Booth Street - Ottawa

Parameter	MDL (ug/L)	MECP Standards		MW1-18-GW1	MW2-18-GW1	MW11-18-GW1	MW2-18-GW2	MW5-18-GW1	MW6-18-GW1	Dup-PR1	MW 3-18-GW1	MW 9-18-GW1	MW3-18-GW2	MW4-18-GW1	MW8-18-GW1	MW9-18-GW2	MW7-18-GW1	MW1-18-GW2	MW2-18-GW3	MW3-18-GW3	MW4-18-GW2	MW5-18-GW2	MW6-18-GW2	MW8-18-GW2
Sample depth (mbgs)		Table 7 (ug/L)	Table 9 (ug/L)	2.03-5.08 m	3.10-4.62 m	4.01-7.06 m	3.10-4.62 m	1.70-4.75 m	1.90-4.95 m	1.70-4.75 m	2.36-5.41 m	2.56-5.61 m	2.36-5.41 m	1.88-4.93 m	3.38-6.43 m	2.56-5.61 m	4.95-8.00 m	2.03-5.08 m	3.10-4.62 m	2.36-5.41 m	1.88-4.93 m	1.70-4.75 m	1.90-4.95 m	3.38-6.43 m
Sample Date (m/d/y)				Jan.18, 2019	Jan.18, 2019	Jan.18, 2019	Jan.21, 2019	Jan.21, 2019	Jan.21, 2019	Jan.21, 2019	Jan.23, 2019	Jan.23, 2019	Jan.28, 2019	Jan.28, 2019	Jan.28, 2019	Jan.28, 2019	Feb.4, 2019	Apr.25, 2019	Apr.25, 2019	Apr.25, 2019	Apr.25, 2019	Apr.25, 2019	Apr.25, 2019	Apr.25, 2019
Hydrocarbons																								
F1 PHCs (C6-C10)	25	420	420	ND (25)	-	ND (25)	ND (25)	ND (25)	ND (25)	-	ND (25)	ND (25)	-	ND (25)	ND (25)	-	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)	ND (25)
F2 PHCs (C10-C16)	100	150	150	ND (100)	-	ND (100)	ND (100)	ND (100)	ND (100)	-	-	ND (100)	ND (100)	ND (100)	ND (100)	-	ND (100)	ND (100)	ND (100)	-	-	ND (100)	ND (100)	ND (100)
F3 PHCs (C16-C34)	100	500	500	ND (100)	-	ND (100)	ND (100)	ND (100)	ND (100)	-	ND (100)	ND (100)	ND (100)	ND (100)	ND (100)	-	ND (100)	ND (100)	ND (100)	-	-	ND (100)	ND (100)	ND (100)
F4 PHCs (C34-C50)	100	500	500	ND (100)	-	ND (100)	ND (100)	ND (100)	ND (100)	-	-	ND (100)	ND (100)	ND (100)	ND (100)	-	ND (100)	ND (100)	ND (100)	-	-	ND (100)	ND (100)	ND (100)
Semi-Volatiles																								
Acenaphthene	0.05	17	600	ND (0.05)	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)	-	-	-	ND (0.05)	ND (0.05)	ND (0.05)	-	-	ND (0.05)	ND (0.05)	ND (0.05)
Acenaphthylene	0.05	1	1.4	ND (0.05)	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)	-	-	-	ND (0.05)	ND (0.05)	ND (0.05)	-	-	ND (0.05)	ND (0.05)	ND (0.05)
Anthracene	0.01	1	1	ND (0.01)	ND (0.01)	0.12	-	ND (0.01)	ND (0.01)	ND (0.01)	-	ND (0.01)	ND (0.01)	-	-	-	ND (0.01)	ND (0.01)	ND (0.01)	-	-	ND (0.01)	ND (0.01)	ND (0.01)
Benzo[a]anthracene	0.01	1.8	1.8	ND (0.01)	ND (0.01)	0.11	-	ND (0.01)	ND (0.01)	ND (0.01)	-	ND (0.01)	ND (0.01)	-	-	-	ND (0.01)	ND (0.01)	ND (0.01)	-	-	ND (0.01)	ND (0.01)	ND (0.01)
Benzo[a]pyrene	0.01	0.81	0.81	ND (0.01)	ND (0.01)	0.11	-	ND (0.01)	ND (0.01)	ND (0.01)	-	ND (0.01)	ND (0.01)	-	-	-	ND (0.01)	ND (0.01)	ND (0.01)	-	-	ND (0.01)	ND (0.01)	ND (0.01)
Benzo[b]fluoranthene	0.05	0.75	0.75	ND (0.05)	ND (0.05)	0.10	-	ND (0.05)	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)	-	-	-	ND (0.05)	ND (0.05)	ND (0.05)	-	-	ND (0.05)	ND (0.05)	ND (0.05)
Benzo[g,h,i]perylene	0.05	0.2	0.2	ND (0.05)	ND (0.05)	0.06	-	ND (0.05)	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)	-	-	-	ND (0.05)	ND (0.05)	ND (0.05)	-	-	ND (0.05)	ND (0.05)	ND (0.05)
Benzo[k]fluoranthene	0.05	0.4	0.4	ND (0.05)	ND (0.05)	0.05	-	ND (0.05)	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)	-	-	-	ND (0.05)	ND (0.05)	ND (0.05)	-	-	ND (0.05)	ND (0.05)	ND (0.05)
Chrysene	0.05	0.7	0.7	ND (0.05)	ND (0.05)	0.10	-	ND (0.05)	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)	-	-	-	ND (0.05)	ND (0.05)	ND (0.05)	-	-	ND (0.05)	ND (0.05)	ND (0.05)
Dibenzo[a,h]anthracene	0.05	0.4	0.4	ND (0.05)	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)	-	-	-	ND (0.05)	ND (0.05)	ND (0.05)	-	-	ND (0.05)	ND (0.05)	ND (0.05)
Fluoranthene	0.01	44	73	ND (0.01)	ND (0.01)	0.22	-	ND (0.01)	ND (0.01)	ND (0.01)	-	ND (0.01)	ND (0.01)	-	-	-	0.08	ND (0.01)	ND (0.01)	-	-	ND (0.01)	ND (0.01)	ND (0.01)
Fluorene	0.05	290	290	ND (0.05)	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)	-	-	-	ND (0.05)	ND (0.05)	ND (0.05)	-	-	ND (0.05)	ND (0.05)	ND (0.05)
Indeno[1,2,3-cd]pyrene	0.05	0.2	0.2	ND (0.05)	ND (0.05)	0.06	-	ND (0.05)	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)	-	-	-	ND (0.05)	ND (0.05)	ND (0.05)	-	-	ND (0.05)	ND (0.05)	ND (0.05)
1-Methylnaphthalene	0.05	1500	1500	ND (0.05)	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)	-	-	-	ND (0.05)	ND (0.05)	ND (0.05)	-	-	ND (0.05)	ND (0.05)	ND (0.05)
2-Methylnaphthalene	0.05	1500	1500	ND (0.05)	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)	-	-	-	ND (0.05)	ND (0.05)	ND (0.05)	-	-	ND (0.05)	ND (0.05)	ND (0.05)
Methylnaphthalene (1&2)	0.10	1500	1500	ND (0.10)	ND (0.10)	ND (0.10)	-	ND (0.10)	ND (0.10)	ND (0.10)	-	ND (0.10)	ND (0.10)	-	-	-	ND (0.10)	ND (0.10)	ND (0.10)	-	-	ND (0.10)	ND (0.10)	ND (0.10)
Naphthalene	0.05	7	1400	ND (0.05)	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)	-	-	-	ND (0.05)	ND (0.05)	ND (0.05)	-	-	ND (0.05)	ND (0.05)	ND (0.05)
Phenanthrene	0.05	380	380	ND (0.05)	ND (0.05)	0.19	-	ND (0.05)	ND (0.05)	ND (0.05)	-	ND (0.05)	ND (0.05)	-	-	-	ND (0.05)	ND (0.05)	ND (0.05)	-	-	ND (0.05)	ND (0.05)	ND (0.05)
Pyrene	0.01	5.7	5.7	ND (0.01)	ND (0.01)	0.19	-	ND (0.01)	ND (0.01)	ND (0.01)	-	ND (0.01)	ND (0.01)	-	-	-	0.07	ND (0.01)	ND (0.01)	-	-	ND (0.01)	ND (0.01)	ND (0.01)
PCBs																								
PCBs, total	0.05	0.2	0.2	ND (0.05)	-	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	-	-	-	ND (0.05)	-	-	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	-	-	ND (0.05)	ND (0.05)	ND (0.05)

Notes:
BOLD - Chloroform concentration greater than standard deemed not to exceed
ND - not detected above the MDL
MDL - Method Detection Limit

Post-Remediation Groundwater Sampling Program
Environmental Remediation
Part of 4 Booth Street - Ottawa

Parameter	MDL (ug/L)	MECP Standards		MW11-18-GW2	Dup-PR2	MW3-18-GW4	MW8-18-GW3	MW11-18-GW3	MW3-18-GW5	MW4-18-GW3	MW1-19-GW1	MW2-19-GW1	MW3-19-GW1	MW1-19-GW2	MW8-18-GW4	MW1-19-GW3	MW2-19-GW2	MW3-19-GW2	Trip Blank 1904068-04	Trip Blank 1904167-05	Trip Blank 1904395-03	Trip Blank 1905179-05	Trip Blank 1917683-10	Trip Blank 1923523-06
		Table 7 (ug/L)	Table 9 (ug/L)	3.10-4.62 m	1.70-4.75 m	2.36-5.41 m	3.38-6.43 m	4.01-7.06 m	2.36-5.41 m	1.88-4.93 m	2.03-5.08 m	3.10-4.62 m	2.36-5.41 m	2.03-5.08 m	3.38-6.43 m	2.03-5.08 m	3.10-4.62 m	2.36-5.41 m						
		Sample depth (mbgs)	Sample Date (m/d/y)	Apr.25, 2019	Apr.25, 2019	May 2, 2019	May 2, 2019	May 2, 2019	Jun.5, 2019	Jun.5, 2019	Jun.5, 2019	Jun.5, 2019	Jun.5, 2019	Jun.13, 2019	Jun.13, 2019	Jun.13, 2019	Jun.13, 2019	Jun.13, 2019	Jan.17, 2019	Jan.18, 2019	Jan.22, 2019	Jan.24, 2019	Jan.24, 2019	Jun.6, 2019
Anions																								
Chloride	1	1800000	1800000	-	-	-	-	-	-	-	-	-	-	-	1420000	578000	297000	23000	-	-	-	-	-	-
Metals																								
Mercury	0.1	0.1	0.29	ND (0.1)	-	-	-	-	-	-	ND (0.1)	ND (0.1)	ND (0.1)	-	-	-	-	-	-	-	-	-	-	-
Antimony	0.5	16000	16000	-	-	ND (0.5)	ND (0.5)	1.2	-	-	ND (0.5)	ND (0.5)	ND (0.5)	-	-	-	-	-	-	-	-	-	-	-
Arsenic	1	1500	1500	-	-	ND (1)	ND (1)	3	-	-	1	ND (1)	ND (1)	-	-	-	-	-	-	-	-	-	-	-
Barium	1	23000	23000	-	-	1150	379	35	-	-	419	107	115	-	-	-	-	-	-	-	-	-	-	-
Beryllium	0.5	53	53	-	-	ND (0.5)	ND (0.5)	ND (0.5)	-	-	ND (0.5)	ND (0.5)	ND (0.5)	-	-	-	-	-	-	-	-	-	-	-
Boron	10	36000	36000	-	-	240	55	45	-	-	165	64	63	-	-	-	-	-	-	-	-	-	-	-
Cadmium	0.1	2.1	2.1	-	-	ND (0.1)	ND (0.1)	ND (0.1)	-	-	ND (0.1)	ND (0.1)	ND (0.1)	-	-	-	-	-	-	-	-	-	-	-
Chromium	1	640	640	-	-	ND (1)	ND (1)	30	-	-	ND (1)	ND (1)	ND (1)	-	-	-	-	-	-	-	-	-	-	-
Chromium (VI)	10	110	110	ND (10)	-	-	-	-	-	-	ND (10)	ND (10)	ND (10)	-	-	-	-	-	-	-	-	-	-	-
Cobalt	0.5	52	52	-	-	ND (0.5)	2.2	0.9	-	-	ND (0.5)	ND (0.5)	ND (0.5)	-	-	-	-	-	-	-	-	-	-	-
Copper	0.5	69	69	-	-	4.0	2.2	27.3	-	-	5.1	ND (0.5)	ND (0.5)	-	-	-	4.0	-	-	-	-	-	-	-
Lead	0.1	20	20	-	-	0.2	ND (0.1)	0.4	-	-	0.2	ND (0.1)	0.2	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	0.5	7300	7300	-	-	1.8	1.5	28.3	-	-	40.2	15.0	66.3	-	-	-	-	-	-	-	-	-	-	-
Nickel	1	390	390	-	-	ND (1)	4	4	-	-	1	ND (1)	ND (1)	-	-	-	-	-	-	-	-	-	-	-
Selenium	1	50	50	-	-	ND (1)	ND (1)	2	-	-	1	ND (1)	ND (1)	-	-	-	-	-	-	-	-	-	-	-
Silver	0.1	1.2	1.2	-	-	ND (0.1)	ND (0.1)	ND (0.1)	-	-	ND (0.1)	ND (0.1)	ND (0.1)	-	-	-	-	-	-	-	-	-	-	-
Sodium	200	1800000	1800000	-	-	311000	1070000	186000	-	-	359000	239000	94600	-	-	-	-	-	-	-	-	-	-	-
Thallium	0.1	400	400	-	-	ND (0.1)	ND (0.1)	ND (0.1)	-	-	ND (0.1)	ND (0.1)	ND (0.1)	-	-	-	-	-	-	-	-	-	-	-
Uranium	0.1	330	330	-	-	0.9	1.2	ND (0.1)	-	-	3.9	0.7	3.4	-	-	-	-	-	-	-	-	-	-	-
Vanadium	0.5	200	200	-	-	1.0	ND (0.5)	30.9	-	-	1.0	1.9	1.1	-	-	-	-	-	-	-	-	-	-	-
Zinc	5	890	890	-	-	7	7	ND (5)	-	-	5	ND (5)	8	-	-	-	-	-	-	-	-	-	-	-
Volatiles																								
Acetone	5.0	100000	100000	ND (5.0)	-	-	-	-	-	-	ND (5.0)	ND (5.0)	ND (5.0)	-	-	-	-	-	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
Benzene	0.5	0.5	44	ND (0.5)	-	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromodichloromethane	0.5	67000	67000	ND (0.5)	-	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromoform	0.5	5	380	ND (0.5)	-	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Bromomethane	0.5	0.89	5.6	ND (0.5)	-	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Carbon Tetrachloride	0.2	0.2	0.79	ND (0.2)	-	-	-	-	-	-	ND (0.2)	ND (0.2)	ND (0.2)	-	-	-	-	-	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Chlorobenzene	0.5	140	500	ND (0.5)	-	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Chloroform	0.5	2	2.4	ND (0.5)	-	-	-	-	-	-	3.1	ND (0.5)	2.8	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Dibromochloromethane	0.5	65000	65000	ND (0.5)	-	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Dichlorodifluoromethane	1.0	3500	3500	ND (1.0)	-	-	-	-	-	-	ND (1.0)	ND (1.0)	ND (1.0)	-	-	-	-	-	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
1,2-Dichlorobenzene	0.5	150	4600	ND (0.5)	-	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,3-Dichlorobenzene	0.5	7600	7600	ND (0.5)	-	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,4-Dichlorobenzene	0.5	0.5	8	ND (0.5)	-	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1-Dichloroethane	0.5	11	320	ND (0.5)	-	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,2-Dichloroethane	0.5	0.5	1.6	ND (0.5)	-	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1-Dichloroethylene	0.5	0.5	1.6	ND (0.5)	-	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
cis-1,2-Dichloroethylene	0.5	1.6	1.6	ND (0.5)	-	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
trans-1,2-Dichloroethylene	0.5	1.6	1.6	ND (0.5)	-	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,2-Dichloropropane	0.5	0.58	16	ND (0.5)	-	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
cis-1,3-Dichloropropylene	0.5			ND (0.5)	-	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
trans-1,3-Dichloropropylene	0.5			ND (0.5)	-	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,3-Dichloropropene, total	0.5	0.5	5.2	ND (0.5)	-	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Ethylbenzene	0.5	54	1800	ND (0.5)	-	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Ethylene dibromide (dibromoethane, 1,2-)	0.2	0.2	0.25	ND (0.2)	-	-	-	-	-	-	ND (0.2)	ND (0.2)	ND (0.2)	-	-	-	-	-	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)	ND (0.2)
Hexane	1.0	5	51	ND (1.0)	-	-	-	-	-	-	ND (1.0)	ND (1.0)	ND (1.0)	-	-	-	-	-	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Methyl Ethyl Ketone (2- Butanone)	5.0	21000	470000	ND (5.0)	-	-	-	-	-	-	ND (5.0)	ND (5.0)	ND (5.0)	-	-	-	-	-	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
Methyl Isobutyl Ketone	5.0	5200	140000	ND (5.0)	-	-	-	-	-	-	ND (5.0)	ND (5.0)	ND (5.0)	-	-	-	-	-	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
Methyl tert-butyl ether	2.0	15	190	ND (2.0)	-	-	-	-	-	-	ND (2.0)	ND (2.0)	ND (2.0)	-	-	-	-	-	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)
Methylene Chloride	5.0	26	610	ND (5.0)	-	-	-	-	-	-	ND (5.0)	ND (5.0)	ND (5.0)	-	-	-	-	-	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)	ND (5.0)
Styrene	0.5	43	1300	ND (0.5)	-	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,1,2-Tetrachloroethane	0.5	1.1	3.3	ND (0.5)	-	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,2,2-Tetrachloroethane	0.5	0.5	3.2	ND (0.5)	-	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Tetrachloroethylene	0.5	0.5	1.6	ND (0.5)	-	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Toluene	0.5	320	14000	ND (0.5)	-	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,1-Trichloroethane	0.5	23	640	ND (0.5)	-	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
1,1,2-Trichloroethane	0.5	0.5	4.7	ND (0.5)	-	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Trichloroethylene	0.5	0.5	1.6	ND (0.5)	-	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	-	-	-	-	-	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Trichlorofluoromethane	1.0	2000	2000	ND (1.0)	-	-	-	-	-	-	ND (1.0)	ND (1.0)	ND (1.0)	-	-	-	-	-	ND (1.0)	ND (1.0)	ND (1			

Post-Remediation Groundwater Sampling Program
Environmental Remediation
Part of 4 Booth Street - Ottawa

Parameter	MDL (ug/L)	MECP Standards		MW11-18-GW2	Dup-PR2	MW3-18-GW4	MW8-18-GW3	MW11-18-GW3	MW3-18-GW5	MW4-18-GW3	MW1-19-GW1	MW2-19-GW1	MW3-19-GW1	MW1-19-GW2	MW8-18-GW4	MW1-19-GW3	MW2-19-GW2	MW3-19-GW2	Trip Blank 1904068-04	Trip Blank 1904167-05	Trip Blank 1904395-03	Trip Blank 1905179-05	Trip Blank 1917683-10	Trip Blank 1923523-06
		Table 7 (ug/L)	Table 9 (ug/L)	3.10-4.62 m	1.70-4.75 m	2.36-5.41 m	3.38-6.43 m	4.01-7.06 m	2.36-5.41 m	1.88-4.93 m	2.03-5.08 m	3.10-4.62 m	2.36-5.41 m	2.03-5.08 m	3.38-6.43 m	2.03-5.08 m	3.10-4.62 m	2.36-5.41 m						
Sample depth (mbgs)				3.10-4.62 m	1.70-4.75 m	2.36-5.41 m	3.38-6.43 m	4.01-7.06 m	2.36-5.41 m	1.88-4.93 m	2.03-5.08 m	3.10-4.62 m	2.36-5.41 m	2.03-5.08 m	3.38-6.43 m	2.03-5.08 m	3.10-4.62 m	2.36-5.41 m						
Sample Date (m/d/y)				Apr.25, 2019	Apr.25, 2019	May 2, 2019	May 2, 2019	May 2, 2019	Jun.5, 2019	Jun.5, 2019	Jun.5, 2019	Jun.5, 2019	Jun.5, 2019	Jun.13, 2019	Jun.13, 2019	Jun.13, 2019	Jun.13, 2019	Jun.13, 2019	Jan.17, 2019	Jan.18, 2019	Jan.22, 2019	Jan.24, 2019	Jan.24, 2019	Jun.6, 2019
Hydrocarbons																								
F1 PHCs (C6-C10)	25	420	420	ND (25)	-	-	-	-	-	-	ND (25)	ND (25)	ND (25)	-	-	-	-	-	-	-	-	-	-	-
F2 PHCs (C10-C16)	100	150	150	ND (100)	-	ND (100)	-	-	-	ND (100)	ND (100)	ND (100)	ND (100)	-	-	-	-	-	-	-	-	-	-	-
F3 PHCs (C16-C34)	100	500	500	ND (100)	-	ND (100)	-	-	-	ND (100)	ND (100)	ND (100)	ND (100)	-	-	-	-	-	-	-	-	-	-	-
F4 PHCs (C34-C50)	100	500	500	ND (100)	-	ND (100)	-	-	-	ND (100)	ND (100)	ND (100)	ND (100)	-	-	-	-	-	-	-	-	-	-	-
Semi-Volatiles																								
Acenaphthene	0.05	17	600	0.18	ND (0.05)	ND (0.05)	-	-	-	-	-	ND (0.05)	ND (0.05)	ND (0.05)	-	-	-	-	-	-	-	-	-	-
Acenaphthylene	0.05	1	1.4	0.06	ND (0.05)	ND (0.05)	-	-	-	-	-	ND (0.05)	ND (0.05)	ND (0.05)	-	-	-	-	-	-	-	-	-	-
Anthracene	0.01	1	1	0.10	ND (0.01)	ND (0.01)	-	-	-	-	-	ND (0.01)	ND (0.01)	ND (0.01)	-	-	-	-	-	-	-	-	-	-
Benzo[a]anthracene	0.01	1.8	1.8	0.09	ND (0.01)	ND (0.01)	-	-	-	-	-	ND (0.01)	ND (0.01)	ND (0.01)	-	-	-	-	-	-	-	-	-	-
Benzo[a]pyrene	0.01	0.81	0.81	0.06	ND (0.01)	ND (0.01)	-	-	-	-	-	ND (0.01)	ND (0.01)	ND (0.01)	-	-	-	-	-	-	-	-	-	-
Benzo[b]fluoranthene	0.05	0.75	0.75	0.09	ND (0.05)	ND (0.05)	-	-	-	-	-	ND (0.05)	ND (0.05)	ND (0.05)	-	-	-	-	-	-	-	-	-	-
Benzo[g,h,i]perylene	0.05	0.2	0.2	ND (0.05)	ND (0.05)	ND (0.05)	-	-	-	-	-	ND (0.05)	ND (0.05)	ND (0.05)	-	-	-	-	-	-	-	-	-	-
Benzo[k]fluoranthene	0.05	0.4	0.4	0.05	ND (0.05)	ND (0.05)	-	-	0.05	ND (0.05)	-	ND (0.05)	ND (0.05)	ND (0.05)	-	-	-	-	-	-	-	-	-	-
Chrysene	0.05	0.7	0.7	0.09	ND (0.05)	ND (0.05)	-	-	-	-	-	ND (0.05)	ND (0.05)	ND (0.05)	-	-	-	-	-	-	-	-	-	-
Dibenzo[a,h]anthracene	0.05	0.4	0.4	ND (0.05)	ND (0.05)	ND (0.05)	-	-	-	-	-	ND (0.05)	ND (0.05)	ND (0.05)	-	-	-	-	-	-	-	-	-	-
Fluoranthene	0.01	44	73	0.34	ND (0.01)	ND (0.01)	-	-	-	-	-	0.05	0.08	ND (0.01)	-	-	-	-	-	-	-	-	-	-
Fluorene	0.05	290	290	0.06	ND (0.05)	ND (0.05)	-	-	-	-	-	ND (0.05)	ND (0.05)	ND (0.05)	-	-	-	-	-	-	-	-	-	-
Indeno[1,2,3-cd]pyrene	0.05	0.2	0.2	ND (0.05)	ND (0.05)	ND (0.05)	-	-	-	-	-	ND (0.05)	ND (0.05)	ND (0.05)	-	-	-	-	-	-	-	-	-	-
1-Methylnaphthalene	0.05	1500	1500	ND (0.05)	ND (0.05)	ND (0.05)	-	-	-	-	-	ND (0.05)	ND (0.05)	ND (0.05)	-	-	-	-	-	-	-	-	-	-
2-Methylnaphthalene	0.05	1500	1500	ND (0.05)	ND (0.05)	ND (0.05)	-	-	-	-	-	ND (0.05)	ND (0.05)	ND (0.05)	-	-	-	-	-	-	-	-	-	-
Methylnaphthalene (1&2)	0.10	1500	1500	ND (0.10)	ND (0.10)	ND (0.10)	-	-	-	-	-	ND (0.10)	ND (0.10)	ND (0.10)	-	-	-	-	-	-	-	-	-	-
Naphthalene	0.05	7	1400	ND (0.05)	ND (0.05)	ND (0.05)	-	-	-	-	-	ND (0.05)	ND (0.05)	ND (0.05)	-	-	-	-	-	-	-	-	-	-
Phenanthrene	0.05	380	380	0.15	ND (0.05)	ND (0.05)	-	-	-	-	-	ND (0.05)	ND (0.05)	ND (0.05)	-	-	-	-	-	-	-	-	-	-
Pyrene	0.01	5.7	5.7	0.27	ND (0.01)	ND (0.01)	-	-	-	-	-	0.04	0.06	ND (0.01)	-	-	-	-	-	-	-	-	-	-
PCBs																								
PCBs, total	0.05	0.2	0.2	ND (0.05)	-	-	-	-	ND (0.05)	-	-	ND (0.05)	ND (0.05)	ND (0.05)	-	-	-	-	-	-	-	-	-	-

Notes:
BOLD - Chloroform concentration greater than standard deemed not to exr
ND - not detected above the MDL
MDL - Method Detection Limit

APPENDIX 2

SOIL PROFILE AND TEST DATA SHEETS

SOIL PROFILE AND TEST DATA

FILE NO. **PE3584**

HOLE NO. **MW1-18**

REMARKS

BORINGS BY Portable Drill

DATE 2018 December 17

[illegible]

SOIL PROFILE AND TEST DATA

Phase II - Environmental Site Assessment
Chaudiere Island & Albert Island
Ottawa, Ontario

DATUM Geodetic

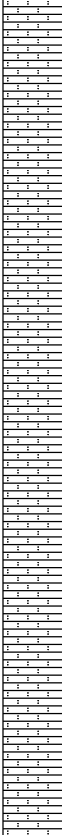
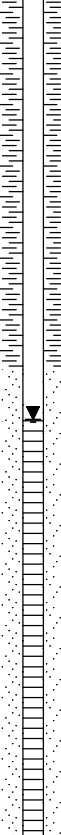
REMARKS

BORINGS BY CME-55 Low Clearance Drill

DATE 2019 May 21

FILE NO. **PE3584**

HOLE NO. **MW1-19**

SOIL DESCRIPTION	STRATA PLOT	SAMPLE				DEPTH (m)	ELEV. (m)	Photo Ionization Detector				Monitoring Well Construction	
		TYPE	NUMBER	RECOVERY %	N VALUE or RQD			Lower Explosive Limit %					
GROUND SURFACE						20	40	60	80				
FILL: Crushed stone						0	52.24						
						1	51.24						
						2	50.24						
BEDROCK: Grey limestone						3	49.24						
						4	48.24						
						5	47.24						
						6	46.24						
						7	45.24						
						8	44.24						
End of Monitoring Well (GWL @ 5.25m - June 5, 2019)													
							100	200	300	400	500	RKI Eagle Rdg. (ppm)	
							▲ Full Gas Resp. △ Methane Elim.						

SOIL PROFILE AND TEST DATA

**Phase II - Environmental Site Assessment
Chaudiere Island & Albert Island
Ottawa, Ontario**

DATUM	Geodetic
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REMARKS

BORINGS BY Portable Drill

DATE 2018 December 18

FILE NO.

PE3584

HOLE NO.

MW2-18[illegible]

SOIL PROFILE AND TEST DATA

Phase II - Environmental Site Assessment
Chaudiere Island & Albert Island
Ottawa, Ontario

DATUM Geodetic

REMARKS

BORINGS BY CME-55 Low Clearance Drill

DATE 2019 May 21

FILE NO.

PE3584

HOLE NO.

MW2-19

SOIL DESCRIPTION	STRATA PLOT	SAMPLE				DEPTH (m)	ELEV. (m)	Photo Ionization Detector				Monitoring Well Construction		
		TYPE	NUMBER	RECOVERY %	N VALUE or RQD			● Volatile Organic Rdg. (ppm)						
○ Lower Explosive Limit %						20	40	60	80					
GROUND SURFACE						0	52.86							
FILL: Crushed stone						1	51.86							
						2	50.86							
						3	49.86							
						4	48.86							
						5	47.86							
						6	46.86							
						7	45.86							
						8	44.86							
End of Monitoring Well (GWL @ 5.45m - June 5, 2019)														

SOIL PROFILE AND TEST DATA

**Phase II - Environmental Site Assessment
Chaudiere Island & Albert Island
Ottawa, Ontario**

DATUM	Geodetic
-------	----------

FILE NO. **PE3584**

REMARKS

HOLE NO. **MW3-18**

BORINGS BY Portable Drill

DATE 2018 December 20

[illegible]

SOIL PROFILE AND TEST DATA

Phase II - Environmental Site Assessment
Chaudiere Island & Albert Island
Ottawa, Ontario

DATUM Geodetic

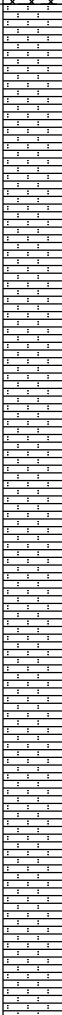
REMARKS

BORINGS BY CME-55 Low Clearance Drill

DATE 2019 May 21

FILE NO. **PE3584**

HOLE NO. **MW3-19**

SOIL DESCRIPTION	STRATA PLOT	SAMPLE				DEPTH (m)	ELEV. (m)	Photo Ionization Detector				Monitoring Well Construction		
		TYPE	NUMBER	RECOVERY %	N VALUE or RQD			● Volatile Organic Rdg. (ppm)						
○ Lower Explosive Limit %						20	40	60	80					
GROUND SURFACE						0	53.05							
FILL: Crushed stone						1	52.05							
						1.50								
BEDROCK: Grey limestone						2	51.05							
						3	50.05							
						4	49.05							
						5	48.05							
						6	47.05							
						7	46.05							
						8	45.05							
						8.99								
End of Monitoring Well														
(GWL @ 5.63m - June 5, 2019)														
								100	200	300	400	500		
								RKI Eagle Rdg. (ppm)						
								▲ Full Gas Resp. △ Methane Elim.						

SOIL PROFILE AND TEST DATA

**Phase II - Environmental Site Assessment
Chaudiere Island & Albert Island
Ottawa, Ontario**

DATUM Geodetic

REMARKS

BORINGS BY Portable Drill

DATE 2018 December 20

FILE NO.

PE3584

HOLE NO.

MW4-18[illegible]

SOIL PROFILE AND TEST DATA

**Phase II - Environmental Site Assessment
Chaudiere Island & Albert Island
Ottawa, Ontario**

DATUM Geodetic

REMARKS

BORINGS BY Portable Drill

DATE 2018 December 20

FILE NO.

PE3584

HOLE NO.

MW5-18[illegible]

SOIL PROFILE AND TEST DATA

**Phase II - Environmental Site Assessment
Chaudiere Island & Albert Island
Ottawa, Ontario**

DATUM	Geodetic
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FILE NO. **PE3584**

REMARKS

HOLE NO. **MW6-18**

BORINGS BY Portable Drill

DATE 2019 January 9

[illegible]

SOIL PROFILE AND TEST DATA

Phase II - Environmental Site Assessment
Chaudiere Island & Albert Island
Ottawa, Ontario

DATUM Geodetic

REMARKS

BORINGS BY Portable Drill

DATE 2018 December 18

FILE NO. **PE3584**

HOLE NO. **MW7-18**

SOIL DESCRIPTION	STRATA PLOT	SAMPLE				DEPTH (m)	ELEV. (m)	Photo Ionization Detector				Monitoring Well Construction	
		TYPE	NUMBER	RECOVERY %	N VALUE or RQD			● Volatile Organic Rdg. (ppm)					
								○ Lower Explosive Limit %					
GROUND SURFACE								20	40	60	80		
OVERBURDEN						0	52.52						
						1	51.52						
						2	50.52						
	2.49												
		RC	1	100	11	3	49.52						
		RC	2	77	53	4	48.52						
BEDROCK: Grey limestone		RC	3	100	60	5	47.52						
		RC	4	100	96	6	46.52						
		RC	5	100	77	7	45.52						
	8.00												
End of Monitoring Well (GWL @ 5.01m - Feb. 4, 2019)						8	44.52						
								100	200	300	400	500	
								RKI Eagle Rdg. (ppm)					
								▲ Full Gas Resp. △ Methane Elim.					

SOIL PROFILE AND TEST DATA

Phase II - Environmental Site Assessment
Chaudiere Island & Albert Island
Ottawa, Ontario

DATUM Geodetic

REMARKS

BORINGS BY Portable Drill

DATE 2018 December 19

FILE NO. **PE3584**

HOLE NO. **MW8-18**

SOIL DESCRIPTION	STRATA PLOT	SAMPLE				DEPTH (m)	ELEV. (m)	Photo Ionization Detector				Monitoring Well Construction
		TYPE	NUMBER	RECOVERY %	N VALUE or RQD			● Volatile Organic Rdg. (ppm)	○ Lower Explosive Limit %			
GROUND SURFACE								20	40	60	80	
OVERBURDEN						0	52.69					
						1	51.69					
	2.18					2	50.69					
BEDROCK: Grey limestone		RC	1	100	46	3	49.69					
		RC	2	93	78	4	48.69					
		RC	3	100	99	5	47.69					
		RC	4	100	100	6	46.69					
End of Monitoring Well (GWL @ 2.33m - April 25, 2019)	6.43											

SOIL PROFILE AND TEST DATA

Phase II - Environmental Site Assessment
Chaudiere Island & Albert Island
Ottawa, Ontario

DATUM Geodetic

REMARKS

BORINGS BY Portable Drill

DATE 2018 December 19

FILE NO. **PE3584**

HOLE NO. **MW9-18**

SOIL DESCRIPTION	STRATA PLOT	SAMPLE				DEPTH (m)	ELEV. (m)	Photo Ionization Detector				Monitoring Well Construction
		TYPE	NUMBER	RECOVERY %	N VALUE or RQD			● Volatile Organic Rdg. (ppm)	○ Lower Explosive Limit %			
GROUND SURFACE								20	40	60	80	
OVERBURDEN						0	51.88					
	1.04					1	50.88					
		RC	1	100	47	2	49.88					
						3	48.88					
BEDROCK: Grey limestone		RC	2	100	53	4	47.88					
						5	46.88					
	5.61											
End of Monitoring Well (GWL @ 4.38m - Jan. 22, 2019)												

SOIL PROFILE AND TEST DATA

**Phase II - Environmental Site Assessment
Chaudiere Island & Albert Island
Ottawa, Ontario**

DATUM Geodetic

REMARKS

BORINGS BY Portable Drill

DATE 2018 December 19

FILE NO.

PE3584

HOLE NO.

MW10-18[illegible]

SOIL PROFILE AND TEST DATA

Phase II - Environmental Site Assessment
Chaudiere Island & Albert Island
Ottawa, Ontario

DATUM Geodetic

REMARKS

BORINGS BY Portable Drill

DATE 2018 December 20

FILE NO. **PE3584**

HOLE NO. **MW11-18**

SOIL DESCRIPTION	STRATA PLOT	SAMPLE				DEPTH (m)	ELEV. (m)	Photo Ionization Detector				Monitoring Well Construction
		TYPE	NUMBER	RECOVERY %	N VALUE or RQD			● Volatile Organic Rdg. (ppm)	○ Lower Explosive Limit %			
GROUND SURFACE								20	40	60	80	
OVERBURDEN						0	51.87					
						1	50.87					
						2	49.87					
	3.10					3	48.87					
BEDROCK: Grey limestone		RC	1	100	75	4	47.87					
		RC	2	95	82	5	46.87					
		RC	3	100	88	6	45.87					
	7.06					7	44.87					
End of Monitoring Well (GWL @ 2.96m - April 25, 2019)												

APPENDIX 3

LABORATORY CERTIFICATES OF ANALYSIS

Certificate of Analysis

Paterson Group Consulting Engineers

154 Colonnade Road South
Nepean, ON K2E 7J5
Attn: Lauren Kratz

Client PO: 25777
Project: PE3584
Custody: 119372

Report Date: 24-Jan-2019
Order Date: 21-Jan-2019

Order #: 1904068

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

Paracel ID	Client ID
1904068-01	MW1-18-GW1
1904068-02	MW2-18-GW1
1904068-03	MW11-18-GW1
1904068-04	Trip Blank

Approved By:



Mark Foto, M.Sc.
Lab Supervisor

Certificate of Analysis
Client: Paterson Group Consulting Engineers
Client PO: 25777

Report Date: 24-Jan-2019
Order Date: 21-Jan-2019
Project Description: PE3584

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Chromium, hexavalent - water	MOE E3056 - colourimetric	23-Jan-19	23-Jan-19
Mercury by CVAA	EPA 245.2 - Cold Vapour AA	23-Jan-19	23-Jan-19
Metals, ICP-MS	EPA 200.8 - ICP-MS	21-Jan-19	22-Jan-19
PCBs, total	EPA 608 - GC-ECD	23-Jan-19	23-Jan-19
PHC F1	CWS Tier 1 - P&T GC-FID	22-Jan-19	22-Jan-19
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	22-Jan-19	23-Jan-19
REG 153: PAHs by GC-MS	EPA 625 - GC-MS, extraction	23-Jan-19	23-Jan-19
REG 153: VOCs by P&T GC/MS	EPA 624 - P&T GC-MS	22-Jan-19	22-Jan-19

Certificate of Analysis
 Client: Paterson Group Consulting Engineers
 Client PO: 25777

Report Date: 24-Jan-2019
 Order Date: 21-Jan-2019
 Project Description: PE3584

	Client ID:	MW1-18-GW1	MW2-18-GW1	MW11-18-GW1	Trip Blank
	Sample Date:	01/18/2019 12:00	01/18/2019 12:00	01/18/2019 12:00	01/17/2019 09:00
	Sample ID:	1904068-01	1904068-02	1904068-03	1904068-04
	MDL/Units	Water	Water	Water	Water

Metals

Mercury	0.1 ug/L	<0.1	-	<0.1	-
Antimony	0.5 ug/L	<0.5	-	<0.5	-
Arsenic	1 ug/L	<1	-	5	-
Barium	1 ug/L	50	-	74	-
Beryllium	0.5 ug/L	<0.5	-	<0.5	-
Boron	10 ug/L	27	-	65	-
Cadmium	0.1 ug/L	<0.1	-	<0.1	-
Chromium	1 ug/L	<1	-	<1	-
Chromium (VI)	10 ug/L	<10	-	<10	-
Cobalt	0.5 ug/L	<0.5	-	<0.5	-
Copper	0.5 ug/L	<0.5	-	2.6	-
Lead	0.1 ug/L	<0.1	-	0.2	-
Molybdenum	0.5 ug/L	0.8	-	44.4	-
Nickel	1 ug/L	<1	-	5	-
Selenium	1 ug/L	<1	-	<1	-
Silver	0.1 ug/L	<0.1	-	<0.1	-
Sodium	200 ug/L	32300	-	163000	-
Thallium	0.1 ug/L	<0.1	-	<0.1	-
Uranium	0.1 ug/L	0.3	-	1.4	-
Vanadium	0.5 ug/L	0.8	-	2.3	-
Zinc	5 ug/L	<5	-	<5	-

Volatiles

Acetone	5.0 ug/L	<5.0	-	<5.0	<5.0
Benzene	0.5 ug/L	<0.5	-	<0.5	<0.5
Bromodichloromethane	0.5 ug/L	<0.5	-	<0.5	<0.5
Bromoform	0.5 ug/L	<0.5	-	<0.5	<0.5
Bromomethane	0.5 ug/L	<0.5	-	<0.5	<0.5
Carbon Tetrachloride	0.2 ug/L	<0.2	-	<0.2	<0.2
Chlorobenzene	0.5 ug/L	<0.5	-	<0.5	<0.5
Chloroform	0.5 ug/L	<0.5	-	<0.5	<0.5
Dibromochloromethane	0.5 ug/L	<0.5	-	<0.5	<0.5
Dichlorodifluoromethane	1.0 ug/L	<1.0	-	<1.0	<1.0
1,2-Dichlorobenzene	0.5 ug/L	<0.5	-	<0.5	<0.5
1,3-Dichlorobenzene	0.5 ug/L	<0.5	-	<0.5	<0.5
1,4-Dichlorobenzene	0.5 ug/L	<0.5	-	<0.5	<0.5

Certificate of Analysis
 Client: Paterson Group Consulting Engineers
 Client PO: 25777

Report Date: 24-Jan-2019
 Order Date: 21-Jan-2019
 Project Description: PE3584

	Client ID: Sample Date: Sample ID:	MW1-18-GW1 01/18/2019 12:00 1904068-01 Water	MW2-18-GW1 01/18/2019 12:00 1904068-02 Water	MW11-18-GW1 01/18/2019 12:00 1904068-03 Water	Trip Blank 01/17/2019 09:00 1904068-04 Water
	MDL/Units				
1,1-Dichloroethane	0.5 ug/L	<0.5	-	<0.5	<0.5
1,2-Dichloroethane	0.5 ug/L	<0.5	-	<0.5	<0.5
1,1-Dichloroethylene	0.5 ug/L	<0.5	-	<0.5	<0.5
cis-1,2-Dichloroethylene	0.5 ug/L	<0.5	-	<0.5	<0.5
trans-1,2-Dichloroethylene	0.5 ug/L	<0.5	-	<0.5	<0.5
1,2-Dichloropropane	0.5 ug/L	<0.5	-	<0.5	<0.5
cis-1,3-Dichloropropylene	0.5 ug/L	<0.5	-	<0.5	<0.5
trans-1,3-Dichloropropylene	0.5 ug/L	<0.5	-	<0.5	<0.5
1,3-Dichloropropene, total	0.5 ug/L	<0.5	-	<0.5	<0.5
Ethylbenzene	0.5 ug/L	<0.5	-	<0.5	<0.5
Ethylene dibromide (dibromoethane)	0.2 ug/L	<0.2	-	<0.2	<0.2
Hexane	1.0 ug/L	<1.0	-	<1.0	<1.0
Methyl Ethyl Ketone (2-Butanone)	5.0 ug/L	<5.0	-	<5.0	<5.0
Methyl Isobutyl Ketone	5.0 ug/L	<5.0	-	<5.0	<5.0
Methyl tert-butyl ether	2.0 ug/L	<2.0	-	<2.0	<2.0
Methylene Chloride	5.0 ug/L	<5.0	-	<5.0	<5.0
Styrene	0.5 ug/L	<0.5	-	<0.5	<0.5
1,1,1,2-Tetrachloroethane	0.5 ug/L	<0.5	-	<0.5	<0.5
1,1,2,2-Tetrachloroethane	0.5 ug/L	<0.5	-	<0.5	<0.5
Tetrachloroethylene	0.5 ug/L	<0.5	-	<0.5	<0.5
Toluene	0.5 ug/L	<0.5	-	<0.5	<0.5
1,1,1-Trichloroethane	0.5 ug/L	<0.5	-	<0.5	<0.5
1,1,2-Trichloroethane	0.5 ug/L	<0.5	-	<0.5	<0.5
Trichloroethylene	0.5 ug/L	<0.5	-	<0.5	<0.5
Trichlorofluoromethane	1.0 ug/L	<1.0	-	<1.0	<1.0
Vinyl chloride	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
Xylenes, total	0.5 ug/L	<0.5	-	<0.5	<0.5
4-Bromofluorobenzene	Surrogate	110%	-	108%	107%
Dibromofluoromethane	Surrogate	97.1%	-	92.2%	86.8%
Toluene-d8	Surrogate	112%	-	109%	105%

Hydrocarbons

F1 PHCs (C6-C10)	25 ug/L	<25	-	<25	-
F2 PHCs (C10-C16)	100 ug/L	<100	-	<100	-
F3 PHCs (C16-C34)	100 ug/L	<100	-	<100	-

Certificate of Analysis
 Client: Paterson Group Consulting Engineers
 Client PO: 25777

Report Date: 24-Jan-2019
 Order Date: 21-Jan-2019
 Project Description: PE3584

	Client ID: Sample Date: Sample ID:	MW1-18-GW1 01/18/2019 12:00 1904068-01 Water	MW2-18-GW1 01/18/2019 12:00 1904068-02 Water	MW11-18-GW1 01/18/2019 12:00 1904068-03 Water	Trip Blank 01/17/2019 09:00 1904068-04 Water
	MDL/Units				
F4 PHCs (C34-C50)	100 ug/L	<100	-	<100	-

Semi-Volatiles

Acenaphthene	0.05 ug/L	<0.05	<0.05	<0.05	-
Acenaphthylene	0.05 ug/L	<0.05	<0.05	<0.05	-
Anthracene	0.01 ug/L	<0.01	<0.01	0.12	-
Benzo [a] anthracene	0.01 ug/L	<0.01	<0.01	0.11	-
Benzo [a] pyrene	0.01 ug/L	<0.01	<0.01	0.11	-
Benzo [b] fluoranthene	0.05 ug/L	<0.05	<0.05	0.10	-
Benzo [g,h,i] perylene	0.05 ug/L	<0.05	<0.05	0.06	-
Benzo [k] fluoranthene	0.05 ug/L	<0.05	<0.05	0.05	-
Chrysene	0.05 ug/L	<0.05	<0.05	0.10	-
Dibenzo [a,h] anthracene	0.05 ug/L	<0.05	<0.05	<0.05	-
Fluoranthene	0.01 ug/L	<0.01	<0.01	0.22	-
Fluorene	0.05 ug/L	<0.05	<0.05	<0.05	-
Indeno [1,2,3-cd] pyrene	0.05 ug/L	<0.05	<0.05	0.06	-
1-Methylnaphthalene	0.05 ug/L	<0.05	<0.05	<0.05	-
2-Methylnaphthalene	0.05 ug/L	<0.05	<0.05	<0.05	-
Methylnaphthalene (1&2)	0.10 ug/L	<0.10	<0.10	<0.10	-
Naphthalene	0.05 ug/L	<0.05	<0.05	<0.05	-
Phenanthrene	0.05 ug/L	<0.05	<0.05	0.19	-
Pyrene	0.01 ug/L	<0.01	<0.01	0.19	-
2-Fluorobiphenyl	Surrogate	88.8%	80.0%	67.9%	-
Terphenyl-d14	Surrogate	102%	101%	75.9%	-

PCBs

PCBs, total	0.05 ug/L	<0.05	-	<0.05	-
Decachlorobiphenyl	Surrogate	76.1%	-	96.9%	-

Certificate of Analysis

Report Date: 24-Jan-2019

Client: Paterson Group Consulting Engineers

Order Date: 21-Jan-2019

Client PO: 25777

Project Description: PE3584

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L						
F2 PHCs (C10-C16)	ND	100	ug/L						
F3 PHCs (C16-C34)	ND	100	ug/L						
F4 PHCs (C34-C50)	ND	100	ug/L						
Metals									
Mercury	ND	0.1	ug/L						
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 (VI)	ND	10	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	0.432		ug/L		86.3	60-140			
Semi-Volatiles									
Acenaphthene	ND	0.05	ug/L						
Acenaphthylene	ND	0.05	ug/L						
Anthracene	ND	0.01	ug/L						
Benzo [a] anthracene	ND	0.01	ug/L						
Benzo [a] pyrene	ND	0.01	ug/L						
Benzo [b] fluoranthene	ND	0.05	ug/L						
Benzo [g,h,i] perylene	ND	0.05	ug/L						
Benzo [k] fluoranthene	ND	0.05	ug/L						
Chrysene	ND	0.05	ug/L						
Dibenzo [a,h] anthracene	ND	0.05	ug/L						
Fluoranthene	ND	0.01	ug/L						
Fluorene	ND	0.05	ug/L						
Indeno [1,2,3-cd] pyrene	ND	0.05	ug/L						
1-Methylnaphthalene	ND	0.05	ug/L						
2-Methylnaphthalene	ND	0.05	ug/L						
Methylnaphthalene (1&2)	ND	0.10	ug/L						
Naphthalene	ND	0.05	ug/L						
Phenanthrene	ND	0.05	ug/L						
Pyrene	ND	0.01	ug/L						
Surrogate: 2-Fluorobiphenyl	16.4		ug/L		82.1	50-140			
Surrogate: Terphenyl-d14	19.0		ug/L		95.0	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						

Certificate of Analysis

Report Date: 24-Jan-2019

Client: Paterson Group Consulting Engineers

Order Date: 21-Jan-2019

Client PO: 25777

Project Description: PE3584

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
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)	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						
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	83.4		ug/L		104	50-140			
Surrogate: Dibromofluoromethane	94.7		ug/L		118	50-140			
Surrogate: Toluene-d8	86.4		ug/L		108	50-140			

Certificate of Analysis
 Client: Paterson Group Consulting Engineers
 Client PO: 25777

Report Date: 24-Jan-2019
 Order Date: 21-Jan-2019
 Project Description: PE3584

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				30	
Metals									
Mercury	ND	0.1	ug/L	ND			0.0	20	
Antimony	ND	0.5	ug/L	ND			0.0	20	
Arsenic	ND	1	ug/L	ND			0.0	20	
Barium	22.2	1	ug/L	21.1			5.0	20	
Beryllium	ND	0.5	ug/L	ND			0.0	20	
Boron	19	10	ug/L	19			0.0	20	
Cadmium	ND	0.1	ug/L	ND			0.0	20	
Chromium (VI)	ND	10	ug/L	ND				20	
Chromium	ND	1	ug/L	ND			0.0	20	
Cobalt	ND	0.5	ug/L	ND			0.0	20	
Copper	0.75	0.5	ug/L	0.72			3.2	20	
Lead	ND	0.1	ug/L	ND			0.0	20	
Molybdenum	1.07	0.5	ug/L	1.04			3.7	20	
Nickel	ND	1	ug/L	ND			0.0	20	
Selenium	ND	1	ug/L	ND			0.0	20	
Silver	ND	0.1	ug/L	ND			0.0	20	
Sodium	15200	200	ug/L	14700			3.6	20	
Thallium	ND	0.1	ug/L	ND			0.0	20	
Uranium	ND	0.1	ug/L	ND			0.0	20	
Vanadium	ND	0.5	ug/L	ND			0.0	20	
Zinc	6	5	ug/L	6			2.5	20	
Volatiles									
Acetone	ND	5.0	ug/L	ND				30	
Benzene	ND	0.5	ug/L	ND				30	
Bromodichloromethane	ND	0.5	ug/L	ND				30	
Bromoform	ND	0.5	ug/L	ND				30	
Bromomethane	ND	0.5	ug/L	ND				30	
Carbon Tetrachloride	ND	0.2	ug/L	ND				30	
Chlorobenzene	ND	0.5	ug/L	ND				30	
Chloroform	ND	0.5	ug/L	ND				30	
Dibromochloromethane	ND	0.5	ug/L	ND				30	
Dichlorodifluoromethane	ND	1.0	ug/L	ND				30	
1,2-Dichlorobenzene	ND	0.5	ug/L	ND				30	
1,3-Dichlorobenzene	ND	0.5	ug/L	ND				30	
1,4-Dichlorobenzene	ND	0.5	ug/L	ND				30	
1,1-Dichloroethane	ND	0.5	ug/L	ND				30	
1,2-Dichloroethane	ND	0.5	ug/L	ND				30	
1,1-Dichloroethylene	ND	0.5	ug/L	ND				30	
cis-1,2-Dichloroethylene	ND	0.5	ug/L	ND				30	
trans-1,2-Dichloroethylene	ND	0.5	ug/L	ND				30	
1,2-Dichloropropane	ND	0.5	ug/L	ND				30	
cis-1,3-Dichloropropylene	ND	0.5	ug/L	ND				30	
trans-1,3-Dichloropropylene	ND	0.5	ug/L	ND				30	
Ethylbenzene	ND	0.5	ug/L	ND				30	
Ethylene dibromide (dibromoethane)	ND	0.2	ug/L	ND				30	
Hexane	ND	1.0	ug/L	ND				30	
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L	ND				30	
Methyl Isobutyl Ketone	ND	5.0	ug/L	ND				30	
Methyl tert-butyl ether	ND	2.0	ug/L	ND				30	
Methylene Chloride	ND	5.0	ug/L	ND				30	
Styrene	ND	0.5	ug/L	ND				30	
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L	ND				30	
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L	ND				30	
Tetrachloroethylene	ND	0.5	ug/L	ND				30	
Toluene	ND	0.5	ug/L	ND				30	

Certificate of Analysis
 Client: Paterson Group Consulting Engineers
 Client PO: 25777

Report Date: 24-Jan-2019
 Order Date: 21-Jan-2019
 Project Description: PE3584

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	ND	0.5	ug/L	ND				30	
1,1,2-Trichloroethane	ND	0.5	ug/L	ND				30	
Trichloroethylene	7.58	0.5	ug/L	6.87			9.8	30	
Trichlorofluoromethane	ND	1.0	ug/L	ND				30	
Vinyl chloride	ND	0.5	ug/L	ND				30	
m,p-Xylenes	ND	0.5	ug/L	ND				30	
o-Xylene	ND	0.5	ug/L	ND				30	
Surrogate: 4-Bromofluorobenzene	85.6		ug/L		107	50-140			
Surrogate: Dibromofluoromethane	87.6		ug/L		109	50-140			
Surrogate: Toluene-d8	85.6		ug/L		107	50-140			

Certificate of Analysis
 Client: Paterson Group Consulting Engineers
 Client PO: 25777

Report Date: 24-Jan-2019
 Order Date: 21-Jan-2019
 Project Description: PE3584

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	1680	25	ug/L		84.1	68-117			
F2 PHCs (C10-C16)	1890	100	ug/L		118	60-140			
F3 PHCs (C16-C34)	4190	100	ug/L		107	60-140			
F4 PHCs (C34-C50)	1970	100	ug/L		79.3	60-140			
Metals									
Mercury	3.21	0.1	ug/L	ND	107	70-130			
Antimony	49.5		ug/L	ND	98.7	80-120			
Arsenic	49.7		ug/L	ND	98.8	80-120			
Barium	70.5		ug/L	21.1	98.8	80-120			
Beryllium	49.5		ug/L	ND	98.9	80-120			
Boron	64		ug/L	19	89.1	80-120			
Cadmium	49.5		ug/L	ND	99.0	80-120			
Chromium (VI)	187	10	ug/L	ND	93.5	70-130			
Chromium	52.2		ug/L	ND	104	80-120			
Cobalt	49.2		ug/L	ND	98.5	80-120			
Copper	48.5		ug/L	0.72	95.5	80-120			
Lead	50.1		ug/L	ND	100	80-120			
Molybdenum	45.9		ug/L	1.04	89.7	80-120			
Nickel	48.8		ug/L	ND	96.7	80-120			
Selenium	47.3		ug/L	ND	94.3	80-120			
Silver	52.2		ug/L	ND	104	80-120			
Sodium	24500		ug/L	14700	98.1	80-120			
Thallium	45.5		ug/L	ND	91.0	80-120			
Uranium	49.8		ug/L	ND	99.7	80-120			
Vanadium	52.1		ug/L	ND	104	80-120			
Zinc	51		ug/L	6	90.1	80-120			
PCBs									
PCBs, total	0.970	0.05	ug/L		97.0	60-140			
Surrogate: Decachlorobiphenyl	0.350		ug/L		69.9	60-140			
Semi-Volatiles									
Acenaphthene	5.03	0.05	ug/L		101	50-140			
Acenaphthylene	4.65	0.05	ug/L		93.0	50-140			
Anthracene	4.51	0.01	ug/L		90.2	50-140			
Benzo [a] anthracene	4.67	0.01	ug/L		93.4	50-140			
Benzo [a] pyrene	5.43	0.01	ug/L		109	50-140			
Benzo [b] fluoranthene	5.61	0.05	ug/L		112	50-140			
Benzo [g,h,i] perylene	6.12	0.05	ug/L		122	50-140			
Benzo [k] fluoranthene	5.20	0.05	ug/L		104	50-140			
Chrysene	5.12	0.05	ug/L		102	50-140			
Dibenzo [a,h] anthracene	5.65	0.05	ug/L		113	50-140			
Fluoranthene	4.70	0.01	ug/L		94.0	50-140			
Fluorene	4.49	0.05	ug/L		89.8	50-140			
Indeno [1,2,3-cd] pyrene	5.71	0.05	ug/L		114	50-140			
1-Methylnaphthalene	3.89	0.05	ug/L		77.8	50-140			
2-Methylnaphthalene	4.49	0.05	ug/L		89.8	50-140			
Naphthalene	4.68	0.05	ug/L		93.6	50-140			
Phenanthrene	4.30	0.05	ug/L		86.0	50-140			
Pyrene	4.61	0.01	ug/L		92.2	50-140			
Volatiles									
Acetone	66.6	5.0	ug/L		66.6	50-140			

Certificate of Analysis
 Client: Paterson Group Consulting Engineers
 Client PO: 25777

Report Date: 24-Jan-2019
 Order Date: 21-Jan-2019
 Project Description: PE3584

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Benzene	36.9	0.5	ug/L		92.4	60-130			
Bromodichloromethane	34.6	0.5	ug/L		86.4	60-130			
Bromoform	28.9	0.5	ug/L		72.2	60-130			
Bromomethane	27.3	0.5	ug/L		68.2	50-140			
Carbon Tetrachloride	33.4	0.2	ug/L		83.4	60-130			
Chlorobenzene	29.9	0.5	ug/L		74.6	60-130			
Chloroform	32.4	0.5	ug/L		81.1	60-130			
Dibromochloromethane	32.0	0.5	ug/L		80.0	60-130			
Dichlorodifluoromethane	32.3	1.0	ug/L		80.8	50-140			
1,2-Dichlorobenzene	31.8	0.5	ug/L		79.6	60-130			
1,3-Dichlorobenzene	32.6	0.5	ug/L		81.6	60-130			
1,4-Dichlorobenzene	30.7	0.5	ug/L		76.8	60-130			
1,1-Dichloroethane	32.5	0.5	ug/L		81.3	60-130			
1,2-Dichloroethane	32.4	0.5	ug/L		81.0	60-130			
1,1-Dichloroethylene	30.4	0.5	ug/L		76.0	60-130			
cis-1,2-Dichloroethylene	33.5	0.5	ug/L		83.7	60-130			
trans-1,2-Dichloroethylene	31.3	0.5	ug/L		78.2	60-130			
1,2-Dichloropropane	35.5	0.5	ug/L		88.8	60-130			
cis-1,3-Dichloropropylene	35.8	0.5	ug/L		89.6	60-130			
trans-1,3-Dichloropropylene	33.9	0.5	ug/L		84.8	60-130			
Ethylbenzene	38.0	0.5	ug/L		95.0	60-130			
Ethylene dibromide (dibromoethane)	29.8	0.2	ug/L		74.6	60-130			
Hexane	39.3	1.0	ug/L		98.3	60-130			
Methyl Ethyl Ketone (2-Butanone)	79.5	5.0	ug/L		79.5	50-140			
Methyl Isobutyl Ketone	82.4	5.0	ug/L		82.4	50-140			
Methyl tert-butyl ether	80.2	2.0	ug/L		80.2	50-140			
Methylene Chloride	30.4	5.0	ug/L		76.1	60-130			
Styrene	37.1	0.5	ug/L		92.7	60-130			
1,1,1,2-Tetrachloroethane	31.7	0.5	ug/L		79.2	60-130			
1,1,2,2-Tetrachloroethane	30.6	0.5	ug/L		76.6	60-130			
Tetrachloroethylene	31.7	0.5	ug/L		79.4	60-130			
Toluene	31.6	0.5	ug/L		79.0	60-130			
1,1,1-Trichloroethane	32.2	0.5	ug/L		80.5	60-130			
1,1,2-Trichloroethane	35.9	0.5	ug/L		89.7	60-130			
Trichloroethylene	35.2	0.5	ug/L		88.1	60-130			
Trichlorofluoromethane	32.9	1.0	ug/L		82.3	60-130			
Vinyl chloride	28.8	0.5	ug/L		71.9	50-140			
m,p-Xylenes	76.5	0.5	ug/L		95.6	60-130			
o-Xylene	38.9	0.5	ug/L		97.3	60-130			

Certificate of Analysis
Client: Paterson Group Consulting Engineers
Client PO: 25777

Report Date: 24-Jan-2019
Order Date: 21-Jan-2019
Project Description: PE3584

Qualifier Notes:

None

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

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

CCME PHC additional information:

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

Certificate of Analysis

Paterson Group Consulting Engineers

154 Colonnade Road South
Nepean, ON K2E 7J5
Attn: Lauren Kratz

Client PO: 25778
Project: PE3584
Custody: 119374

Report Date: 28-Jan-2019
Order Date: 22-Jan-2019

Order #: 1904167

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

Paracel ID	Client ID
1904167-01	MW2-18-GW2
1904167-02	MW5-18-GW1
1904167-03	MW6-18-GW1
1904167-04	Dup-PR1
1904167-05	Trip Blank

Approved By:



Mark Foto, M.Sc.
Lab Supervisor

Certificate of Analysis
Client: Paterson Group Consulting Engineers
Client PO: 25778

Report Date: 28-Jan-2019
Order Date: 22-Jan-2019
Project Description: PE3584

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Chromium, hexavalent - water	MOE E3056 - colourimetric	23-Jan-19	23-Jan-19
Mercury by CVAA	EPA 245.2 - Cold Vapour AA	23-Jan-19	23-Jan-19
Metals, ICP-MS	EPA 200.8 - ICP-MS	24-Jan-19	24-Jan-19
PCBs, total	EPA 608 - GC-ECD	23-Jan-19	23-Jan-19
PHC F1	CWS Tier 1 - P&T GC-FID	24-Jan-19	25-Jan-19
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	24-Jan-19	24-Jan-19
REG 153: PAHs by GC-MS	EPA 625 - GC-MS, extraction	25-Jan-19	25-Jan-19
REG 153: VOCs by P&T GC/MS	EPA 624 - P&T GC-MS	24-Jan-19	25-Jan-19

Certificate of Analysis
 Client: Paterson Group Consulting Engineers
 Client PO: 25778

Report Date: 28-Jan-2019
 Order Date: 22-Jan-2019
 Project Description: PE3584

Client ID:	MW2-18-GW2	MW5-18-GW1	MW6-18-GW1	Dup-PR1
Sample Date:	01/21/2019 12:00	01/21/2019 12:00	01/21/2019 12:00	01/21/2019 12:00
Sample ID:	1904167-01	1904167-02	1904167-03	1904167-04
MDL/Units	Water	Water	Water	Water

Metals

Mercury	0.1 ug/L	<0.1	<0.1	<0.1	-
Antimony	0.5 ug/L	<0.5	<0.5	<0.5	-
Arsenic	1 ug/L	2	12	2	-
Barium	1 ug/L	213	557	240	-
Beryllium	0.5 ug/L	<0.5	<0.5	<0.5	-
Boron	10 ug/L	53	67	53	-
Cadmium	0.1 ug/L	<0.1	<0.1	<0.1	-
Chromium	1 ug/L	<1	<1	<1	-
Chromium (VI)	10 ug/L	<10	<10	<10	-
Cobalt	0.5 ug/L	0.7	3.6	0.6	-
Copper	0.5 ug/L	<0.5	0.6	1.0	-
Lead	0.1 ug/L	<0.1	<0.1	<0.1	-
Molybdenum	0.5 ug/L	5.1	14.9	4.7	-
Nickel	1 ug/L	2	23	2	-
Selenium	1 ug/L	<1	2	<1	-
Silver	0.1 ug/L	<0.1	<0.1	<0.1	-
Sodium	200 ug/L	79500	203000	83300	-
Thallium	0.1 ug/L	<0.1	<0.1	<0.1	-
Uranium	0.1 ug/L	1.6	0.6	1.1	-
Vanadium	0.5 ug/L	1.2	5.2	1.4	-
Zinc	5 ug/L	<5	<5	<5	-

Volatiles

Acetone	5.0 ug/L	<5.0	160	<5.0	-
Benzene	0.5 ug/L	<0.5	<0.5	<0.5	-
Bromodichloromethane	0.5 ug/L	<0.5	<0.5	<0.5	-
Bromoform	0.5 ug/L	<0.5	<0.5	<0.5	-
Bromomethane	0.5 ug/L	<0.5	<0.5	<0.5	-
Carbon Tetrachloride	0.2 ug/L	<0.2	<0.2	<0.2	-
Chlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	-
Chloroform	0.5 ug/L	<0.5	0.7	<0.5	-
Dibromochloromethane	0.5 ug/L	<0.5	<0.5	<0.5	-
Dichlorodifluoromethane	1.0 ug/L	<1.0	<1.0	<1.0	-
1,2-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	-
1,3-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	-
1,4-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	-

Certificate of Analysis
 Client: Paterson Group Consulting Engineers
 Client PO: 25778

Report Date: 28-Jan-2019
 Order Date: 22-Jan-2019
 Project Description: PE3584

	Client ID: Sample Date: Sample ID:	MW2-18-GW2 01/21/2019 12:00 1904167-01 Water	MW5-18-GW1 01/21/2019 12:00 1904167-02 Water	MW6-18-GW1 01/21/2019 12:00 1904167-03 Water	Dup-PR1 01/21/2019 12:00 1904167-04 Water
	MDL/Units				
1,1-Dichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	-
1,2-Dichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	-
1,1-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	-
cis-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	-
trans-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	-
1,2-Dichloropropane	0.5 ug/L	<0.5	<0.5	<0.5	-
cis-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	<0.5	-
trans-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	<0.5	-
1,3-Dichloropropene, total	0.5 ug/L	<0.5	<0.5	<0.5	-
Ethylbenzene	0.5 ug/L	<0.5	<0.5	<0.5	-
Ethylene dibromide (dibromoethane)	0.2 ug/L	<0.2	<0.2	<0.2	-
Hexane	1.0 ug/L	<1.0	<1.0	<1.0	-
Methyl Ethyl Ketone (2-Butanone)	5.0 ug/L	<5.0	17.2	<5.0	-
Methyl Isobutyl Ketone	5.0 ug/L	<5.0	<5.0	<5.0	-
Methyl tert-butyl ether	2.0 ug/L	<2.0	<2.0	<2.0	-
Methylene Chloride	5.0 ug/L	<5.0	<5.0	<5.0	-
Styrene	0.5 ug/L	<0.5	<0.5	<0.5	-
1,1,1,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	<0.5	-
1,1,2,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	<0.5	-
Tetrachloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	-
Toluene	0.5 ug/L	<0.5	0.6	<0.5	-
1,1,1-Trichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	-
1,1,2-Trichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	-
Trichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	-
Trichlorofluoromethane	1.0 ug/L	<1.0	<1.0	<1.0	-
Vinyl chloride	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	-
Xylenes, total	0.5 ug/L	<0.5	<0.5	<0.5	-
4-Bromofluorobenzene	Surrogate	103%	99.2%	98.3%	-
Dibromofluoromethane	Surrogate	84.5%	90.4%	87.2%	-
Toluene-d8	Surrogate	111%	109%	110%	-

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	-

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	Client ID: Sample Date: Sample ID:	MW2-18-GW2 01/21/2019 12:00 1904167-01 Water	MW5-18-GW1 01/21/2019 12:00 1904167-02 Water	MW6-18-GW1 01/21/2019 12:00 1904167-03 Water	Dup-PR1 01/21/2019 12:00 1904167-04 Water
	MDL/Units				
F4 PHCs (C34-C50)	100 ug/L	<100	<100	<100	-

Semi-Volatiles

Acenaphthene	0.05 ug/L	-	<0.05	<0.05	<0.05
Acenaphthylene	0.05 ug/L	-	<0.05	<0.05	<0.05
Anthracene	0.01 ug/L	-	<0.01	<0.01	<0.01
Benzo [a] anthracene	0.01 ug/L	-	<0.01	<0.01	<0.01
Benzo [a] pyrene	0.01 ug/L	-	<0.01	<0.01	<0.01
Benzo [b] fluoranthene	0.05 ug/L	-	<0.05	<0.05	<0.05
Benzo [g,h,i] perylene	0.05 ug/L	-	<0.05	<0.05	<0.05
Benzo [k] fluoranthene	0.05 ug/L	-	<0.05	<0.05	<0.05
Chrysene	0.05 ug/L	-	<0.05	<0.05	<0.05
Dibenzo [a,h] anthracene	0.05 ug/L	-	<0.05	<0.05	<0.05
Fluoranthene	0.01 ug/L	-	<0.01	<0.01	<0.01
Fluorene	0.05 ug/L	-	<0.05	<0.05	<0.05
Indeno [1,2,3-cd] pyrene	0.05 ug/L	-	<0.05	<0.05	<0.05
1-Methylnaphthalene	0.05 ug/L	-	<0.05	<0.05	<0.05
2-Methylnaphthalene	0.05 ug/L	-	<0.05	<0.05	<0.05
Methylnaphthalene (1&2)	0.10 ug/L	-	<0.10	<0.10	<0.10
Naphthalene	0.05 ug/L	-	<0.05	<0.05	<0.05
Phenanthrene	0.05 ug/L	-	<0.05	<0.05	<0.05
Pyrene	0.01 ug/L	-	<0.01	<0.01	<0.01
2-Fluorobiphenyl	Surrogate	-	81.0%	77.1%	77.1%
Terphenyl-d14	Surrogate	-	75.4%	95.3%	98.1%

PCBs

PCBs, total	0.05 ug/L	<0.05	<0.05	<0.05	-
Decachlorobiphenyl	Surrogate	89.4%	88.2%	92.8%	-

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Client ID:	Trip Blank	-	-	-
Sample Date:	01/18/2019 12:00	-	-	-
Sample ID:	1904167-05	-	-	-
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 (dibromoethar	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	-	-	-

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Project Description: PE3584

	Client ID:	Trip Blank	-	-	-
	Sample Date:	01/18/2019 12:00	-	-	-
	Sample ID:	1904167-05	-	-	-
	MDL/Units	Water	-	-	-
1,1,1-Trichloroethane	0.5 ug/L	<0.5	-	-	-
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	95.4%	-	-	-
Dibromofluoromethane	Surrogate	90.4%	-	-	-
Toluene-d8	Surrogate	109%	-	-	-

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Client: Paterson Group Consulting Engineers

Client PO: 25778

Report Date: 28-Jan-2019

Order Date: 22-Jan-2019

Project Description: PE3584

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L						
F2 PHCs (C10-C16)	ND	100	ug/L						
F3 PHCs (C16-C34)	ND	100	ug/L						
F4 PHCs (C34-C50)	ND	100	ug/L						
Metals									
Mercury	ND	0.1	ug/L						
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 (VI)	ND	10	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	0.432		ug/L		86.3	60-140			
Semi-Volatiles									
Acenaphthene	ND	0.05	ug/L						
Acenaphthylene	ND	0.05	ug/L						
Anthracene	ND	0.01	ug/L						
Benzo [a] anthracene	ND	0.01	ug/L						
Benzo [a] pyrene	ND	0.01	ug/L						
Benzo [b] fluoranthene	ND	0.05	ug/L						
Benzo [g,h,i] perylene	ND	0.05	ug/L						
Benzo [k] fluoranthene	ND	0.05	ug/L						
Chrysene	ND	0.05	ug/L						
Dibenzo [a,h] anthracene	ND	0.05	ug/L						
Fluoranthene	ND	0.01	ug/L						
Fluorene	ND	0.05	ug/L						
Indeno [1,2,3-cd] pyrene	ND	0.05	ug/L						
1-Methylnaphthalene	ND	0.05	ug/L						
2-Methylnaphthalene	ND	0.05	ug/L						
Methylnaphthalene (1&2)	ND	0.10	ug/L						
Naphthalene	ND	0.05	ug/L						
Phenanthrene	ND	0.05	ug/L						
Pyrene	ND	0.01	ug/L						
Surrogate: 2-Fluorobiphenyl	14.8		ug/L		73.9	50-140			
Surrogate: Terphenyl-d14	19.9		ug/L		99.6	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						

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Client: Paterson Group Consulting Engineers

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Project Description: PE3584

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
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)	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						
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	84.1		ug/L		105	50-140			
Surrogate: Dibromofluoromethane	77.3		ug/L		96.7	50-140			
Surrogate: Toluene-d8	86.3		ug/L		108	50-140			

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Report Date: 28-Jan-2019
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 Project Description: PE3584

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				30	
Metals									
Mercury	ND	0.1	ug/L	ND			0.0	20	
Antimony	ND	0.5	ug/L	ND			0.0	20	
Arsenic	ND	1	ug/L	ND			0.0	20	
Barium	ND	1	ug/L	1.1			0.0	20	
Beryllium	ND	0.5	ug/L	ND			0.0	20	
Boron	ND	10	ug/L	ND			0.0	20	
Cadmium	ND	0.1	ug/L	ND			0.0	20	
Chromium (VI)	ND	10	ug/L	ND				20	
Chromium	ND	1	ug/L	ND			0.0	20	
Cobalt	ND	0.5	ug/L	ND			0.0	20	
Copper	ND	0.5	ug/L	ND			0.0	20	
Lead	ND	0.1	ug/L	ND			0.0	20	
Molybdenum	ND	0.5	ug/L	ND			0.0	20	
Nickel	ND	1	ug/L	ND			0.0	20	
Selenium	ND	1	ug/L	ND			0.0	20	
Silver	ND	0.1	ug/L	ND			0.0	20	
Sodium	ND	200	ug/L	937			0.0	20	
Thallium	ND	0.1	ug/L	ND			0.0	20	
Uranium	ND	0.1	ug/L	ND			0.0	20	
Vanadium	ND	0.5	ug/L	ND			0.0	20	
Zinc	ND	5	ug/L	ND			0.0	20	
Volatiles									
Acetone	ND	5.0	ug/L	ND				30	
Benzene	ND	0.5	ug/L	ND				30	
Bromodichloromethane	2.60	0.5	ug/L	2.49			4.3	30	
Bromoform	ND	0.5	ug/L	ND				30	
Bromomethane	ND	0.5	ug/L	ND				30	
Carbon Tetrachloride	ND	0.2	ug/L	ND				30	
Chlorobenzene	ND	0.5	ug/L	ND				30	
Chloroform	5.17	0.5	ug/L	4.72			9.1	30	
Dibromochloromethane	1.78	0.5	ug/L	ND			0.0	30	
Dichlorodifluoromethane	ND	1.0	ug/L	ND				30	
1,2-Dichlorobenzene	ND	0.5	ug/L	ND				30	
1,3-Dichlorobenzene	ND	0.5	ug/L	ND				30	
1,4-Dichlorobenzene	ND	0.5	ug/L	ND				30	
1,1-Dichloroethane	ND	0.5	ug/L	ND				30	
1,2-Dichloroethane	ND	0.5	ug/L	ND				30	
1,1-Dichloroethylene	ND	0.5	ug/L	ND				30	
cis-1,2-Dichloroethylene	ND	0.5	ug/L	ND				30	
trans-1,2-Dichloroethylene	ND	0.5	ug/L	ND				30	
1,2-Dichloropropane	ND	0.5	ug/L	ND				30	
cis-1,3-Dichloropropylene	ND	0.5	ug/L	ND				30	
trans-1,3-Dichloropropylene	ND	0.5	ug/L	ND				30	
Ethylbenzene	ND	0.5	ug/L	ND				30	
Ethylene dibromide (dibromoethane)	ND	0.2	ug/L	ND				30	
Hexane	ND	1.0	ug/L	ND				30	
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L	ND				30	
Methyl Isobutyl Ketone	ND	5.0	ug/L	ND				30	
Methyl tert-butyl ether	ND	2.0	ug/L	ND				30	
Methylene Chloride	ND	5.0	ug/L	ND				30	
Styrene	ND	0.5	ug/L	ND				30	
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L	ND				30	
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L	ND				30	
Tetrachloroethylene	ND	0.5	ug/L	ND				30	
Toluene	ND	0.5	ug/L	ND				30	

Certificate of Analysis

Report Date: 28-Jan-2019

Client: Paterson Group Consulting Engineers

Order Date: 22-Jan-2019

Client PO: 25778

Project Description: PE3584

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	ND	0.5	ug/L	ND				30	
1,1,2-Trichloroethane	ND	0.5	ug/L	ND				30	
Trichloroethylene	ND	0.5	ug/L	ND				30	
Trichlorofluoromethane	ND	1.0	ug/L	ND				30	
Vinyl chloride	ND	0.5	ug/L	ND				30	
m,p-Xylenes	ND	0.5	ug/L	ND				30	
o-Xylene	ND	0.5	ug/L	ND				30	
Surrogate: 4-Bromofluorobenzene	81.6		ug/L		102	50-140			
Surrogate: Dibromofluoromethane	78.7		ug/L		98.4	50-140			
Surrogate: Toluene-d8	91.7		ug/L		115	50-140			

Certificate of Analysis
 Client: Paterson Group Consulting Engineers
 Client PO: 25778

Report Date: 28-Jan-2019
 Order Date: 22-Jan-2019
 Project Description: PE3584

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	1660	25	ug/L		83.2	68-117			
F2 PHCs (C10-C16)	1720	100	ug/L		108	60-140			
F3 PHCs (C16-C34)	3970	100	ug/L		101	60-140			
F4 PHCs (C34-C50)	2420	100	ug/L		97.6	60-140			
Metals									
Mercury	3.21	0.1	ug/L	ND	107	70-130			
Antimony	50.1		ug/L	ND	100	80-120			
Arsenic	55.7		ug/L	ND	111	80-120			
Barium	51.6		ug/L	1.1	101	80-120			
Beryllium	59.3		ug/L	ND	119	80-120			
Boron	51		ug/L	ND	102	80-120			
Cadmium	53.4		ug/L	ND	107	80-120			
Chromium (VI)	187	10	ug/L	ND	93.5	70-130			
Chromium	57.1		ug/L	ND	114	80-120			
Cobalt	50.4		ug/L	ND	101	80-120			
Copper	56.0		ug/L	ND	112	80-120			
Lead	51.1		ug/L	ND	102	80-120			
Molybdenum	50.8		ug/L	ND	101	80-120			
Nickel	55.2		ug/L	ND	110	80-120			
Selenium	51.9		ug/L	ND	104	80-120			
Silver	50.8		ug/L	ND	102	80-120			
Sodium	9860		ug/L	937	89.2	80-120			
Thallium	48.4		ug/L	ND	96.8	80-120			
Uranium	52.3		ug/L	ND	105	80-120			
Vanadium	56.0		ug/L	ND	112	80-120			
Zinc	57		ug/L	ND	113	80-120			
PCBs									
PCBs, total	0.970	0.05	ug/L		97.0	60-140			
Surrogate: Decachlorobiphenyl	0.350		ug/L		69.9	60-140			
Semi-Volatiles									
Acenaphthene	4.91	0.05	ug/L		98.1	50-140			
Acenaphthylene	4.52	0.05	ug/L		90.3	50-140			
Anthracene	4.16	0.01	ug/L		83.2	50-140			
Benzo [a] anthracene	4.76	0.01	ug/L		95.2	50-140			
Benzo [a] pyrene	5.15	0.01	ug/L		103	50-140			
Benzo [b] fluoranthene	6.59	0.05	ug/L		132	50-140			
Benzo [g,h,i] perylene	5.78	0.05	ug/L		116	50-140			
Benzo [k] fluoranthene	5.27	0.05	ug/L		105	50-140			
Chrysene	4.98	0.05	ug/L		99.5	50-140			
Dibenzo [a,h] anthracene	5.64	0.05	ug/L		113	50-140			
Fluoranthene	4.11	0.01	ug/L		82.3	50-140			
Fluorene	4.48	0.05	ug/L		89.7	50-140			
Indeno [1,2,3-cd] pyrene	5.79	0.05	ug/L		116	50-140			
1-Methylnaphthalene	3.83	0.05	ug/L		76.6	50-140			
2-Methylnaphthalene	3.79	0.05	ug/L		75.7	50-140			
Naphthalene	4.07	0.05	ug/L		81.4	50-140			
Phenanthrene	4.25	0.05	ug/L		84.9	50-140			
Pyrene	3.89	0.01	ug/L		77.9	50-140			
Volatiles									
Acetone	95.8	5.0	ug/L		95.8	50-140			

Certificate of Analysis
 Client: Paterson Group Consulting Engineers
 Client PO: 25778

Report Date: 28-Jan-2019
 Order Date: 22-Jan-2019
 Project Description: PE3584

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Benzene	46.7	0.5	ug/L		117	60-130			
Bromodichloromethane	43.5	0.5	ug/L		109	60-130			
Bromoform	37.0	0.5	ug/L		92.4	60-130			
Bromomethane	33.3	0.5	ug/L		83.4	50-140			
Carbon Tetrachloride	39.9	0.2	ug/L		99.8	60-130			
Chlorobenzene	36.5	0.5	ug/L		91.3	60-130			
Chloroform	39.6	0.5	ug/L		99.0	60-130			
Dibromochloromethane	41.5	0.5	ug/L		104	60-130			
Dichlorodifluoromethane	34.2	1.0	ug/L		85.4	50-140			
1,2-Dichlorobenzene	41.2	0.5	ug/L		103	60-130			
1,3-Dichlorobenzene	40.3	0.5	ug/L		101	60-130			
1,4-Dichlorobenzene	36.8	0.5	ug/L		91.9	60-130			
1,1-Dichloroethane	40.0	0.5	ug/L		100	60-130			
1,2-Dichloroethane	40.8	0.5	ug/L		102	60-130			
1,1-Dichloroethylene	37.7	0.5	ug/L		94.2	60-130			
cis-1,2-Dichloroethylene	41.3	0.5	ug/L		103	60-130			
trans-1,2-Dichloroethylene	39.6	0.5	ug/L		98.9	60-130			
1,2-Dichloropropane	44.0	0.5	ug/L		110	60-130			
cis-1,3-Dichloropropylene	45.6	0.5	ug/L		114	60-130			
trans-1,3-Dichloropropylene	44.2	0.5	ug/L		110	60-130			
Ethylbenzene	47.8	0.5	ug/L		119	60-130			
Ethylene dibromide (dibromoethane)	37.6	0.2	ug/L		94.0	60-130			
Hexane	43.1	1.0	ug/L		108	60-130			
Methyl Ethyl Ketone (2-Butanone)	111	5.0	ug/L		111	50-140			
Methyl Isobutyl Ketone	115	5.0	ug/L		115	50-140			
Methyl tert-butyl ether	107	2.0	ug/L		107	50-140			
Methylene Chloride	34.9	5.0	ug/L		87.4	60-130			
Styrene	49.9	0.5	ug/L		125	60-130			
1,1,1,2-Tetrachloroethane	38.8	0.5	ug/L		97.0	60-130			
1,1,2,2-Tetrachloroethane	38.6	0.5	ug/L		96.5	60-130			
Tetrachloroethylene	38.2	0.5	ug/L		95.4	60-130			
Toluene	41.1	0.5	ug/L		103	60-130			
1,1,1-Trichloroethane	40.9	0.5	ug/L		102	60-130			
1,1,2-Trichloroethane	44.0	0.5	ug/L		110	60-130			
Trichloroethylene	45.4	0.5	ug/L		113	60-130			
Trichlorofluoromethane	36.7	1.0	ug/L		91.7	60-130			
Vinyl chloride	34.2	0.5	ug/L		85.4	50-140			
m,p-Xylenes	98.8	0.5	ug/L		123	60-130			
o-Xylene	49.6	0.5	ug/L		124	60-130			

Certificate of Analysis
Client: Paterson Group Consulting Engineers
Client PO: 25778

Report Date: 28-Jan-2019
Order Date: 22-Jan-2019
Project Description: PE3584

Qualifier Notes:***Login Qualifiers :***

Container(s) - Bottle and COC sample ID don't match -
Applies to samples: MW2-18-GW2

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.

CCME PHC additional information:

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



PARACEL



№ 119374

Client Name: Paterson Group	Project Reference: PE3584	Turnaround Time: ☐ 1 Day ☐ 3 Day ☐ 2 Day ☒ Regular Date Required: _____
Contact Name: Lauren Kratz	Quote #	
Address: 154 Colonnade Rd	PO # 25778	
	Email Address: lkratz@patersongroup.ca	
Telephone: 613-226-7381		

Criteria: ☒ O. Reg. 153/04 (As Amended) Table 1 ☒ RSC Filing ☐ O. Reg. 558/00 ☐ PWQO ☐ CCME ☐ SUB (Storm) ☐ SUB (Sanitary) Municipality: _____ ☐ Other: _____

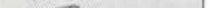
Required Analyses

[illegible]

Comments: #1 PCB reads 'MUF-18-GWI'.

Method of Delivery:

Paracet

Relinquished By (Signature): 	Received by Driver Depot: 	Received at Lab: 	Verified by: 
Relinquished By (Print): <u>J. Brouse</u>	Date/Time: <u>22/01/19 4:00</u>	Date/Time: <u>22/01/19 4:42</u>	Date/Time: <u>22/01/19 5:08</u>
Date/Time: <u>Jan 22 2019</u>	Temperature: <u>13.9°C</u>	Temperature: <u>13.9°C</u>	pH Verified [] By: <u> </u>

Certificate of Analysis

Paterson Group Consulting Engineers

154 Colonnade Road South
Nepean, ON K2E 7J5
Attn: Lauren Kratz

Client PO: 25779
Project: PE3584
Custody: 119375

Report Date: 29-Jan-2019
Order Date: 24-Jan-2019

Order #: 1904395

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

Paracel ID	Client ID
1904395-01	MW 3-18-GW1
1904395-02	MW 9-18-GW1
1904395-03	Trip Blank

Approved By:



Mark Foto, M.Sc.
Lab Supervisor

Certificate of Analysis
Client: Paterson Group Consulting Engineers
Client PO: 25779

Report Date: 29-Jan-2019
Order Date: 24-Jan-2019
Project Description: PE3584

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
PHC F1	CWS Tier 1 - P&T GC-FID	28-Jan-19	29-Jan-19
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	28-Jan-19	29-Jan-19
REG 153: PAHs by GC-MS	EPA 625 - GC-MS, extraction	25-Jan-19	25-Jan-19
REG 153: VOCs by P&T GC/MS	EPA 624 - P&T GC-MS	28-Jan-19	29-Jan-19

Certificate of Analysis
 Client: Paterson Group Consulting Engineers
 Client PO: 25779

Report Date: 29-Jan-2019
 Order Date: 24-Jan-2019
 Project Description: PE3584

Client ID:	MW 3-18-GW1	MW 9-18-GW1	Trip Blank	-
Sample Date:	01/23/2019 12:00	01/23/2019 12:00	01/22/2019 12:00	-
Sample ID:	1904395-01	1904395-02	1904395-03	-
MDL/Units	Water	Water	Water	-

Volatiles

Acetone	5.0 ug/L	<5.0	<5.0	<5.0	-
Benzene	0.5 ug/L	<0.5	<0.5	<0.5	-
Bromodichloromethane	0.5 ug/L	<0.5	<0.5	<0.5	-
Bromoform	0.5 ug/L	<0.5	<0.5	<0.5	-
Bromomethane	0.5 ug/L	<0.5	<0.5	<0.5	-
Carbon Tetrachloride	0.2 ug/L	<0.2	<0.2	<0.2	-
Chlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	-
Chloroform	0.5 ug/L	3.4	<0.5	<0.5	-
Dibromochloromethane	0.5 ug/L	<0.5	<0.5	<0.5	-
Dichlorodifluoromethane	1.0 ug/L	<1.0	<1.0	<1.0	-
1,2-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	-
1,3-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	-
1,4-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	-
1,1-Dichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	-
1,2-Dichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	-
1,1-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	-
cis-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	-
trans-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	-
1,2-Dichloropropane	0.5 ug/L	<0.5	<0.5	<0.5	-
cis-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	<0.5	-
trans-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	<0.5	-
1,3-Dichloropropene, total	0.5 ug/L	<0.5	<0.5	<0.5	-
Ethylbenzene	0.5 ug/L	<0.5	<0.5	<0.5	-
Ethylene dibromide (dibromoethane)	0.2 ug/L	<0.2	<0.2	<0.2	-
Hexane	1.0 ug/L	<1.0	<1.0	<1.0	-
Methyl Ethyl Ketone (2-Butanone)	5.0 ug/L	<5.0	<5.0	<5.0	-
Methyl Isobutyl Ketone	5.0 ug/L	<5.0	<5.0	<5.0	-
Methyl tert-butyl ether	2.0 ug/L	<2.0	<2.0	<2.0	-
Methylene Chloride	5.0 ug/L	<5.0	<5.0	<5.0	-
Styrene	0.5 ug/L	<0.5	<0.5	<0.5	-
1,1,1,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	<0.5	-
1,1,1,2,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	<0.5	-
Tetrachloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	-
Toluene	0.5 ug/L	<0.5	<0.5	<0.5	-
1,1,1-Trichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	-

Certificate of Analysis
 Client: Paterson Group Consulting Engineers
 Client PO: 25779

Report Date: 29-Jan-2019
 Order Date: 24-Jan-2019
 Project Description: PE3584

	Client ID: Sample Date: Sample ID:	MW 3-18-GW1 01/23/2019 12:00 1904395-01 Water	MW 9-18-GW1 01/23/2019 12:00 1904395-02 Water	Trip Blank 01/22/2019 12:00 1904395-03 Water	- - - -
	MDL/Units				
1,1,2-Trichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	-
Trichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	-
Trichlorofluoromethane	1.0 ug/L	<1.0	<1.0	<1.0	-
Vinyl chloride	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	-
Xylenes, total	0.5 ug/L	<0.5	<0.5	<0.5	-
4-Bromofluorobenzene	Surrogate	101%	100%	102%	-
Dibromofluoromethane	Surrogate	88.6%	89.7%	99.6%	-
Toluene-d8	Surrogate	104%	106%	107%	-

Hydrocarbons

F1 PHCs (C6-C10)	25 ug/L	<25	<25	-	-
F2 PHCs (C10-C16)	100 ug/L	-	<100	-	-
F3 PHCs (C16-C34)	100 ug/L	-	<100	-	-
F4 PHCs (C34-C50)	100 ug/L	-	<100	-	-

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	-	83.2%	-	-
Terphenyl-d14	Surrogate	-	93.7%	-	-

Certificate of Analysis
 Client: Paterson Group Consulting Engineers
 Client PO: 25779

Report Date: 29-Jan-2019
 Order Date: 24-Jan-2019
 Project Description: PE3584

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L						
F2 PHCs (C10-C16)	ND	100	ug/L						
F3 PHCs (C16-C34)	ND	100	ug/L						
F4 PHCs (C34-C50)	ND	100	ug/L						
Semi-Volatiles									
Acenaphthene	ND	0.05	ug/L						
Acenaphthylene	ND	0.05	ug/L						
Anthracene	ND	0.01	ug/L						
Benzo [a] anthracene	ND	0.01	ug/L						
Benzo [a] pyrene	ND	0.01	ug/L						
Benzo [b] fluoranthene	ND	0.05	ug/L						
Benzo [g,h,i] perylene	ND	0.05	ug/L						
Benzo [k] fluoranthene	ND	0.05	ug/L						
Chrysene	ND	0.05	ug/L						
Dibenzo [a,h] anthracene	ND	0.05	ug/L						
Fluoranthene	ND	0.01	ug/L						
Fluorene	ND	0.05	ug/L						
Indeno [1,2,3-cd] pyrene	ND	0.05	ug/L						
1-Methylnaphthalene	ND	0.05	ug/L						
2-Methylnaphthalene	ND	0.05	ug/L						
Methylnaphthalene (1&2)	ND	0.10	ug/L						
Naphthalene	ND	0.05	ug/L						
Phenanthrene	ND	0.05	ug/L						
Pyrene	ND	0.01	ug/L						
Surrogate: 2-Fluorobiphenyl	14.8		ug/L		73.9	50-140			
Surrogate: Terphenyl-d14	19.9		ug/L		99.6	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)	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						

Certificate of Analysis

Client: Paterson Group Consulting Engineers

Client PO: 25779

Report Date: 29-Jan-2019

Order Date: 24-Jan-2019

Project Description: PE3584

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
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						
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	85.5		ug/L		107	50-140			
Surrogate: Dibromofluoromethane	86.0		ug/L		108	50-140			
Surrogate: Toluene-d8	92.1		ug/L		115	50-140			

Certificate of Analysis
 Client: Paterson Group Consulting Engineers
 Client PO: 25779

Report Date: 29-Jan-2019
 Order Date: 24-Jan-2019
 Project Description: PE3584

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				30	
Volatiles									
Acetone	ND	5.0	ug/L	ND				30	
Benzene	ND	0.5	ug/L	ND				30	
Bromodichloromethane	ND	0.5	ug/L	ND				30	
Bromoform	ND	0.5	ug/L	ND				30	
Bromomethane	ND	0.5	ug/L	ND				30	
Carbon Tetrachloride	ND	0.2	ug/L	ND				30	
Chlorobenzene	ND	0.5	ug/L	ND				30	
Chloroform	ND	0.5	ug/L	ND				30	
Dibromochloromethane	ND	0.5	ug/L	ND				30	
Dichlorodifluoromethane	ND	1.0	ug/L	ND				30	
1,2-Dichlorobenzene	ND	0.5	ug/L	ND				30	
1,3-Dichlorobenzene	ND	0.5	ug/L	ND				30	
1,4-Dichlorobenzene	ND	0.5	ug/L	ND				30	
1,1-Dichloroethane	ND	0.5	ug/L	ND				30	
1,2-Dichloroethane	ND	0.5	ug/L	ND				30	
1,1-Dichloroethylene	ND	0.5	ug/L	ND				30	
cis-1,2-Dichloroethylene	ND	0.5	ug/L	ND				30	
trans-1,2-Dichloroethylene	ND	0.5	ug/L	ND				30	
1,2-Dichloropropane	ND	0.5	ug/L	ND				30	
cis-1,3-Dichloropropylene	ND	0.5	ug/L	ND				30	
trans-1,3-Dichloropropylene	ND	0.5	ug/L	ND				30	
Ethylbenzene	ND	0.5	ug/L	ND				30	
Ethylene dibromide (dibromoethane)	ND	0.2	ug/L	ND				30	
Hexane	ND	1.0	ug/L	ND				30	
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L	ND				30	
Methyl Isobutyl Ketone	ND	5.0	ug/L	ND				30	
Methyl tert-butyl ether	ND	2.0	ug/L	ND				30	
Methylene Chloride	ND	5.0	ug/L	ND				30	
Styrene	ND	0.5	ug/L	ND				30	
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L	ND				30	
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L	ND				30	
Tetrachloroethylene	ND	0.5	ug/L	ND				30	
Toluene	ND	0.5	ug/L	ND				30	
1,1,1-Trichloroethane	ND	0.5	ug/L	ND				30	
1,1,2-Trichloroethane	ND	0.5	ug/L	ND				30	
Trichloroethylene	ND	0.5	ug/L	ND				30	
Trichlorofluoromethane	ND	1.0	ug/L	ND				30	
Vinyl chloride	ND	0.5	ug/L	ND				30	
m,p-Xylenes	ND	0.5	ug/L	ND				30	
o-Xylene	ND	0.5	ug/L	ND				30	
Surrogate: 4-Bromofluorobenzene	84.2		ug/L		105	50-140			
Surrogate: Dibromofluoromethane	80.2		ug/L		100	50-140			
Surrogate: Toluene-d8	92.8		ug/L		116	50-140			

Certificate of Analysis
 Client: Paterson Group Consulting Engineers
 Client PO: 25779

Report Date: 29-Jan-2019
 Order Date: 24-Jan-2019
 Project Description: PE3584

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	1750	25	ug/L		87.3	68-117			
F2 PHCs (C10-C16)	1790	100	ug/L		112	60-140			
F3 PHCs (C16-C34)	3950	100	ug/L		101	60-140			
F4 PHCs (C34-C50)	1840	100	ug/L		74.1	60-140			
Semi-Volatiles									
Acenaphthene	4.91	0.05	ug/L		98.1	50-140			
Acenaphthylene	4.52	0.05	ug/L		90.3	50-140			
Anthracene	4.16	0.01	ug/L		83.2	50-140			
Benzo [a] anthracene	4.76	0.01	ug/L		95.2	50-140			
Benzo [a] pyrene	5.15	0.01	ug/L		103	50-140			
Benzo [b] fluoranthene	6.59	0.05	ug/L		132	50-140			
Benzo [g,h,i] perylene	5.78	0.05	ug/L		116	50-140			
Benzo [k] fluoranthene	5.27	0.05	ug/L		105	50-140			
Chrysene	4.98	0.05	ug/L		99.5	50-140			
Dibenzo [a,h] anthracene	5.64	0.05	ug/L		113	50-140			
Fluoranthene	4.11	0.01	ug/L		82.3	50-140			
Fluorene	4.48	0.05	ug/L		89.7	50-140			
Indeno [1,2,3-cd] pyrene	5.79	0.05	ug/L		116	50-140			
1-Methylnaphthalene	3.83	0.05	ug/L		76.6	50-140			
2-Methylnaphthalene	3.79	0.05	ug/L		75.7	50-140			
Naphthalene	4.07	0.05	ug/L		81.4	50-140			
Phenanthrene	4.25	0.05	ug/L		84.9	50-140			
Pyrene	3.89	0.01	ug/L		77.9	50-140			
Surrogate: 2-Fluorobiphenyl	16.0		ug/L		79.9	50-140			
Volatiles									
Acetone	85.1	5.0	ug/L		85.1	50-140			
Benzene	42.3	0.5	ug/L		106	60-130			
Bromodichloromethane	41.3	0.5	ug/L		103	60-130			
Bromoform	34.9	0.5	ug/L		87.2	60-130			
Bromomethane	28.9	0.5	ug/L		72.2	50-140			
Carbon Tetrachloride	36.1	0.2	ug/L		90.2	60-130			
Chlorobenzene	36.0	0.5	ug/L		89.9	60-130			
Chloroform	37.6	0.5	ug/L		93.9	60-130			
Dibromochloromethane	38.3	0.5	ug/L		95.8	60-130			
Dichlorodifluoromethane	33.2	1.0	ug/L		82.9	50-140			
1,2-Dichlorobenzene	38.7	0.5	ug/L		96.7	60-130			
1,3-Dichlorobenzene	37.8	0.5	ug/L		94.4	60-130			
1,4-Dichlorobenzene	36.1	0.5	ug/L		90.3	60-130			
1,1-Dichloroethane	35.8	0.5	ug/L		89.4	60-130			
1,2-Dichloroethane	37.3	0.5	ug/L		93.3	60-130			
1,1-Dichloroethylene	33.1	0.5	ug/L		82.8	60-130			
cis-1,2-Dichloroethylene	37.4	0.5	ug/L		93.6	60-130			
trans-1,2-Dichloroethylene	34.0	0.5	ug/L		85.0	60-130			
1,2-Dichloropropane	42.2	0.5	ug/L		106	60-130			
cis-1,3-Dichloropropylene	45.3	0.5	ug/L		113	60-130			
trans-1,3-Dichloropropylene	41.5	0.5	ug/L		104	60-130			
Ethylbenzene	45.9	0.5	ug/L		115	60-130			
Ethylene dibromide (dibromoethane)	36.4	0.2	ug/L		91.0	60-130			
Hexane	46.2	1.0	ug/L		116	60-130			
Methyl Ethyl Ketone (2-Butanone)	97.7	5.0	ug/L		97.7	50-140			
Methyl Isobutyl Ketone	113	5.0	ug/L		113	50-140			

Certificate of Analysis
Client: Paterson Group Consulting Engineers
Client PO: 25779

Report Date: 29-Jan-2019
Order Date: 24-Jan-2019
Project Description: PE3584

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Methyl tert-butyl ether	98.8	2.0	ug/L		98.8	50-140			
Methylene Chloride	34.1	5.0	ug/L		85.2	60-130			
Styrene	47.7	0.5	ug/L		119	60-130			
1,1,1,2-Tetrachloroethane	36.4	0.5	ug/L		91.0	60-130			
1,1,2,2-Tetrachloroethane	36.2	0.5	ug/L		90.4	60-130			
Tetrachloroethylene	33.7	0.5	ug/L		84.2	60-130			
Toluene	38.8	0.5	ug/L		97.1	60-130			
1,1,1-Trichloroethane	35.8	0.5	ug/L		89.5	60-130			
1,1,2-Trichloroethane	41.0	0.5	ug/L		102	60-130			
Trichloroethylene	40.5	0.5	ug/L		101	60-130			
Trichlorofluoromethane	37.6	1.0	ug/L		94.1	60-130			
Vinyl chloride	29.7	0.5	ug/L		74.2	50-140			
m,p-Xylenes	93.9	0.5	ug/L		117	60-130			
o-Xylene	46.5	0.5	ug/L		116	60-130			

Certificate of Analysis
Client: Paterson Group Consulting Engineers
Client PO: 25779

Report Date: 29-Jan-2019
Order Date: 24-Jan-2019
Project Description: PE3584

Qualifier Notes:

None

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

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

CCME PHC additional information:

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



LABORATORIES LTD.

Parcel ID: 1904395



Head Office
300-2319 St. Laurent Blvd.
Ottawa, Ontario K1G 4J8
p: 1-800-749-1947
e: paracel@paracellabs.com

Chain of Custody

(Lab Use Only)

No 119375

Page ___ of ___

Client Name: Paterson Group	Project Reference: PE3584	Turnaround Time: ☐ 1 Day ☐ 3 Day ☐ 2 Day ☒ Regular Date Required: _____
Contact Name: Lauren Kratz	Quote #	
Address: 154 Colonade Rd	PO #: 25779	
Telephone: 613-226-7381	Email Address: lkratz@patersongroup.ca	

Criteria: ☒ O. Reg. 153/04 (As Amended) Table 2 ☒ RSC Filing ☐ O. Reg. 558/00 ☐ PWQO ☐ CCME ☐ SUB (Storm) ☐ SUB (Sanitary) Municipality: _____ ☐ Other: _____

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

Required Analyses

Sample ID/Location Name		Matrix	Air Volume	# of Containers	Sample Taken		PHCs F/F4+BTX	VOC's	PAH's	Metals by ICP	Hg	C+V	B (HWS)	PHC 12-F4						
					Date	Time														
1	MW3-18-GW1	GW		2	Jan 23 2019	pm	X	X												
2	MW8-18-GW1			2			X	X												
3	MW9-18-GW1			3			X	X	X					X						
4	trip blank			1	Jan 22 2019			X												
5																				
6																				
7																				
8																				
9																				
10																				

Comments: 1 voc vial submitted. l

Method of Delivery:

Parcel

Relinquished By (Sign):	Received by Driver/Depot:	Received at Lab:	Verified By:
Relinquished By (Print): Lauren Kratz	Date/Time: 24/01/19 4:00 PM	Date/Time: Jan 24, 19 4:49	Date/Time: Jan 24/19
Date/Time: Jan 24 2019	Temperature: 1°C	Temperature: 15.4°C	pH Verified [] By:

Certificate of Analysis

Paterson Group Consulting Engineers

154 Colonnade Road South
Nepean, ON K2E 7J5
Attn: Lauren Kratz

Client PO: 25780
Project: PE3584
Custody: 119376

Report Date: 1-Feb-2019
Order Date: 29-Jan-2019

Order #: 1905179

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

Paracel ID	Client ID
1905179-01	MW3-18-GW2
1905179-02	MW4-18-GW1
1905179-03	MW8-18-GW1
1905179-04	MW9-18-GW2
1905179-05	Trip Blank

Approved By:



Dale Robertson, BSc
Laboratory Director

Certificate of Analysis

Client: Paterson Group Consulting Engineers

Client PO: 25780

Report Date: 01-Feb-2019

Order Date: 29-Jan-2019

Project Description: PE3584

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Chromium, hexavalent - water	MOE E3056 - colourimetric	31-Jan-19	31-Jan-19
Mercury by CVAA	EPA 245.2 - Cold Vapour AA	30-Jan-19	30-Jan-19
Metals, ICP-MS	EPA 200.8 - ICP-MS	31-Jan-19	31-Jan-19
PCBs, total	EPA 608 - GC-ECD	29-Jan-19	30-Jan-19
PHC F1	CWS Tier 1 - P&T GC-FID	30-Jan-19	31-Jan-19
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	30-Jan-19	31-Jan-19
REG 153: PAHs by GC-MS	EPA 625 - GC-MS, extraction	31-Jan-19	31-Jan-19
REG 153: VOCs by P&T GC/MS	EPA 624 - P&T GC-MS	30-Jan-19	31-Jan-19

Certificate of Analysis
 Client: Paterson Group Consulting Engineers
 Client PO: 25780

Report Date: 01-Feb-2019

Order Date: 29-Jan-2019

Project Description: PE3584

Client ID:	MW3-18-GW2	MW4-18-GW1	MW8-18-GW1	MW9-18-GW2
Sample Date:	01/28/2019 12:00	01/28/2019 12:00	01/28/2019 12:00	01/28/2019 12:00
Sample ID:	1905179-01	1905179-02	1905179-03	1905179-04
MDL/Units	Water	Water	Water	Water

Metals

Mercury	0.1 ug/L	<0.1	-	-	<0.1
Antimony	0.5 ug/L	<0.5	-	-	0.6
Arsenic	1 ug/L	1	-	-	<1
Barium	1 ug/L	307	-	-	118
Beryllium	0.5 ug/L	<0.5	-	-	<0.5
Boron	10 ug/L	63	-	-	91
Cadmium	0.1 ug/L	<0.1	-	-	<0.1
Chromium	1 ug/L	<1	-	-	4
Chromium (VI)	10 ug/L	<10	-	-	<10
Cobalt	0.5 ug/L	0.6	-	-	1.3
Copper	0.5 ug/L	2.1	-	-	6.7
Lead	0.1 ug/L	<0.1	-	-	0.3
Molybdenum	0.5 ug/L	2.4	-	-	5.2
Nickel	1 ug/L	2	-	-	7
Selenium	1 ug/L	<1	-	-	<1
Silver	0.1 ug/L	<0.1	-	-	<0.1
Sodium	200 ug/L	81400	-	-	1250000
Thallium	0.1 ug/L	<0.1	-	-	<0.1
Uranium	0.1 ug/L	0.9	-	-	3.1
Vanadium	0.5 ug/L	1.2	-	-	1.5
Zinc	5 ug/L	<5	-	-	9

Volatiles

Acetone	5.0 ug/L	-	<5.0	<5.0	-
Benzene	0.5 ug/L	-	<0.5	<0.5	-
Bromodichloromethane	0.5 ug/L	-	<0.5	1.3	-
Bromoform	0.5 ug/L	-	<0.5	<0.5	-
Bromomethane	0.5 ug/L	-	<0.5	<0.5	-
Carbon Tetrachloride	0.2 ug/L	-	<0.2	<0.2	-
Chlorobenzene	0.5 ug/L	-	<0.5	<0.5	-
Chloroform	0.5 ug/L	-	3.2	1.3	-
Dibromochloromethane	0.5 ug/L	-	<0.5	<0.5	-
Dichlorodifluoromethane	1.0 ug/L	-	<1.0	<1.0	-
1,2-Dichlorobenzene	0.5 ug/L	-	<0.5	<0.5	-
1,3-Dichlorobenzene	0.5 ug/L	-	<0.5	<0.5	-
1,4-Dichlorobenzene	0.5 ug/L	-	<0.5	<0.5	-

Certificate of Analysis
 Client: Paterson Group Consulting Engineers
 Client PO: 25780

Report Date: 01-Feb-2019
 Order Date: 29-Jan-2019
 Project Description: PE3584

	Client ID: Sample Date: Sample ID:	MW3-18-GW2 01/28/2019 12:00 1905179-01 Water	MW4-18-GW1 01/28/2019 12:00 1905179-02 Water	MW8-18-GW1 01/28/2019 12:00 1905179-03 Water	MW9-18-GW2 01/28/2019 12:00 1905179-04 Water
	MDL/Units				
1,1-Dichloroethane	0.5 ug/L	-	<0.5	<0.5	-
1,2-Dichloroethane	0.5 ug/L	-	<0.5	<0.5	-
1,1-Dichloroethylene	0.5 ug/L	-	<0.5	<0.5	-
cis-1,2-Dichloroethylene	0.5 ug/L	-	<0.5	<0.5	-
trans-1,2-Dichloroethylene	0.5 ug/L	-	<0.5	<0.5	-
1,2-Dichloropropane	0.5 ug/L	-	<0.5	<0.5	-
cis-1,3-Dichloropropylene	0.5 ug/L	-	<0.5	<0.5	-
trans-1,3-Dichloropropylene	0.5 ug/L	-	<0.5	<0.5	-
1,3-Dichloropropene, total	0.5 ug/L	-	<0.5	<0.5	-
Ethylbenzene	0.5 ug/L	-	<0.5	<0.5	-
Ethylene dibromide (dibromoethane)	0.2 ug/L	-	<0.2	<0.2	-
Hexane	1.0 ug/L	-	<1.0	<1.0	-
Methyl Ethyl Ketone (2-Butanone)	5.0 ug/L	-	<5.0	<5.0	-
Methyl Isobutyl Ketone	5.0 ug/L	-	<5.0	<5.0	-
Methyl tert-butyl ether	2.0 ug/L	-	<2.0	<2.0	-
Methylene Chloride	5.0 ug/L	-	<5.0	<5.0	-
Styrene	0.5 ug/L	-	<0.5	<0.5	-
1,1,1,2-Tetrachloroethane	0.5 ug/L	-	<0.5	<0.5	-
1,1,2,2-Tetrachloroethane	0.5 ug/L	-	<0.5	<0.5	-
Tetrachloroethylene	0.5 ug/L	-	<0.5	<0.5	-
Toluene	0.5 ug/L	-	<0.5	<0.5	-
1,1,1-Trichloroethane	0.5 ug/L	-	<0.5	<0.5	-
1,1,2-Trichloroethane	0.5 ug/L	-	<0.5	<0.5	-
Trichloroethylene	0.5 ug/L	-	<0.5	<0.5	-
Trichlorofluoromethane	1.0 ug/L	-	<1.0	<1.0	-
Vinyl chloride	0.5 ug/L	-	<0.5	<0.5	-
m,p-Xylenes	0.5 ug/L	-	<0.5	<0.5	-
o-Xylene	0.5 ug/L	-	<0.5	<0.5	-
Xylenes, total	0.5 ug/L	-	<0.5	<0.5	-
4-Bromofluorobenzene	Surrogate	-	117%	118%	-
Dibromofluoromethane	Surrogate	-	106%	106%	-
Toluene-d8	Surrogate	-	101%	99.8%	-

Hydrocarbons

F1 PHCs (C6-C10)	25 ug/L	-	<25	<25	-
F2 PHCs (C10-C16)	100 ug/L	<100	<100	<100	-
F3 PHCs (C16-C34)	100 ug/L	<100	<100	<100	-

Certificate of Analysis
 Client: Paterson Group Consulting Engineers
 Client PO: 25780

Report Date: 01-Feb-2019

Order Date: 29-Jan-2019

Project Description: PE3584

	Client ID:	MW3-18-GW2	MW4-18-GW1	MW8-18-GW1	MW9-18-GW2
	Sample Date:	01/28/2019 12:00	01/28/2019 12:00	01/28/2019 12:00	01/28/2019 12:00
	Sample ID:	1905179-01	1905179-02	1905179-03	1905179-04
	MDL/Units	Water	Water	Water	Water
F4 PHCs (C34-C50)	100 ug/L	<100	<100	<100	-

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	87.9%	-	-	-
Terphenyl-d14	Surrogate	92.6%	-	-	-

PCBs

PCBs, total	0.05 ug/L	<0.05	-	-	<0.05
Decachlorobiphenyl	Surrogate	91.1%	-	-	112%

Certificate of Analysis
Client: Paterson Group Consulting Engineers
Client PO: 25780

Report Date: 01-Feb-2019
Order Date: 29-Jan-2019
Project Description: PE3584

Client ID:	Trip Blank	-	-	-
Sample Date:	01/24/2019 12:00	-	-	-
Sample ID:	1905179-05	-	-	-
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 (dibromoethar	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	-	-	-

Certificate of Analysis
Client: Paterson Group Consulting Engineers
Client PO: 25780
Report Date: 01-Feb-2019
Order Date: 29-Jan-2019
Project Description: PE3584

	Client ID:	Trip Blank	-	-	-
	Sample Date:	01/24/2019 12:00	-	-	-
	Sample ID:	1905179-05	-	-	-
	MDL/Units	Water	-	-	-
1,1,1-Trichloroethane	0.5 ug/L	<0.5	-	-	-
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	118%	-	-	-
Dibromofluoromethane	Surrogate	106%	-	-	-
Toluene-d8	Surrogate	99.7%	-	-	-

Certificate of Analysis

Report Date: 01-Feb-2019

Client: Paterson Group Consulting Engineers

Order Date: 29-Jan-2019

Client PO: 25780

Project Description: PE3584

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L						
F2 PHCs (C10-C16)	ND	100	ug/L						
F3 PHCs (C16-C34)	ND	100	ug/L						
F4 PHCs (C34-C50)	ND	100	ug/L						
Metals									
Mercury	ND	0.1	ug/L						
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 (VI)	ND	10	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	0.440		ug/L		87.9	60-140			
Semi-Volatiles									
Acenaphthene	ND	0.05	ug/L						
Acenaphthylene	ND	0.05	ug/L						
Anthracene	ND	0.01	ug/L						
Benzo [a] anthracene	ND	0.01	ug/L						
Benzo [a] pyrene	ND	0.01	ug/L						
Benzo [b] fluoranthene	ND	0.05	ug/L						
Benzo [g,h,i] perylene	ND	0.05	ug/L						
Benzo [k] fluoranthene	ND	0.05	ug/L						
Chrysene	ND	0.05	ug/L						
Dibenzo [a,h] anthracene	ND	0.05	ug/L						
Fluoranthene	ND	0.01	ug/L						
Fluorene	ND	0.05	ug/L						
Indeno [1,2,3-cd] pyrene	ND	0.05	ug/L						
1-Methylnaphthalene	ND	0.05	ug/L						
2-Methylnaphthalene	ND	0.05	ug/L						
Methylnaphthalene (1&2)	ND	0.10	ug/L						
Naphthalene	ND	0.05	ug/L						
Phenanthrene	ND	0.05	ug/L						
Pyrene	ND	0.01	ug/L						
Surrogate: 2-Fluorobiphenyl	14.5		ug/L		72.7	50-140			
Surrogate: Terphenyl-d14	16.9		ug/L		84.3	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						

Certificate of Analysis

Report Date: 01-Feb-2019

Client: Paterson Group Consulting Engineers

Order Date: 29-Jan-2019

Client PO: 25780

Project Description: PE3584

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
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)	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						
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	90.0		ug/L		112	50-140			
Surrogate: Dibromofluoromethane	77.5		ug/L		96.9	50-140			
Surrogate: Toluene-d8	71.9		ug/L		89.8	50-140			

Certificate of Analysis
 Client: Paterson Group Consulting Engineers
 Client PO: 25780

Report Date: 01-Feb-2019
 Order Date: 29-Jan-2019
 Project Description: PE3584

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				30	
Metals									
Mercury	ND	0.1	ug/L	ND			0.0	20	
Antimony	ND	0.5	ug/L	ND			0.0	20	
Arsenic	ND	1	ug/L	ND			0.0	20	
Barium	22.3	1	ug/L	21.6			3.2	20	
Beryllium	ND	0.5	ug/L	ND			0.0	20	
Boron	839	10	ug/L	873			4.0	20	
Cadmium	ND	0.1	ug/L	ND			0.0	20	
Chromium (VI)	ND	10	ug/L	ND				20	
Chromium	ND	1	ug/L	ND			0.0	20	
Cobalt	ND	0.5	ug/L	ND			0.0	20	
Copper	1.21	0.5	ug/L	1.19			1.8	20	
Lead	0.10	0.1	ug/L	ND			0.0	20	
Molybdenum	0.58	0.5	ug/L	0.58			0.6	20	
Nickel	ND	1	ug/L	ND			0.0	20	
Selenium	ND	1	ug/L	ND			0.0	20	
Silver	ND	0.1	ug/L	ND			0.0	20	
Sodium	66900	200	ug/L	68900			2.9	20	
Thallium	ND	0.1	ug/L	ND			0.0	20	
Uranium	4.0	0.1	ug/L	4.0			0.6	20	
Vanadium	ND	0.5	ug/L	ND			0.0	20	
Zinc	ND	5	ug/L	ND			0.0	20	
Volatiles									
Acetone	ND	5.0	ug/L	ND				30	
Benzene	ND	0.5	ug/L	ND				30	
Bromodichloromethane	ND	0.5	ug/L	ND				30	
Bromoform	ND	0.5	ug/L	ND				30	
Bromomethane	ND	0.5	ug/L	ND				30	
Carbon Tetrachloride	ND	0.2	ug/L	ND				30	
Chlorobenzene	ND	0.5	ug/L	ND				30	
Chloroform	ND	0.5	ug/L	ND				30	
Dibromochloromethane	ND	0.5	ug/L	ND				30	
Dichlorodifluoromethane	ND	1.0	ug/L	ND				30	
1,2-Dichlorobenzene	ND	0.5	ug/L	ND				30	
1,3-Dichlorobenzene	ND	0.5	ug/L	ND				30	
1,4-Dichlorobenzene	ND	0.5	ug/L	ND				30	
1,1-Dichloroethane	ND	0.5	ug/L	ND				30	
1,2-Dichloroethane	ND	0.5	ug/L	ND				30	
1,1-Dichloroethylene	ND	0.5	ug/L	ND				30	
cis-1,2-Dichloroethylene	ND	0.5	ug/L	ND				30	
trans-1,2-Dichloroethylene	ND	0.5	ug/L	ND				30	
1,2-Dichloropropane	ND	0.5	ug/L	ND				30	
cis-1,3-Dichloropropylene	ND	0.5	ug/L	ND				30	
trans-1,3-Dichloropropylene	ND	0.5	ug/L	ND				30	
Ethylbenzene	ND	0.5	ug/L	ND				30	
Ethylene dibromide (dibromoethane)	ND	0.2	ug/L	ND				30	
Hexane	ND	1.0	ug/L	ND				30	
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L	ND				30	
Methyl Isobutyl Ketone	ND	5.0	ug/L	ND				30	
Methyl tert-butyl ether	ND	2.0	ug/L	ND				30	
Methylene Chloride	ND	5.0	ug/L	ND				30	
Styrene	ND	0.5	ug/L	ND				30	
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L	ND				30	
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L	ND				30	
Tetrachloroethylene	ND	0.5	ug/L	ND				30	
Toluene	ND	0.5	ug/L	ND				30	

Certificate of Analysis

Report Date: 01-Feb-2019

Client: Paterson Group Consulting Engineers

Order Date: 29-Jan-2019

Client PO: 25780

Project Description: PE3584

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	ND	0.5	ug/L	ND				30	
1,1,2-Trichloroethane	ND	0.5	ug/L	ND				30	
Trichloroethylene	ND	0.5	ug/L	ND				30	
Trichlorofluoromethane	ND	1.0	ug/L	ND				30	
Vinyl chloride	ND	0.5	ug/L	ND				30	
m,p-Xylenes	ND	0.5	ug/L	ND				30	
o-Xylene	ND	0.5	ug/L	ND				30	
Surrogate: 4-Bromofluorobenzene	91.7		ug/L		115	50-140			
Surrogate: Dibromofluoromethane	86.7		ug/L		108	50-140			
Surrogate: Toluene-d8	79.7		ug/L		99.6	50-140			

Certificate of Analysis
 Client: Paterson Group Consulting Engineers
 Client PO: 25780

Report Date: 01-Feb-2019
 Order Date: 29-Jan-2019
 Project Description: PE3584

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	1790	25	ug/L		89.6	68-117			
F2 PHCs (C10-C16)	1510	100	ug/L		94.5	60-140			
F3 PHCs (C16-C34)	3810	100	ug/L		97.1	60-140			
F4 PHCs (C34-C50)	1900	100	ug/L		76.4	60-140			
Metals									
Mercury	3.37	0.1	ug/L	ND	112	70-130			
Antimony	55.7		ug/L	ND	111	80-120			
Arsenic	61.9		ug/L	ND	123	80-120			QM-07
Barium	78.0		ug/L	21.6	113	80-120			
Beryllium	54.0		ug/L	ND	108	80-120			
Boron	50		ug/L		99.4	80-120			
Cadmium	52.9		ug/L	ND	106	80-120			
Chromium (VI)	185	10	ug/L	ND	92.5	70-130			
Chromium	62.9		ug/L	ND	125	80-120			QM-07
Cobalt	52.2		ug/L	ND	104	80-120			
Copper	56.4		ug/L	1.19	110	80-120			
Lead	48.1		ug/L	0.10	96.0	80-120			
Molybdenum	56.8		ug/L	0.58	113	80-120			
Nickel	56.2		ug/L	ND	111	80-120			
Selenium	53.8		ug/L	ND	107	80-120			
Silver	51.7		ug/L	ND	103	80-120			
Sodium	9680		ug/L		96.8	80-120			
Thallium	49.4		ug/L	ND	98.7	80-120			
Uranium	56.2		ug/L	4.0	104	80-120			
Vanadium	62.8		ug/L	ND	125	80-120			QM-07
Zinc	51		ug/L	ND	97.8	80-120			
PCBs									
PCBs, total	0.722	0.05	ug/L		72.2	60-140			
Surrogate: Decachlorobiphenyl	0.492		ug/L		98.3	60-140			
Semi-Volatiles									
Acenaphthene	4.98	0.05	ug/L		99.6	50-140			
Acenaphthylene	4.57	0.05	ug/L		91.4	50-140			
Anthracene	4.71	0.01	ug/L		94.3	50-140			
Benzo [a] anthracene	4.94	0.01	ug/L		98.7	50-140			
Benzo [a] pyrene	4.14	0.01	ug/L		82.8	50-140			
Benzo [b] fluoranthene	5.58	0.05	ug/L		112	50-140			
Benzo [g,h,i] perylene	5.33	0.05	ug/L		107	50-140			
Benzo [k] fluoranthene	4.06	0.05	ug/L		81.2	50-140			
Chrysene	6.95	0.05	ug/L		139	50-140			
Dibenzo [a,h] anthracene	4.57	0.05	ug/L		91.5	50-140			
Fluoranthene	4.60	0.01	ug/L		92.0	50-140			
Fluorene	4.64	0.05	ug/L		92.9	50-140			
Indeno [1,2,3-cd] pyrene	4.85	0.05	ug/L		96.9	50-140			
1-Methylnaphthalene	3.11	0.05	ug/L		62.2	50-140			
2-Methylnaphthalene	3.62	0.05	ug/L		72.5	50-140			
Naphthalene	4.44	0.05	ug/L		88.8	50-140			
Phenanthrene	4.30	0.05	ug/L		86.0	50-140			
Pyrene	4.58	0.01	ug/L		91.6	50-140			
Volatiles									
Acetone	55.2	5.0	ug/L		55.2	50-140			

Certificate of Analysis
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Client PO: 25780

Report Date: 01-Feb-2019
Order Date: 29-Jan-2019
Project Description: PE3584

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Benzene	37.9	0.5	ug/L		94.7	60-130			
Bromodichloromethane	35.9	0.5	ug/L		89.8	60-130			
Bromoform	36.3	0.5	ug/L		90.8	60-130			
Bromomethane	27.7	0.5	ug/L		69.2	50-140			
Carbon Tetrachloride	36.4	0.2	ug/L		91.1	60-130			
Chlorobenzene	34.2	0.5	ug/L		85.5	60-130			
Chloroform	36.0	0.5	ug/L		90.0	60-130			
Dibromochloromethane	35.3	0.5	ug/L		88.3	60-130			
Dichlorodifluoromethane	30.8	1.0	ug/L		76.9	50-140			
1,2-Dichlorobenzene	36.7	0.5	ug/L		91.7	60-130			
1,3-Dichlorobenzene	35.2	0.5	ug/L		88.0	60-130			
1,4-Dichlorobenzene	35.6	0.5	ug/L		89.0	60-130			
1,1-Dichloroethane	32.7	0.5	ug/L		81.8	60-130			
1,2-Dichloroethane	33.0	0.5	ug/L		82.6	60-130			
1,1-Dichloroethylene	35.0	0.5	ug/L		87.4	60-130			
cis-1,2-Dichloroethylene	37.1	0.5	ug/L		92.8	60-130			
trans-1,2-Dichloroethylene	36.4	0.5	ug/L		91.0	60-130			
1,2-Dichloropropane	36.7	0.5	ug/L		91.8	60-130			
cis-1,3-Dichloropropylene	38.0	0.5	ug/L		95.0	60-130			
trans-1,3-Dichloropropylene	43.7	0.5	ug/L		109	60-130			
Ethylbenzene	35.3	0.5	ug/L		88.2	60-130			
Ethylene dibromide (dibromoethane)	35.5	0.2	ug/L		88.8	60-130			
Hexane	38.2	1.0	ug/L		95.4	60-130			
Methyl Ethyl Ketone (2-Butanone)	88.9	5.0	ug/L		88.9	50-140			
Methyl Isobutyl Ketone	79.7	5.0	ug/L		79.7	50-140			
Methyl tert-butyl ether	92.8	2.0	ug/L		92.8	50-140			
Methylene Chloride	33.8	5.0	ug/L		84.4	60-130			
Styrene	35.1	0.5	ug/L		87.7	60-130			
1,1,1,2-Tetrachloroethane	33.6	0.5	ug/L		83.9	60-130			
1,1,2,2-Tetrachloroethane	33.7	0.5	ug/L		84.3	60-130			
Tetrachloroethylene	36.1	0.5	ug/L		90.3	60-130			
Toluene	33.8	0.5	ug/L		84.6	60-130			
1,1,1-Trichloroethane	36.8	0.5	ug/L		92.1	60-130			
1,1,2-Trichloroethane	39.7	0.5	ug/L		99.2	60-130			
Trichloroethylene	38.6	0.5	ug/L		96.5	60-130			
Trichlorofluoromethane	33.8	1.0	ug/L		84.4	60-130			
Vinyl chloride	25.8	0.5	ug/L		64.4	50-140			
m,p-Xylenes	69.5	0.5	ug/L		86.9	60-130			
o-Xylene	34.0	0.5	ug/L		85.1	60-130			

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Report Date: 01-Feb-2019
Order Date: 29-Jan-2019
Project Description: PE3584

Qualifier Notes:***QC Qualifiers :***

QM-07 : The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on other acceptable QC.

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.

CCME PHC additional information:

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



Client Name: <u>Paterson Group</u>	Project Reference: <u>PE3584</u>	Turnaround Time: ☐ 1 Day ☐ 3 Day ☐ 2 Day ☒ Regular Date Required: _____
Contact Name: <u>Lauren Kratz</u>	Quote # _____	
Address: <u>154 Colonnade Rd</u>	PO # <u>25780</u>	
Telephone: <u>613-226-7381</u>	Email Address: <u>lkratz@patersongroup.ca</u>	

Criteria: ☒ O. Reg. 153/04 (As Amended) Table 1 RSC Filing ☐ O. Reg. 558/00 ☐ PWQO ☐ CCME ☐ SUB (Storm) ☐ SUB (Sanitary) Municipality: _____ ☐ Other: _____

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)								Required Analyses																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
Paracel Order Number: 1905179		Matrix	Air Volume	# of Containers	Sample Taken		PHCS F1-F4+BTX	VOCs	PAHs	Metals by ICP	Hg	CrVI	B (HWS)	PCBs																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				

Comments: <u>DHC done Jan 18/19 #1 No VOC vials received.</u> <u>IDMW4-18-GW1 / date Jan 21/19 vials only, m7 Report as per 28/19</u>		Method of Delivery: _____	
Relinquished By (Sign): <u>[Signature]</u>	Received by Driver/Depot: <u>[Signature]</u>	Received at Lab: <u>[Signature]</u>	Verified By: <u>[Signature]</u>
Relinquished By (Print): <u>Mark St Pierre</u>	Date/Time: <u>29/01/19 2:00</u>	Date/Time: <u>29/1/19 4:50p</u>	Date/Time: <u>29/1/19 9:55p</u>
Date/Time: _____	Temperature: <u>7.4</u>	Temperature: <u>14.2</u>	pH Verified By: _____

Certificate of Analysis

Paterson Group Consulting Engineers

154 Colonnade Road South
Nepean, ON K2E 7J5
Attn: Lauren Kratz

Client PO: 25782
Project: PE3584
Custody: 46386

Report Date: 8-Feb-2019
Order Date: 5-Feb-2019

Order #: 1906219

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

Paracel ID
1906219-01

Client ID
MW7-18-GW1

Approved By:



Dale Robertson, BSc
Laboratory Director

Certificate of Analysis
Client: Paterson Group Consulting Engineers
Client PO: 25782

Report Date: 08-Feb-2019
Order Date: 5-Feb-2019
Project Description: PE3584

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Chromium, hexavalent - water	MOE E3056 - colourimetric	7-Feb-19	7-Feb-19
Mercury by CVAA	EPA 245.2 - Cold Vapour AA	6-Feb-19	6-Feb-19
Metals, ICP-MS	EPA 200.8 - ICP-MS	6-Feb-19	6-Feb-19
PCBs, total	EPA 608 - GC-ECD	6-Feb-19	6-Feb-19
PHC F1	CWS Tier 1 - P&T GC-FID	6-Feb-19	7-Feb-19
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	7-Feb-19	8-Feb-19
REG 153: PAHs by GC-MS	EPA 625 - GC-MS, extraction	5-Feb-19	6-Feb-19
REG 153: VOCs by P&T GC/MS	EPA 624 - P&T GC-MS	6-Feb-19	7-Feb-19

Certificate of Analysis
 Client: Paterson Group Consulting Engineers
 Client PO: 25782

Report Date: 08-Feb-2019

Order Date: 5-Feb-2019

Project Description: PE3584

Client ID:	MW7-18-GW1	-	-	-
Sample Date:	02/04/2019 12:00	-	-	-
Sample ID:	1906219-01	-	-	-
MDL/Units	Water	-	-	-

Metals

Mercury	0.1 ug/L	<0.1	-	-	-
Antimony	0.5 ug/L	0.6	-	-	-
Arsenic	1 ug/L	4	-	-	-
Barium	1 ug/L	147	-	-	-
Beryllium	0.5 ug/L	<0.5	-	-	-
Boron	10 ug/L	123	-	-	-
Cadmium	0.1 ug/L	<0.1	-	-	-
Chromium	1 ug/L	<1	-	-	-
Chromium (VI)	10 ug/L	<10	-	-	-
Cobalt	0.5 ug/L	0.5	-	-	-
Copper	0.5 ug/L	<0.5	-	-	-
Lead	0.1 ug/L	<0.1	-	-	-
Molybdenum	0.5 ug/L	23.4	-	-	-
Nickel	1 ug/L	3	-	-	-
Selenium	1 ug/L	<1	-	-	-
Silver	0.1 ug/L	<0.1	-	-	-
Sodium	200 ug/L	635000	-	-	-
Thallium	0.1 ug/L	<0.1	-	-	-
Uranium	0.1 ug/L	2.8	-	-	-
Vanadium	0.5 ug/L	0.7	-	-	-
Zinc	5 ug/L	6	-	-	-

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	-	-	-

Certificate of Analysis
 Client: Paterson Group Consulting Engineers
 Client PO: 25782

Report Date: 08-Feb-2019
 Order Date: 5-Feb-2019
 Project Description: PE3584

	MDL/Units	Client ID:	MW7-18-GW1	-	-	-
		Sample Date:	02/04/2019 12:00	-	-	-
		Sample ID:	1906219-01	-	-	-
			Water	-	-	-
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)	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	-	-	-
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		101%	-	-	-
Dibromofluoromethane	Surrogate		115%	-	-	-
Toluene-d8	Surrogate		101%	-	-	-

Hydrocarbons

F1 PHCs (C6-C10)	25 ug/L	<25	-	-	-
F2 PHCs (C10-C16)	100 ug/L	<100	-	-	-
F3 PHCs (C16-C34)	100 ug/L	<100	-	-	-

Certificate of Analysis
 Client: Paterson Group Consulting Engineers
 Client PO: 25782

Report Date: 08-Feb-2019

Order Date: 5-Feb-2019

Project Description: PE3584

	Client ID:	MW7-18-GW1	-	-	-
	Sample Date:	02/04/2019 12:00	-	-	-
	Sample ID:	1906219-01	-	-	-
	MDL/Units	Water	-	-	-
F4 PHCs (C34-C50)	100 ug/L	<100	-	-	-

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	0.08	-	-	-
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	0.07	-	-	-
2-Fluorobiphenyl	Surrogate	81.8%	-	-	-
Terphenyl-d14	Surrogate	95.6%	-	-	-

PCBs

PCBs, total	0.05 ug/L	<0.05	-	-	-
Decachlorobiphenyl	Surrogate	84.1%	-	-	-

Certificate of Analysis

Report Date: 08-Feb-2019

Client: Paterson Group Consulting Engineers

Order Date: 5-Feb-2019

Client PO: 25782

Project Description: PE3584

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L						
F2 PHCs (C10-C16)	ND	100	ug/L						
F3 PHCs (C16-C34)	ND	100	ug/L						
F4 PHCs (C34-C50)	ND	100	ug/L						
Metals									
Mercury	ND	0.1	ug/L						
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 (VI)	ND	10	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	0.448		ug/L		89.6	60-140			
Semi-Volatiles									
Acenaphthene	ND	0.05	ug/L						
Acenaphthylene	ND	0.05	ug/L						
Anthracene	ND	0.01	ug/L						
Benzo [a] anthracene	ND	0.01	ug/L						
Benzo [a] pyrene	ND	0.01	ug/L						
Benzo [b] fluoranthene	ND	0.05	ug/L						
Benzo [g,h,i] perylene	ND	0.05	ug/L						
Benzo [k] fluoranthene	ND	0.05	ug/L						
Chrysene	ND	0.05	ug/L						
Dibenzo [a,h] anthracene	ND	0.05	ug/L						
Fluoranthene	ND	0.01	ug/L						
Fluorene	ND	0.05	ug/L						
Indeno [1,2,3-cd] pyrene	ND	0.05	ug/L						
1-Methylnaphthalene	ND	0.05	ug/L						
2-Methylnaphthalene	ND	0.05	ug/L						
Methylnaphthalene (1&2)	ND	0.10	ug/L						
Naphthalene	ND	0.05	ug/L						
Phenanthrene	ND	0.05	ug/L						
Pyrene	ND	0.01	ug/L						
Surrogate: 2-Fluorobiphenyl	17.1		ug/L		85.4	50-140			
Surrogate: Terphenyl-d14	20.7		ug/L		103	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						

Certificate of Analysis

Report Date: 08-Feb-2019

Client: Paterson Group Consulting Engineers

Order Date: 5-Feb-2019

Client PO: 25782

Project Description: PE3584

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
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)	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						
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	86.0		ug/L		108	50-140			
Surrogate: Dibromofluoromethane	89.0		ug/L		111	50-140			
Surrogate: Toluene-d8	77.3		ug/L		96.6	50-140			

Certificate of Analysis
Client: Paterson Group Consulting Engineers
Client PO: 25782

Report Date: 08-Feb-2019

Order Date: 5-Feb-2019

Project Description: PE3584

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				30	
Metals									
Mercury	ND	0.1	ug/L	ND			0.0	20	
Antimony	0.63	0.5	ug/L	ND			0.0	20	
Arsenic	ND	1	ug/L	ND			0.0	20	
Barium	28.6	1	ug/L	23.5			19.4	20	
Beryllium	ND	0.5	ug/L	ND			0.0	20	
Boron	22	10	ug/L	23			5.2	20	
Cadmium	ND	0.1	ug/L	ND			0.0	20	
Chromium (VI)	ND	10	ug/L	ND				20	
Chromium	ND	1	ug/L	ND			0.0	20	
Cobalt	ND	0.5	ug/L	ND			0.0	20	
Copper	38.4	0.5	ug/L	38.2			0.4	20	
Lead	1.27	0.1	ug/L	0.67			61.7	20	QR-01
Molybdenum	1.26	0.5	ug/L	1.18			6.5	20	
Nickel	1.9	1	ug/L	1.1			47.9	20	QR-01
Selenium	ND	1	ug/L	ND			0.0	20	
Silver	ND	0.1	ug/L	ND			0.0	20	
Sodium	15600	200	ug/L	15600			0.1	20	
Thallium	ND	0.1	ug/L	ND			0.0	20	
Uranium	0.2	0.1	ug/L	0.1			22.8	20	QR-01
Vanadium	ND	0.5	ug/L	ND			0.0	20	
Zinc	12	5	ug/L	12			4.7	20	
Volatiles									
Acetone	ND	5.0	ug/L	ND				30	
Benzene	ND	0.5	ug/L	ND				30	
Bromodichloromethane	ND	0.5	ug/L	ND				30	
Bromoform	ND	0.5	ug/L	ND				30	
Bromomethane	ND	0.5	ug/L	ND				30	
Carbon Tetrachloride	ND	0.2	ug/L	ND				30	
Chlorobenzene	ND	0.5	ug/L	ND				30	
Chloroform	ND	0.5	ug/L	ND				30	
Dibromochloromethane	ND	0.5	ug/L	ND				30	
Dichlorodifluoromethane	ND	1.0	ug/L	ND				30	
1,2-Dichlorobenzene	ND	0.5	ug/L	ND				30	
1,3-Dichlorobenzene	ND	0.5	ug/L	ND				30	
1,4-Dichlorobenzene	ND	0.5	ug/L	ND				30	
1,1-Dichloroethane	ND	0.5	ug/L	ND				30	
1,2-Dichloroethane	ND	0.5	ug/L	ND				30	
1,1-Dichloroethylene	ND	0.5	ug/L	ND				30	
cis-1,2-Dichloroethylene	ND	0.5	ug/L	ND				30	
trans-1,2-Dichloroethylene	ND	0.5	ug/L	ND				30	
1,2-Dichloropropane	ND	0.5	ug/L	ND				30	
cis-1,3-Dichloropropylene	ND	0.5	ug/L	ND				30	
trans-1,3-Dichloropropylene	ND	0.5	ug/L	ND				30	
Ethylbenzene	ND	0.5	ug/L	ND				30	
Ethylene dibromide (dibromoethane)	ND	0.2	ug/L	ND				30	
Hexane	ND	1.0	ug/L	ND				30	
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L	ND				30	
Methyl Isobutyl Ketone	ND	5.0	ug/L	ND				30	
Methyl tert-butyl ether	ND	2.0	ug/L	ND				30	
Methylene Chloride	ND	5.0	ug/L	ND				30	
Styrene	ND	0.5	ug/L	ND				30	
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L	ND				30	
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L	ND				30	
Tetrachloroethylene	ND	0.5	ug/L	ND				30	
Toluene	ND	0.5	ug/L	ND				30	

Certificate of Analysis

Report Date: 08-Feb-2019

Client: Paterson Group Consulting Engineers

Order Date: 5-Feb-2019

Client PO: 25782

Project Description: PE3584

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	ND	0.5	ug/L	ND				30	
1,1,2-Trichloroethane	ND	0.5	ug/L	ND				30	
Trichloroethylene	ND	0.5	ug/L	ND				30	
Trichlorofluoromethane	ND	1.0	ug/L	ND				30	
Vinyl chloride	ND	0.5	ug/L	ND				30	
m,p-Xylenes	ND	0.5	ug/L	ND				30	
o-Xylene	ND	0.5	ug/L	ND				30	
Surrogate: 4-Bromofluorobenzene	87.3		ug/L		109	50-140			
Surrogate: Dibromofluoromethane	100		ug/L		125	50-140			
Surrogate: Toluene-d8	79.5		ug/L		99.4	50-140			

Certificate of Analysis
Client: Paterson Group Consulting Engineers
Client PO: 25782

Report Date: 08-Feb-2019

Order Date: 5-Feb-2019

Project Description: PE3584

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	1880	25	ug/L		93.9	68-117			
F2 PHCs (C10-C16)	1280	100	ug/L		80.2	60-140			
F3 PHCs (C16-C34)	3280	100	ug/L		83.7	60-140			
F4 PHCs (C34-C50)	2070	100	ug/L		83.7	60-140			
Metals									
Mercury	3.04	0.1	ug/L	ND	101	70-130			
Antimony	46.8		ug/L	ND	93.1	80-120			
Arsenic	47.2		ug/L	ND	93.8	80-120			
Barium	75.4		ug/L	23.5	104	80-120			
Beryllium	52.4		ug/L	ND	105	80-120			
Boron	67		ug/L	23	86.2	80-120			
Cadmium	47.0		ug/L	ND	94.0	80-120			
Chromium (VI)	204	10	ug/L	ND	102	70-130			
Chromium	57.8		ug/L	ND	115	80-120			
Cobalt	51.0		ug/L	ND	102	80-120			
Copper	78.9		ug/L	38.2	81.3	80-120			
Lead	47.9		ug/L	0.67	94.5	80-120			
Molybdenum	53.9		ug/L	1.18	105	80-120			
Nickel	55.6		ug/L	1.1	109	80-120			
Selenium	35.0		ug/L	ND	69.8	80-120			QM-07
Silver	47.7		ug/L	ND	95.3	80-120			
Sodium	24900		ug/L	15600	93.6	80-120			
Thallium	47.9		ug/L	ND	95.7	80-120			
Uranium	48.3		ug/L	0.1	96.4	80-120			
Vanadium	57.4		ug/L	ND	114	80-120			
Zinc	53		ug/L	12	82.7	80-120			
PCBs									
PCBs, total	1.11	0.05	ug/L		111	60-140			
Surrogate: Decachlorobiphenyl	0.356		ug/L		71.1	60-140			
Semi-Volatiles									
Acenaphthene	4.89	0.05	ug/L		97.8	50-140			
Acenaphthylene	4.49	0.05	ug/L		89.9	50-140			
Anthracene	4.42	0.01	ug/L		88.5	50-140			
Benzo [a] anthracene	4.52	0.01	ug/L		90.5	50-140			
Benzo [a] pyrene	4.17	0.01	ug/L		83.3	50-140			
Benzo [b] fluoranthene	5.90	0.05	ug/L		118	50-140			
Benzo [g,h,i] perylene	4.11	0.05	ug/L		82.2	50-140			
Benzo [k] fluoranthene	5.95	0.05	ug/L		119	50-140			
Chrysene	5.09	0.05	ug/L		102	50-140			
Dibenzo [a,h] anthracene	3.76	0.05	ug/L		75.2	50-140			
Fluoranthene	4.57	0.01	ug/L		91.4	50-140			
Fluorene	4.59	0.05	ug/L		91.8	50-140			
Indeno [1,2,3-cd] pyrene	3.84	0.05	ug/L		76.8	50-140			
1-Methylnaphthalene	4.11	0.05	ug/L		82.3	50-140			
2-Methylnaphthalene	4.62	0.05	ug/L		92.4	50-140			
Naphthalene	4.48	0.05	ug/L		89.5	50-140			
Phenanthrene	4.17	0.05	ug/L		83.3	50-140			
Pyrene	4.56	0.01	ug/L		91.3	50-140			
Volatiles									
Acetone	68.3	5.0	ug/L		68.3	50-140			

Certificate of Analysis
 Client: Paterson Group Consulting Engineers
 Client PO: 25782

Report Date: 08-Feb-2019

Order Date: 5-Feb-2019

Project Description: PE3584

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Benzene	37.3	0.5	ug/L		93.3	60-130			
Bromodichloromethane	36.3	0.5	ug/L		90.8	60-130			
Bromoform	29.7	0.5	ug/L		74.3	60-130			
Bromomethane	38.7	0.5	ug/L		96.8	50-140			
Carbon Tetrachloride	36.3	0.2	ug/L		90.8	60-130			
Chlorobenzene	32.5	0.5	ug/L		81.2	60-130			
Chloroform	31.4	0.5	ug/L		78.6	60-130			
Dibromochloromethane	48.8	0.5	ug/L		122	60-130			
Dichlorodifluoromethane	49.0	1.0	ug/L		123	50-140			
1,2-Dichlorobenzene	29.5	0.5	ug/L		73.8	60-130			
1,3-Dichlorobenzene	29.2	0.5	ug/L		73.1	60-130			
1,4-Dichlorobenzene	28.2	0.5	ug/L		70.6	60-130			
1,1-Dichloroethane	31.4	0.5	ug/L		78.4	60-130			
1,2-Dichloroethane	31.2	0.5	ug/L		78.0	60-130			
1,1-Dichloroethylene	35.3	0.5	ug/L		88.3	60-130			
cis-1,2-Dichloroethylene	29.4	0.5	ug/L		73.6	60-130			
trans-1,2-Dichloroethylene	33.7	0.5	ug/L		84.2	60-130			
1,2-Dichloropropane	33.6	0.5	ug/L		83.9	60-130			
cis-1,3-Dichloropropylene	37.0	0.5	ug/L		92.6	60-130			
trans-1,3-Dichloropropylene	31.5	0.5	ug/L		78.8	60-130			
Ethylbenzene	31.3	0.5	ug/L		78.3	60-130			
Ethylene dibromide (dibromoethane)	29.6	0.2	ug/L		74.0	60-130			
Hexane	41.8	1.0	ug/L		104	60-130			
Methyl Ethyl Ketone (2-Butanone)	70.8	5.0	ug/L		70.8	50-140			
Methyl Isobutyl Ketone	91.4	5.0	ug/L		91.4	50-140			
Methyl tert-butyl ether	77.8	2.0	ug/L		77.8	50-140			
Methylene Chloride	38.3	5.0	ug/L		95.7	60-130			
Styrene	29.7	0.5	ug/L		74.2	60-130			
1,1,1,2-Tetrachloroethane	46.9	0.5	ug/L		117	60-130			
1,1,2,2-Tetrachloroethane	29.7	0.5	ug/L		74.3	60-130			
Tetrachloroethylene	31.3	0.5	ug/L		78.3	60-130			
Toluene	32.6	0.5	ug/L		81.4	60-130			
1,1,1-Trichloroethane	32.7	0.5	ug/L		81.8	60-130			
1,1,2-Trichloroethane	32.8	0.5	ug/L		82.0	60-130			
Trichloroethylene	33.4	0.5	ug/L		83.6	60-130			
Trichlorofluoromethane	38.6	1.0	ug/L		96.6	60-130			
Vinyl chloride	38.1	0.5	ug/L		95.2	50-140			
m,p-Xylenes	64.9	0.5	ug/L		81.2	60-130			
o-Xylene	35.4	0.5	ug/L		88.6	60-130			

Certificate of Analysis
Client: Paterson Group Consulting Engineers
Client PO: 25782

Report Date: 08-Feb-2019

Order Date: 5-Feb-2019

Project Description: PE3584

Qualifier Notes:***QC Qualifiers :***

QM-07 : The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on other acceptable QC.

QR-01 : Duplicate RPD is high, however, the sample result is less than 10x the MDL.

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.

CCME PHC additional information:

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



Client Name: <u>Peterson Group</u>	Project Reference: <u>PE3584</u>	Turnaround Time: ☐ 1 Day ☐ 3 Day ☐ 2 Day ☒ Regular Date Required: _____
Contact Name: <u>Lauren Kratz</u>	Quote #	
Address: <u>154 Colonnade Rd</u>	PO # <u>25782</u>	
Telephone: <u>613-226-7381</u>	Email Address: <u>lkratz@petersongroup.ca</u>	

Criteria: ☒ Reg. 153/04 (As Amended) Table 2/4 ☐ RSC Filing ☐ O Reg. 558/00 ☐ PWQO ☐ CCME ☐ SUB (Storm) ☐ SUB (Sanitary) Municipality: _____ ☐ Other: _____

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

Paracel Order Number:			Required Analyses									
Sample ID/Location Name			Matrix	Air Volume	# of Containers	Sample Taken		PHC/F-Fu	VOCs	Metals + Hg + Pb	PAH	PCBs
						Date	Time					
1	MW7-18-GW1		GW		8	Feb 4 2019	pm	X	X	X	X	X
2												
3												
4												
5												
6												
7												
8												
9												
10												

Comments: _____ Method of Delivery: Swift

Relinquished By (Sign): <u>LK</u>	Received by (Driver/Depot): <u>1471</u>	Received at Lab: <u>March 19 3:58pm</u>	Verified By: <u>[Signature]</u>
Relinquished By (Print): <u>Lauren Kratz</u>	Date/Time: <u>Feb 5 2019</u>	Date/Time: <u>Feb 5 2019 3:58pm</u>	Date/Time: <u>02/05/19 4:25pm</u>
Date/Time: <u>Feb 5 2019</u>	Temperature: _____ °C	Temperature: <u>13.2</u> °C	pH Verified/By: <u>[Signature]</u>

Certificate of Analysis

Paterson Group Consulting Engineers

154 Colonnade Road South
Nepean, ON K2E 7J5
Attn: Lauren Kratz

Client PO: 25229
Project: PE3584
Custody: 121133

Report Date: 3-May-2019
Order Date: 26-Apr-2019

Order #: 1917683

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

Paracel ID	Client ID
1917683-01	MW1-18-GW2
1917683-02	MW2-18-GW3
1917683-03	MW3-18-GW3
1917683-04	MW4-18-GW2
1917683-05	MW5-18-GW2
1917683-06	MW6-18-GW2
1917683-07	MW8-18-GW2
1917683-08	MW11-18-GW2
1917683-09	Dup-PR2
1917683-10	Trip Blank

Approved By:



Tim McCooeye
Senior Advisor

Certificate of Analysis
Client: Paterson Group Consulting Engineers
Client PO: 25229

Report Date: 03-May-2019
 Order Date: 26-Apr-2019
Project Description: PE3584

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Anions	EPA 300.1 - IC	1-May-19	1-May-19
Chromium, hexavalent - water	MOE E3056 - colourimetric	1-May-19	29-Apr-19
Mercury by CVAA	EPA 245.2 - Cold Vapour AA	29-Apr-19	30-Apr-19
Metals, ICP-MS	EPA 200.8 - ICP-MS	30-Apr-19	30-Apr-19
PCBs, total	EPA 608 - GC-ECD	2-May-19	3-May-19
PHC F1	CWS Tier 1 - P&T GC-FID	29-Apr-19	30-Apr-19
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	30-Apr-19	1-May-19
REG 153: PAHs by GC-MS	EPA 625 - GC-MS, extraction	1-May-19	1-May-19
REG 153: VOCs by P&T GC/MS	EPA 624 - P&T GC-MS	29-Apr-19	30-Apr-19

Certificate of Analysis
Client: Paterson Group Consulting Engineers
Client PO: 25229

Report Date: 03-May-2019

Order Date: 26-Apr-2019

Project Description: PE3584

Client ID:	MW1-18-GW2	MW2-18-GW3	MW3-18-GW3	MW4-18-GW2
Sample Date:	04/25/2019 09:00	04/25/2019 09:00	04/25/2019 09:00	04/25/2019 09:00
Sample ID:	1917683-01	1917683-02	1917683-03	1917683-04
MDL/Units	Water	Water	Water	Water

Metals

Mercury	0.1 ug/L	<0.1	<0.1	<0.1	-
Antimony	0.5 ug/L	<0.5	<0.5	-	-
Arsenic	1 ug/L	1	<1	-	-
Barium	1 ug/L	142	503	-	-
Beryllium	0.5 ug/L	<0.5	<0.5	-	-
Boron	10 ug/L	45	65	-	-
Cadmium	0.1 ug/L	<0.1	<0.1	-	-
Chromium	1 ug/L	<1	<1	-	-
Chromium (VI)	10 ug/L	<10	<10	<10	-
Cobalt	0.5 ug/L	<0.5	0.7	-	-
Copper	0.5 ug/L	1.3	<0.5	-	-
Lead	0.1 ug/L	<0.1	<0.1	-	-
Molybdenum	0.5 ug/L	8.2	2.9	-	-
Nickel	1 ug/L	2	2	-	-
Selenium	1 ug/L	<1	<1	-	-
Silver	0.1 ug/L	<0.1	<0.1	-	-
Sodium	200 ug/L	141000	174000	-	-
Thallium	0.1 ug/L	<0.1	<0.1	-	-
Uranium	0.1 ug/L	0.8	0.5	-	-
Vanadium	0.5 ug/L	77.4	0.6	-	-
Zinc	5 ug/L	<5	<5	-	-

Volatiles

Acetone	5.0 ug/L	<5.0	<5.0	<5.0	<5.0
Benzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Bromoform	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Bromomethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Carbon Tetrachloride	0.2 ug/L	<0.2	<0.2	<0.2	<0.2
Chlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Chloroform	0.5 ug/L	<0.5	<0.5	1.6	0.6
Dibromochloromethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Dichlorodifluoromethane	1.0 ug/L	<1.0	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5

Certificate of Analysis

Report Date: 03-May-2019

Client: Paterson Group Consulting Engineers

Order Date: 26-Apr-2019

Client PO: 25229

Project Description: PE3584

	Client ID: Sample Date: Sample ID:	MW1-18-GW2 04/25/2019 09:00 1917683-01 Water	MW2-18-GW3 04/25/2019 09:00 1917683-02 Water	MW3-18-GW3 04/25/2019 09:00 1917683-03 Water	MW4-18-GW2 04/25/2019 09:00 1917683-04 Water
	MDL/Units				
1,1-Dichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
cis-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
trans-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,3-Dichloropropene, total	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Ethylene dibromide (dibromoethane)	0.2 ug/L	<0.2	<0.2	<0.2	<0.2
Hexane	1.0 ug/L	<1.0	<1.0	<1.0	<1.0
Methyl Ethyl Ketone (2-Butanone)	5.0 ug/L	<5.0	<5.0	<5.0	<5.0
Methyl Isobutyl Ketone	5.0 ug/L	<5.0	<5.0	<5.0	<5.0
Methyl tert-butyl ether	2.0 ug/L	<2.0	<2.0	<2.0	<2.0
Methylene Chloride	5.0 ug/L	<5.0	<5.0	<5.0	<5.0
Styrene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,1,1,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Tetrachloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Toluene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Trichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane	1.0 ug/L	<1.0	<1.0	<1.0	<1.0
Vinyl chloride	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
m,p-Xylenes	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
o-Xylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Xylenes, total	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
4-Bromofluorobenzene	Surrogate	108%	104%	101%	97.1%
Dibromofluoromethane	Surrogate	131%	118%	131%	138%
Toluene-d8	Surrogate	95.2%	95.0%	92.9%	97.3%

Hydrocarbons

F1 PHCs (C6-C10)	25 ug/L	<25	<25	<25	<25
F2 PHCs (C10-C16)	100 ug/L	<100	<100	-	-
F3 PHCs (C16-C34)	100 ug/L	<100	<100	-	-

Certificate of Analysis

Report Date: 03-May-2019

Client: Paterson Group Consulting Engineers

Order Date: 26-Apr-2019

Client PO: 25229

Project Description: PE3584

	Client ID:	MW1-18-GW2	MW2-18-GW3	MW3-18-GW3	MW4-18-GW2
	Sample Date:	04/25/2019 09:00	04/25/2019 09:00	04/25/2019 09:00	04/25/2019 09:00
	Sample ID:	1917683-01	1917683-02	1917683-03	1917683-04
	MDL/Units	Water	Water	Water	Water
F4 PHCs (C34-C50)	100 ug/L	<100	<100	-	-

Semi-Volatiles

Acenaphthene	0.05 ug/L	<0.05	<0.05	-	-
Acenaphthylene	0.05 ug/L	<0.05	<0.05	-	-
Anthracene	0.01 ug/L	<0.01	<0.01	-	-
Benzo [a] anthracene	0.01 ug/L	<0.01	<0.01	-	-
Benzo [a] pyrene	0.01 ug/L	<0.01	<0.01	-	-
Benzo [b] fluoranthene	0.05 ug/L	<0.05	<0.05	-	-
Benzo [g,h,i] perylene	0.05 ug/L	<0.05	<0.05	-	-
Benzo [k] fluoranthene	0.05 ug/L	<0.05	<0.05	-	-
Chrysene	0.05 ug/L	<0.05	<0.05	-	-
Dibenzo [a,h] anthracene	0.05 ug/L	<0.05	<0.05	-	-
Fluoranthene	0.01 ug/L	<0.01	<0.01	-	-
Fluorene	0.05 ug/L	<0.05	<0.05	-	-
Indeno [1,2,3-cd] pyrene	0.05 ug/L	<0.05	<0.05	-	-
1-Methylnaphthalene	0.05 ug/L	<0.05	<0.05	-	-
2-Methylnaphthalene	0.05 ug/L	<0.05	<0.05	-	-
Methylnaphthalene (1&2)	0.10 ug/L	<0.10	<0.10	-	-
Naphthalene	0.05 ug/L	<0.05	<0.05	-	-
Phenanthrene	0.05 ug/L	<0.05	<0.05	-	-
Pyrene	0.01 ug/L	<0.01	<0.01	-	-
2-Fluorobiphenyl	Surrogate	76.5%	70.1%	-	-
Terphenyl-d14	Surrogate	120%	120%	-	-

PCBs

PCBs, total	0.05 ug/L	<0.05	<0.05	-	-
Decachlorobiphenyl	Surrogate	93.4%	95.0%	-	-

Certificate of Analysis
 Client: Paterson Group Consulting Engineers
 Client PO: 25229

Report Date: 03-May-2019

Order Date: 26-Apr-2019

Project Description: PE3584

	MDL/Units	Client ID:	MW5-18-GW2	MW6-18-GW2	MW8-18-GW2	MW11-18-GW2
		Sample Date:	04/25/2019 09:00	04/25/2019 09:00	04/25/2019 09:00	04/25/2019 09:00
		Sample ID:	1917683-05	1917683-06	1917683-07	1917683-08
			Water	Water	Water	Water
Anions						
Chloride	1 mg/L		-	-	1600	-
Metals						
Mercury	0.1 ug/L		<0.1	<0.1	<0.1	<0.1
Antimony	0.5 ug/L		0.6	<0.5	-	-
Arsenic	1 ug/L		3	<1	-	-
Barium	1 ug/L		553	199	-	-
Beryllium	0.5 ug/L		<0.5	<0.5	-	-
Boron	10 ug/L		57	31	-	-
Cadmium	0.1 ug/L		<0.1	<0.1	-	-
Chromium	1 ug/L		<1	<1	-	-
Chromium (VI)	10 ug/L		<10	<10	<10	<10
Cobalt	0.5 ug/L		1.3	<0.5	-	-
Copper	0.5 ug/L		1.0	<0.5	-	-
Lead	0.1 ug/L		<0.1	<0.1	-	-
Molybdenum	0.5 ug/L		14.7	1.1	-	-
Nickel	1 ug/L		8	<1	-	-
Selenium	1 ug/L		<1	<1	-	-
Silver	0.1 ug/L		<0.1	<0.1	-	-
Sodium	200 ug/L		155000	37000	-	-
Thallium	0.1 ug/L		<0.1	<0.1	-	-
Uranium	0.1 ug/L		0.7	0.5	-	-
Vanadium	0.5 ug/L		5.4	0.7	-	-
Zinc	5 ug/L		<5	<5	-	-
Volatiles						
Acetone	5.0 ug/L		<5.0	<5.0	<5.0	<5.0
Benzene	0.5 ug/L		<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	0.5 ug/L		<0.5	<0.5	<0.5	<0.5
Bromoform	0.5 ug/L		<0.5	<0.5	<0.5	<0.5
Bromomethane	0.5 ug/L		<0.5	<0.5	<0.5	<0.5
Carbon Tetrachloride	0.2 ug/L		<0.2	<0.2	<0.2	<0.2
Chlorobenzene	0.5 ug/L		<0.5	<0.5	<0.5	<0.5
Chloroform	0.5 ug/L		<0.5	<0.5	0.5	<0.5
Dibromochloromethane	0.5 ug/L		<0.5	<0.5	<0.5	<0.5
Dichlorodifluoromethane	1.0 ug/L		<1.0	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	0.5 ug/L		<0.5	<0.5	<0.5	<0.5

Certificate of Analysis

Report Date: 03-May-2019

Client: Paterson Group Consulting Engineers

Order Date: 26-Apr-2019

Client PO: 25229

Project Description: PE3584

	Client ID:	MW5-18-GW2	MW6-18-GW2	MW8-18-GW2	MW11-18-GW2
	Sample Date:	04/25/2019 09:00	04/25/2019 09:00	04/25/2019 09:00	04/25/2019 09:00
	Sample ID:	1917683-05	1917683-06	1917683-07	1917683-08
	MDL/Units	Water	Water	Water	Water
1,3-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
cis-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
trans-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,3-Dichloropropene, total	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Ethylene dibromide (dibromoethane)	0.2 ug/L	<0.2	<0.2	<0.2	<0.2
Hexane	1.0 ug/L	<1.0	<1.0	<1.0	<1.0
Methyl Ethyl Ketone (2-Butanone)	5.0 ug/L	<5.0	<5.0	<5.0	<5.0
Methyl Isobutyl Ketone	5.0 ug/L	<5.0	<5.0	<5.0	<5.0
Methyl tert-butyl ether	2.0 ug/L	<2.0	<2.0	<2.0	<2.0
Methylene Chloride	5.0 ug/L	<5.0	<5.0	<5.0	<5.0
Styrene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,1,1,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,1,1,2,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Tetrachloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Toluene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Trichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane	1.0 ug/L	<1.0	<1.0	<1.0	<1.0
Vinyl chloride	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
m,p-Xylenes	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
o-Xylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
Xylenes, total	0.5 ug/L	<0.5	<0.5	<0.5	<0.5
4-Bromofluorobenzene	Surrogate	104%	107%	106%	92.7%
Dibromofluoromethane	Surrogate	134%	113%	138%	110%
Toluene-d8	Surrogate	94.6%	94.4%	95.2%	92.0%

Hydrocarbons

Certificate of Analysis

Report Date: 03-May-2019

Client: Paterson Group Consulting Engineers

Order Date: 26-Apr-2019

Client PO: 25229

Project Description: PE3584

	Client ID: Sample Date: Sample ID:	MW5-18-GW2 04/25/2019 09:00 1917683-05 Water	MW6-18-GW2 04/25/2019 09:00 1917683-06 Water	MW8-18-GW2 04/25/2019 09:00 1917683-07 Water	MW11-18-GW2 04/25/2019 09:00 1917683-08 Water
	MDL/Units				
F1 PHCs (C6-C10)	25 ug/L	<25	<25	<25	<25
F2 PHCs (C10-C16)	100 ug/L	<100	<100	<100	<100
F3 PHCs (C16-C34)	100 ug/L	<100	<100	<100	<100
F4 PHCs (C34-C50)	100 ug/L	<100	<100	<100	<100

Semi-Volatiles

Acenaphthene	0.05 ug/L	<0.05	<0.05	<0.05	0.18
Acenaphthylene	0.05 ug/L	<0.05	<0.05	<0.05	0.06
Anthracene	0.01 ug/L	<0.01	<0.01	<0.01	0.10
Benzo [a] anthracene	0.01 ug/L	<0.01	<0.01	<0.01	0.09
Benzo [a] pyrene	0.01 ug/L	<0.01	<0.01	<0.01	0.06
Benzo [b] fluoranthene	0.05 ug/L	<0.05	<0.05	<0.05	0.09
Benzo [g,h,i] perylene	0.05 ug/L	<0.05	<0.05	<0.05	<0.05
Benzo [k] fluoranthene	0.05 ug/L	<0.05	<0.05	<0.05	0.05
Chrysene	0.05 ug/L	<0.05	<0.05	<0.05	0.09
Dibenzo [a,h] anthracene	0.05 ug/L	<0.05	<0.05	<0.05	<0.05
Fluoranthene	0.01 ug/L	<0.01	<0.01	<0.01	0.34
Fluorene	0.05 ug/L	<0.05	<0.05	<0.05	0.06
Indeno [1,2,3-cd] pyrene	0.05 ug/L	<0.05	<0.05	<0.05	<0.05
1-Methylnaphthalene	0.05 ug/L	<0.05	<0.05	<0.05	<0.05
2-Methylnaphthalene	0.05 ug/L	<0.05	<0.05	<0.05	<0.05
Methylnaphthalene (1&2)	0.10 ug/L	<0.10	<0.10	<0.10	<0.10
Naphthalene	0.05 ug/L	<0.05	<0.05	<0.05	<0.05
Phenanthrene	0.05 ug/L	<0.05	<0.05	<0.05	0.15
Pyrene	0.01 ug/L	<0.01	<0.01	<0.01	0.27
2-Fluorobiphenyl	Surrogate	65.3%	88.0%	68.5%	70.0%
Terphenyl-d14	Surrogate	109%	117%	125%	109%

PCBs

PCBs, total	0.05 ug/L	<0.05	<0.05	<0.05	<0.05
Decachlorobiphenyl	Surrogate	98.1%	96.7%	89.1%	94.7%

Certificate of Analysis
 Client: Paterson Group Consulting Engineers
 Client PO: 25229

Report Date: 03-May-2019

Order Date: 26-Apr-2019

Project Description: PE3584

Client ID:	Dup-PR2	Trip Blank	-	-
Sample Date:	04/25/2019 09:00	04/24/2019 09:00	-	-
Sample ID:	1917683-09	1917683-10	-	-
MDL/Units	Water	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)	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: 03-May-2019

Client: Paterson Group Consulting Engineers

Order Date: 26-Apr-2019

Client PO: 25229

Project Description: PE3584

	Client ID: Sample Date: Sample ID:	Dup-PR2 04/25/2019 09:00 1917683-09 Water	Trip Blank 04/24/2019 09:00 1917683-10 Water	-	-
	MDL/Units			-	-
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	-	95.2%	-	-
Dibromofluoromethane	Surrogate	-	138%	-	-
Toluene-d8	Surrogate	-	87.2%	-	-

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	70.5%	-	-	-
Terphenyl-d14	Surrogate	102%	-	-	-

Certificate of Analysis

Report Date: 03-May-2019

Client: Paterson Group Consulting Engineers

Order Date: 26-Apr-2019

Client PO: 25229

Project Description: PE3584

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Anions									
Chloride	ND	1	mg/L						
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									
Mercury	ND	0.1	ug/L						
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 (VI)	ND	10	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	0.443		ug/L		88.6	60-140			
Semi-Volatiles									
Acenaphthene	ND	0.05	ug/L						
Acenaphthylene	ND	0.05	ug/L						
Anthracene	ND	0.01	ug/L						
Benzo [a] anthracene	ND	0.01	ug/L						
Benzo [a] pyrene	ND	0.01	ug/L						
Benzo [b] fluoranthene	ND	0.05	ug/L						
Benzo [g,h,i] perylene	ND	0.05	ug/L						
Benzo [k] fluoranthene	ND	0.05	ug/L						
Chrysene	ND	0.05	ug/L						
Dibenzo [a,h] anthracene	ND	0.05	ug/L						
Fluoranthene	ND	0.01	ug/L						
Fluorene	ND	0.05	ug/L						
Indeno [1,2,3-cd] pyrene	ND	0.05	ug/L						
1-Methylnaphthalene	ND	0.05	ug/L						
2-Methylnaphthalene	ND	0.05	ug/L						
Methylnaphthalene (1&2)	ND	0.10	ug/L						
Naphthalene	ND	0.05	ug/L						
Phenanthrene	ND	0.05	ug/L						
Pyrene	ND	0.01	ug/L						
Surrogate: 2-Fluorobiphenyl	13.6		ug/L		67.8	50-140			
Surrogate: Terphenyl-d14	23.2		ug/L		116	50-140			
Volatiles									
Acetone	ND	5.0	ug/L						
Benzene	ND	0.5	ug/L						
Bromodichloromethane	ND	0.5	ug/L						

Certificate of Analysis

Report Date: 03-May-2019

Client: Paterson Group Consulting Engineers

Order Date: 26-Apr-2019

Client PO: 25229

Project Description: PE3584

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
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,	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						
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	31.6		ug/L		98.7	50-140			
Surrogate: Dibromofluoromethane	33.0		ug/L		103	50-140			
Surrogate: Toluene-d8	34.7		ug/L		109	50-140			

Certificate of Analysis

Report Date: 03-May-2019

Client: Paterson Group Consulting Engineers

Order Date: 26-Apr-2019

Client PO: 25229

Project Description: PE3584

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Anions									
Chloride	20.8	1	mg/L	19.6			6.0	10	
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L	ND				30	
Metals									
Mercury	ND	0.1	ug/L	ND			0.0	20	
Antimony	0.61	0.5	ug/L	ND			0.0	20	
Arsenic	ND	1	ug/L	ND			0.0	20	
Barium	20.9	1	ug/L	21.3			1.9	20	
Beryllium	ND	0.5	ug/L	ND			0.0	20	
Boron	20	10	ug/L	19			5.0	20	
Cadmium	ND	0.1	ug/L	ND			0.0	20	
Chromium (VI)	ND	10	ug/L	ND				20	
Chromium	ND	1	ug/L	ND			0.0	20	
Cobalt	ND	0.5	ug/L	ND			0.0	20	
Copper	0.85	0.5	ug/L	0.85			0.6	20	
Lead	ND	0.1	ug/L	ND			0.0	20	
Molybdenum	1.15	0.5	ug/L	1.05			9.3	20	
Nickel	ND	1	ug/L	ND			0.0	20	
Selenium	ND	1	ug/L	ND			0.0	20	
Silver	ND	0.1	ug/L	ND			0.0	20	
Sodium	16000	200	ug/L	16500			3.3	20	
Thallium	ND	0.1	ug/L	ND			0.0	20	
Uranium	ND	0.1	ug/L	ND			0.0	20	
Vanadium	ND	0.5	ug/L	ND			0.0	20	
Zinc	6	5	ug/L	8			20.4	20	QR-01
Volatiles									
Acetone	ND	5.0	ug/L	ND				30	
Benzene	ND	0.5	ug/L	ND				30	
Bromodichloromethane	ND	0.5	ug/L	ND				30	
Bromoform	ND	0.5	ug/L	ND				30	
Bromomethane	ND	0.5	ug/L	ND				30	
Carbon Tetrachloride	ND	0.2	ug/L	ND				30	
Chlorobenzene	ND	0.5	ug/L	ND				30	
Chloroform	ND	0.5	ug/L	ND				30	
Dibromochloromethane	ND	0.5	ug/L	ND				30	
Dichlorodifluoromethane	ND	1.0	ug/L	ND				30	
1,2-Dichlorobenzene	ND	0.5	ug/L	ND				30	
1,3-Dichlorobenzene	ND	0.5	ug/L	ND				30	
1,4-Dichlorobenzene	ND	0.5	ug/L	ND				30	
1,1-Dichloroethane	ND	0.5	ug/L	ND				30	
1,2-Dichloroethane	ND	0.5	ug/L	ND				30	
1,1-Dichloroethylene	ND	0.5	ug/L	ND				30	
cis-1,2-Dichloroethylene	ND	0.5	ug/L	ND				30	
trans-1,2-Dichloroethylene	ND	0.5	ug/L	ND				30	
1,2-Dichloropropane	ND	0.5	ug/L	ND				30	
cis-1,3-Dichloropropylene	ND	0.5	ug/L	ND				30	
trans-1,3-Dichloropropylene	ND	0.5	ug/L	ND				30	
Ethylbenzene	ND	0.5	ug/L	ND				30	
Ethylene dibromide (dibromoethane,	ND	0.2	ug/L	ND				30	
Hexane	ND	1.0	ug/L	ND				30	
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L	ND				30	
Methyl Isobutyl Ketone	ND	5.0	ug/L	ND				30	
Methyl tert-butyl ether	ND	2.0	ug/L	ND				30	
Methylene Chloride	ND	5.0	ug/L	ND				30	
Styrene	ND	0.5	ug/L	ND				30	
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L	ND				30	
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L	ND				30	

Certificate of Analysis

Report Date: 03-May-2019

Client: Paterson Group Consulting Engineers

Order Date: 26-Apr-2019

Client PO: 25229

Project Description: PE3584

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Tetrachloroethylene	ND	0.5	ug/L	ND				30	
Toluene	ND	0.5	ug/L	ND				30	
1,1,1-Trichloroethane	ND	0.5	ug/L	ND				30	
1,1,2-Trichloroethane	ND	0.5	ug/L	ND				30	
Trichloroethylene	ND	0.5	ug/L	ND				30	
Trichlorofluoromethane	ND	1.0	ug/L	ND				30	
Vinyl chloride	ND	0.5	ug/L	ND				30	
m,p-Xylenes	ND	0.5	ug/L	ND				30	
o-Xylene	ND	0.5	ug/L	ND				30	
Surrogate: 4-Bromofluorobenzene	36.9		ug/L		115	50-140			
Surrogate: Dibromofluoromethane	38.3		ug/L		120	50-140			
Surrogate: Toluene-d8	39.4		ug/L		123	50-140			

Certificate of Analysis
 Client: Paterson Group Consulting Engineers
 Client PO: 25229

Report Date: 03-May-2019

Order Date: 26-Apr-2019

Project Description: PE3584

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Anions									
Chloride	28.7	1	mg/L	19.6	91.2	77-123			
Hydrocarbons									
F1 PHCs (C6-C10)	1960	25	ug/L		98.0	68-117			
F2 PHCs (C10-C16)	1560	100	ug/L		97.8	60-140			
F3 PHCs (C16-C34)	3930	100	ug/L		100	60-140			
F4 PHCs (C34-C50)	1970	100	ug/L		79.4	60-140			
Metals									
Mercury	3.04	0.1	ug/L	ND	101	70-130			
Antimony	37.1	0.5	ug/L	ND	74.2	80-120			QM-07
Arsenic	44.4	1	ug/L	ND	88.8	80-120			
Barium	58.8	1	ug/L	21.3	74.9	80-120			QM-07
Beryllium	43.3	0.5	ug/L	ND	86.5	80-120			
Boron	57	10	ug/L	19	76.2	80-120			QM-07
Cadmium	41.4	0.1	ug/L	ND	82.7	80-120			
Chromium (VI)	143	10	ug/L	ND	71.5	70-130			
Chromium	43.7	1	ug/L	ND	87.4	80-120			
Cobalt	41.0	0.5	ug/L	ND	82.1	80-120			
Copper	42.2	0.5	ug/L	0.85	82.8	80-120			
Lead	42.8	0.1	ug/L	ND	85.5	80-120			
Molybdenum	44.3	0.5	ug/L	ND	88.6	80-120			
Nickel	42.5	1	ug/L	ND	85.0	80-120			
Selenium	45.4	1	ug/L	ND	90.7	80-120			
Silver	42.9	0.1	ug/L	ND	85.8	80-120			
Sodium	23400	200	ug/L	16500	69.2	80-120			QM-07
Thallium	39.6	0.1	ug/L	ND	79.2	80-120			QM-07
Uranium	43.9	0.1	ug/L	ND	87.7	80-120			
Vanadium	43.2	0.5	ug/L	ND	86.4	80-120			
Zinc	48	5	ug/L	8	80.5	80-120			
PCBs									
PCBs, total	0.620	0.05	ug/L		62.0	60-140			
Surrogate: Decachlorobiphenyl	0.470		ug/L		94.0	60-140			
Semi-Volatiles									
Acenaphthene	3.86	0.05	ug/L		77.2	50-140			
Acenaphthylene	3.48	0.05	ug/L		69.7	50-140			
Anthracene	3.49	0.01	ug/L		69.9	50-140			
Benzo [a] anthracene	3.48	0.01	ug/L		69.5	50-140			
Benzo [a] pyrene	3.12	0.01	ug/L		62.5	50-140			
Benzo [b] fluoranthene	5.01	0.05	ug/L		100	50-140			
Benzo [g,h,i] perylene	3.07	0.05	ug/L		61.4	50-140			
Benzo [k] fluoranthene	4.79	0.05	ug/L		95.8	50-140			
Chrysene	3.91	0.05	ug/L		78.2	50-140			
Dibenzo [a,h] anthracene	3.55	0.05	ug/L		71.1	50-140			
Fluoranthene	3.79	0.01	ug/L		75.7	50-140			
Fluorene	3.57	0.05	ug/L		71.4	50-140			
Indeno [1,2,3-cd] pyrene	3.49	0.05	ug/L		69.8	50-140			
1-Methylnaphthalene	3.57	0.05	ug/L		71.5	50-140			
2-Methylnaphthalene	4.04	0.05	ug/L		80.8	50-140			
Naphthalene	4.41	0.05	ug/L		88.2	50-140			
Phenanthrene	3.41	0.05	ug/L		68.1	50-140			
Pyrene	3.76	0.01	ug/L		75.2	50-140			

Certificate of Analysis

Report Date: 03-May-2019

Client: Paterson Group Consulting Engineers

Order Date: 26-Apr-2019

Client PO: 25229

Project Description: PE3584

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Volatiles									
Acetone	110	5.0	ug/L		110	50-140			
Benzene	31.2	0.5	ug/L		78.0	60-130			
Bromodichloromethane	36.6	0.5	ug/L		91.4	60-130			
Bromoform	45.0	0.5	ug/L		112	60-130			
Bromomethane	29.4	0.5	ug/L		73.6	50-140			
Carbon Tetrachloride	36.8	0.2	ug/L		91.9	60-130			
Chlorobenzene	34.1	0.5	ug/L		85.2	60-130			
Chloroform	35.3	0.5	ug/L		88.2	60-130			
Dibromochloromethane	44.7	0.5	ug/L		112	60-130			
Dichlorodifluoromethane	37.6	1.0	ug/L		94.0	50-140			
1,2-Dichlorobenzene	37.3	0.5	ug/L		93.2	60-130			
1,3-Dichlorobenzene	38.3	0.5	ug/L		95.8	60-130			
1,4-Dichlorobenzene	36.8	0.5	ug/L		92.1	60-130			
1,1-Dichloroethane	31.6	0.5	ug/L		79.0	60-130			
1,2-Dichloroethane	31.2	0.5	ug/L		78.0	60-130			
1,1-Dichloroethylene	37.9	0.5	ug/L		94.7	60-130			
cis-1,2-Dichloroethylene	36.0	0.5	ug/L		90.1	60-130			
trans-1,2-Dichloroethylene	27.1	0.5	ug/L		67.8	60-130			
1,2-Dichloropropane	35.0	0.5	ug/L		87.5	60-130			
cis-1,3-Dichloropropylene	29.8	0.5	ug/L		74.5	60-130			
trans-1,3-Dichloropropylene	32.5	0.5	ug/L		81.4	60-130			
Ethylbenzene	29.5	0.5	ug/L		73.8	60-130			
Ethylene dibromide (dibromoethane,	49.5	0.2	ug/L		124	60-130			
Hexane	30.4	1.0	ug/L		76.1	60-130			
Methyl Ethyl Ketone (2-Butanone)	83.9	5.0	ug/L		83.9	50-140			
Methyl Isobutyl Ketone	100	5.0	ug/L		100	50-140			
Methyl tert-butyl ether	70.3	2.0	ug/L		70.3	50-140			
Methylene Chloride	31.4	5.0	ug/L		78.6	60-130			
Styrene	30.9	0.5	ug/L		77.3	60-130			
1,1,1,2-Tetrachloroethane	43.4	0.5	ug/L		109	60-130			
1,1,2,2-Tetrachloroethane	43.4	0.5	ug/L		109	60-130			
Tetrachloroethylene	45.4	0.5	ug/L		114	60-130			
Toluene	33.5	0.5	ug/L		83.8	60-130			
1,1,1-Trichloroethane	33.2	0.5	ug/L		83.0	60-130			
1,1,2-Trichloroethane	50.2	0.5	ug/L		126	60-130			
Trichloroethylene	29.4	0.5	ug/L		73.6	60-130			
Trichlorofluoromethane	31.0	1.0	ug/L		77.5	60-130			
Vinyl chloride	28.1	0.5	ug/L		70.4	50-140			
m,p-Xylenes	62.6	0.5	ug/L		78.2	60-130			
o-Xylene	27.7	0.5	ug/L		69.4	60-130			

Certificate of Analysis
Client: Paterson Group Consulting Engineers
Client PO: 25229

Report Date: 03-May-2019
Order Date: 26-Apr-2019
Project Description: PE3584

Qualifier Notes:***Login Qualifiers :***

Container(s) - Bottle and COC sample ID don't match -

Applies to samples: MW5-18-GW2

Sample - Not preserved -

Applies to samples: MW8-18-GW2

Sample preserved upon receipt at the lab.

Applies to samples: MW8-18-GW2

QC Qualifiers :

QM-07 : The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on other acceptable QC.

QR-01 : Duplicate RPD is high, however, the sample result is less than 10x the MDL.

Sample Data Revisions

None

Work Order Revisions / Comments:

Sub sampled for Metals

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.

CCME PHC additional information:

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



Certificate of Analysis

Paterson Group Consulting Engineers

154 Colonnade Road South
Nepean, ON K2E 7J5
Attn: Lauren Kratz

Client PO: 26271
Project: PE3584
Custody: 121041

Report Date: 10-May-2019
Order Date: 3-May-2019

Order #: 1918629

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

Paracel ID	Client ID
1918629-01	MW3-18-GW4
1918629-02	MW8-18-GW3
1918629-03	MW11-18-GW3

Approved By:



Dale Robertson, BSc
Laboratory Director

Certificate of Analysis

Client: Paterson Group Consulting Engineers

Client PO: 26271

Report Date: 10-May-2019

Order Date: 3-May-2019

Project Description: PE3584

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Metals, ICP-MS	EPA 200.8 - ICP-MS	6-May-19	6-May-19
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	7-May-19	8-May-19
REG 153: PAHs by GC-MS	EPA 625 - GC-MS, extraction	9-May-19	9-May-19

Certificate of Analysis
 Client: Paterson Group Consulting Engineers
 Client PO: 26271

Report Date: 10-May-2019

Order Date: 3-May-2019

Project Description: PE3584

Client ID:	MW3-18-GW4	MW8-18-GW3	MW11-18-GW3	-
Sample Date:	02-May-19 09:00	02-May-19 09:00	02-May-19 09:00	-
Sample ID:	1918629-01	1918629-02	1918629-03	-
MDL/Units	Water	Water	Water	-

Metals

Antimony	0.5 ug/L	<0.5	<0.5	1.2	-
Arsenic	1 ug/L	<1	<1	3	-
Barium	1 ug/L	1150	379	35	-
Beryllium	0.5 ug/L	<0.5	<0.5	<0.5	-
Boron	10 ug/L	240	55	45	-
Cadmium	0.1 ug/L	<0.1	<0.1	<0.1	-
Chromium	1 ug/L	<1	<1	30	-
Cobalt	0.5 ug/L	<0.5	2.2	0.9	-
Copper	0.5 ug/L	4.0	2.2	27.3	-
Lead	0.1 ug/L	0.2	<0.1	0.4	-
Molybdenum	0.5 ug/L	1.8	1.5	28.3	-
Nickel	1 ug/L	<1	4	4	-
Selenium	1 ug/L	<1	<1	2	-
Silver	0.1 ug/L	<0.1	<0.1	<0.1	-
Sodium	200 ug/L	311000	1070000	186000	-
Thallium	0.1 ug/L	<0.1	<0.1	<0.1	-
Uranium	0.1 ug/L	0.9	1.2	<0.1	-
Vanadium	0.5 ug/L	1.0	<0.5	30.9	-
Zinc	5 ug/L	7	7	<5	-

Hydrocarbons

F2 PHCs (C10-C16)	100 ug/L	<100	-	-	-
F3 PHCs (C16-C34)	100 ug/L	<100	-	-	-
F4 PHCs (C34-C50)	100 ug/L	<100	-	-	-

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	-	-	-

Certificate of Analysis

Client: Paterson Group Consulting Engineers

Client PO: 26271

Report Date: 10-May-2019

Order Date: 3-May-2019

Project Description: PE3584

	Client ID:		MW3-18-GW4	MW8-18-GW3	MW11-18-GW3	
	Sample Date:		02-May-19 09:00	02-May-19 09:00	02-May-19 09:00	
	Sample ID:		1918629-01	1918629-02	1918629-03	
	MDL/Units		Water	Water	Water	
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		97.3%	-	-	-
Terphenyl-d14	Surrogate		120%	-	-	-

Certificate of Analysis

Report Date: 10-May-2019

Client: Paterson Group Consulting Engineers

Order Date: 3-May-2019

Client PO: 26271

Project Description: PE3584

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
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						
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	21.7		ug/L		108	50-140			
Surrogate: Terphenyl-d14	23.6		ug/L		118	50-140			

Certificate of Analysis

Report Date: 10-May-2019

Client: Paterson Group Consulting Engineers

Order Date: 3-May-2019

Client PO: 26271

Project Description: PE3584

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Metals									
Antimony	ND	0.5	ug/L	ND			0.0	20	
Arsenic	ND	1	ug/L	ND			0.0	20	
Barium	21.8	1	ug/L	23.0			5.2	20	
Beryllium	ND	0.5	ug/L	ND			0.0	20	
Boron	18	10	ug/L	19			5.8	20	
Cadmium	ND	0.1	ug/L	ND			0.0	20	
Chromium	ND	1	ug/L	ND			0.0	20	
Cobalt	ND	0.5	ug/L	ND			0.0	20	
Copper	0.83	0.5	ug/L	0.85			3.5	20	
Lead	ND	0.1	ug/L	ND			0.0	20	
Molybdenum	1.05	0.5	ug/L	0.97			7.6	20	
Nickel	ND	1	ug/L	ND			0.0	20	
Selenium	ND	1	ug/L	ND			0.0	20	
Silver	ND	0.1	ug/L	ND			0.0	20	
Sodium	16700	200	ug/L	16700			0.0	20	
Thallium	ND	0.1	ug/L	ND			0.0	20	
Uranium	ND	0.1	ug/L	ND			0.0	20	
Vanadium	ND	0.5	ug/L	ND			0.0	20	
Zinc	6	5	ug/L	6			9.1	20	

Certificate of Analysis
 Client: Paterson Group Consulting Engineers
 Client PO: 26271

Report Date: 10-May-2019

Order Date: 3-May-2019

Project Description: PE3584

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F2 PHCs (C10-C16)	1300	100	ug/L		81.2	60-140			
F3 PHCs (C16-C34)	3550	100	ug/L		90.6	60-140			
F4 PHCs (C34-C50)	2400	100	ug/L		96.9	60-140			
Metals									
Antimony	45.7		ug/L	ND	91.1	80-120			
Arsenic	51.4		ug/L	ND	102	80-120			
Barium	72.8		ug/L	23.0	99.6	80-120			
Beryllium	47.5		ug/L	ND	95.0	80-120			
Boron	63		ug/L	19	87.8	80-120			
Cadmium	50.5		ug/L	ND	101	80-120			
Chromium	50.5		ug/L	ND	101	80-120			
Cobalt	50.3		ug/L	ND	101	80-120			
Copper	48.7		ug/L	0.85	95.7	80-120			
Lead	43.0		ug/L	ND	85.9	80-120			
Molybdenum	47.0		ug/L	0.97	92.0	80-120			
Nickel	49.0		ug/L	ND	97.0	80-120			
Selenium	50.1		ug/L	ND	99.7	80-120			
Silver	53.0		ug/L	ND	106	80-120			
Sodium	25700		ug/L	16700	90.3	80-120			
Thallium	50.2		ug/L	ND	100	80-120			
Uranium	51.6		ug/L	ND	103	80-120			
Vanadium	51.9		ug/L	ND	104	80-120			
Zinc	52		ug/L	6	91.4	80-120			
Semi-Volatiles									
Acenaphthene	4.15	0.05	ug/L		83.0	50-140			
Acenaphthylene	3.81	0.05	ug/L		76.2	50-140			
Anthracene	3.92	0.01	ug/L		78.3	50-140			
Benzo [a] anthracene	3.98	0.01	ug/L		79.5	50-140			
Benzo [a] pyrene	3.68	0.01	ug/L		73.6	50-140			
Benzo [b] fluoranthene	5.50	0.05	ug/L		110	50-140			
Benzo [g,h,i] perylene	3.83	0.05	ug/L		76.6	50-140			
Benzo [k] fluoranthene	5.44	0.05	ug/L		109	50-140			
Chrysene	4.59	0.05	ug/L		91.8	50-140			
Dibenzo [a,h] anthracene	4.24	0.05	ug/L		84.8	50-140			
Fluoranthene	4.13	0.01	ug/L		82.7	50-140			
Fluorene	3.95	0.05	ug/L		79.0	50-140			
Indeno [1,2,3-cd] pyrene	4.16	0.05	ug/L		83.2	50-140			
1-Methylnaphthalene	5.15	0.05	ug/L		103	50-140			
2-Methylnaphthalene	5.66	0.05	ug/L		113	50-140			
Naphthalene	5.50	0.05	ug/L		110	50-140			
Phenanthrene	3.91	0.05	ug/L		78.2	50-140			
Pyrene	4.17	0.01	ug/L		83.5	50-140			
Surrogate: 2-Fluorobiphenyl	21.0		ug/L		105	50-140			

Certificate of Analysis
Client: Paterson Group Consulting Engineers
Client PO: 26271

Report Date: 10-May-2019

Order Date: 3-May-2019

Project Description: PE3584

Qualifier Notes:

None

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

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

CCME PHC additional information:

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



Client Name: <u>Peterson Group</u>	Project Reference: <u>PE3584</u>	Turnaround Time: ☐ 1 Day ☐ 3 Day ☐ 2 Day ☒ Regular Date Required: _____
Contact Name: <u>Lauren Kratz</u>	Quote # _____	
Address: <u>154 Colonnade Rd. S.</u>	PO # <u>26271</u>	
Telephone: <u>613-226-7381</u>	Email Address: <u>lkratz@petersongroup.ca</u>	

Criteria: ☒ O. Reg. 153/04 (As Amended) Table 2/4 RSC Filing: ☐ O. Reg. 558/00 ☐ PWQO ☐ CCME ☐ SUB (Storm) ☐ SUB (Sanitary) Municipality: _____ ☐ Other: _____

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

Paracel Order Number: 1918629		Matrix	Air Volume	# of Containers	Sample Taken		PHCs P2 F4 - HTEX	VOCs	PAHs	Metals by ICP	Hg	CvI	B (HWS)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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Comments: _____ Method of Delivery: Paracel

Relinquished By (Sign): <u>[Signature]</u>	Received by Driver/Depot: <u>[Signature]</u>	Received at Lab: <u>Sumner Park Roxbury</u>	Verified By: <u>D. Gannon</u>
Relinquished By (Print): <u>ERIC LISMEQUE</u>	Date/Time: <u>03/05/19 10:50</u>	Date/Time: <u>May 03, 2019 12:06</u>	Date/Time: <u>3 May 19 1510</u>
Date/Time: <u>May 3/19 10:50 AM</u>	Temperature: <u>19.6 °C</u>	Temperature: <u>19.6 °C</u>	pH Verified: <u>7.8</u>

Certificate of Analysis

Paterson Group Consulting Engineers

154 Colonnade Road South
Nepean, ON K2E 7J5
Attn: Lauren Kratz

Client PO: 26747
Project: PE3584
Custody: 121971

Report Date: 12-Jun-2019
Order Date: 6-Jun-2019

Order #: 1923523

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

Paracel ID	Client ID
1923523-01	MW3-18-GW5
1923523-02	MW4-18-GW3
1923523-03	MW1-19-GW1
1923523-04	MW2-19-GW1
1923523-05	MW3-19-GW1
1923523-06	Trip Blank

Approved By:



Mark Foto, M.Sc.
Lab Supervisor

Certificate of Analysis

Client: Paterson Group Consulting Engineers

Client PO: 26747

Report Date: 12-Jun-2019

Order Date: 6-Jun-2019

Project Description: PE3584

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Chromium, hexavalent - water	MOE E3056 - colourimetric	6-Jun-19	7-Jun-19
Mercury by CVAA	EPA 245.2 - Cold Vapour AA	7-Jun-19	7-Jun-19
Metals, ICP-MS	EPA 200.8 - ICP-MS	7-Jun-19	7-Jun-19
PCBs, total	EPA 608 - GC-ECD	12-Jun-19	12-Jun-19
PHC F1	CWS Tier 1 - P&T GC-FID	7-Jun-19	8-Jun-19
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	7-Jun-19	8-Jun-19
REG 153: PAHs by GC-MS	EPA 625 - GC-MS, extraction	11-Jun-19	12-Jun-19
REG 153: VOCs by P&T GC/MS	EPA 624 - P&T GC-MS	7-Jun-19	8-Jun-19

Certificate of Analysis
 Client: Paterson Group Consulting Engineers
 Client PO: 26747

Report Date: 12-Jun-2019
 Order Date: 6-Jun-2019
 Project Description: PE3584

Client ID:	MW3-18-GW5	MW4-18-GW3	MW1-19-GW1	MW2-19-GW1
Sample Date:	05-Jun-19 09:00	05-Jun-19 09:00	05-Jun-19 09:00	05-Jun-19 09:00
Sample ID:	1923523-01	1923523-02	1923523-03	1923523-04
MDL/Units	Water	Water	Water	Water

Metals

Mercury	0.1 ug/L	-	-	<0.1	<0.1
Antimony	0.5 ug/L	-	-	<0.5	<0.5
Arsenic	1 ug/L	-	-	1	<1
Barium	1 ug/L	-	-	419	107
Beryllium	0.5 ug/L	-	-	<0.5	<0.5
Boron	10 ug/L	-	-	165	64
Cadmium	0.1 ug/L	-	-	<0.1	<0.1
Chromium	1 ug/L	-	-	<1	<1
Chromium (VI)	10 ug/L	-	-	<10	<10
Cobalt	0.5 ug/L	-	-	<0.5	<0.5
Copper	0.5 ug/L	-	-	5.1	<0.5
Lead	0.1 ug/L	-	-	0.2	<0.1
Molybdenum	0.5 ug/L	-	-	40.2	15.0
Nickel	1 ug/L	-	-	1	<1
Selenium	1 ug/L	-	-	1	<1
Silver	0.1 ug/L	-	-	<0.1	<0.1
Sodium	200 ug/L	-	-	359000	239000
Thallium	0.1 ug/L	-	-	<0.1	<0.1
Uranium	0.1 ug/L	-	-	3.9	0.7
Vanadium	0.5 ug/L	-	-	1.0	1.9
Zinc	5 ug/L	-	-	5	<5

Volatiles

Acetone	5.0 ug/L	-	-	<5.0	<5.0
Benzene	0.5 ug/L	-	-	<0.5	<0.5
Bromodichloromethane	0.5 ug/L	-	-	<0.5	<0.5
Bromoform	0.5 ug/L	-	-	<0.5	<0.5
Bromomethane	0.5 ug/L	-	-	<0.5	<0.5
Carbon Tetrachloride	0.2 ug/L	-	-	<0.2	<0.2
Chlorobenzene	0.5 ug/L	-	-	<0.5	<0.5
Chloroform	0.5 ug/L	-	-	3.1	<0.5
Dibromochloromethane	0.5 ug/L	-	-	<0.5	<0.5
Dichlorodifluoromethane	1.0 ug/L	-	-	<1.0	<1.0
1,2-Dichlorobenzene	0.5 ug/L	-	-	<0.5	<0.5
1,3-Dichlorobenzene	0.5 ug/L	-	-	<0.5	<0.5
1,4-Dichlorobenzene	0.5 ug/L	-	-	<0.5	<0.5

Certificate of Analysis
 Client: Paterson Group Consulting Engineers
 Client PO: 26747

Report Date: 12-Jun-2019
 Order Date: 6-Jun-2019
 Project Description: PE3584

	MDL/Units	Client ID:	MW3-18-GW5	MW4-18-GW3	MW1-19-GW1	MW2-19-GW1
		Sample Date:	05-Jun-19 09:00	05-Jun-19 09:00	05-Jun-19 09:00	05-Jun-19 09:00
		Sample ID:	1923523-01	1923523-02	1923523-03	1923523-04
			Water	Water	Water	Water
1,1-Dichloroethane	0.5 ug/L		-	-	<0.5	<0.5
1,2-Dichloroethane	0.5 ug/L		-	-	<0.5	<0.5
1,1-Dichloroethylene	0.5 ug/L		-	-	<0.5	<0.5
cis-1,2-Dichloroethylene	0.5 ug/L		-	-	<0.5	<0.5
trans-1,2-Dichloroethylene	0.5 ug/L		-	-	<0.5	<0.5
1,2-Dichloropropane	0.5 ug/L		-	-	<0.5	<0.5
cis-1,3-Dichloropropylene	0.5 ug/L		-	-	<0.5	<0.5
trans-1,3-Dichloropropylene	0.5 ug/L		-	-	<0.5	<0.5
1,3-Dichloropropene, total	0.5 ug/L		-	-	<0.5	<0.5
Ethylbenzene	0.5 ug/L		-	-	<0.5	<0.5
Ethylene dibromide (dibromoethane)	0.2 ug/L		-	-	<0.2	<0.2
Hexane	1.0 ug/L		-	-	<1.0	<1.0
Methyl Ethyl Ketone (2-Butanone)	5.0 ug/L		-	-	<5.0	<5.0
Methyl Isobutyl Ketone	5.0 ug/L		-	-	<5.0	<5.0
Methyl tert-butyl ether	2.0 ug/L		-	-	<2.0	<2.0
Methylene Chloride	5.0 ug/L		-	-	<5.0	<5.0
Styrene	0.5 ug/L		-	-	<0.5	<0.5
1,1,1,2-Tetrachloroethane	0.5 ug/L		-	-	<0.5	<0.5
1,1,2,2-Tetrachloroethane	0.5 ug/L		-	-	<0.5	<0.5
Tetrachloroethylene	0.5 ug/L		-	-	<0.5	<0.5
Toluene	0.5 ug/L		-	-	<0.5	<0.5
1,1,1-Trichloroethane	0.5 ug/L		-	-	<0.5	<0.5
1,1,2-Trichloroethane	0.5 ug/L		-	-	<0.5	<0.5
Trichloroethylene	0.5 ug/L		-	-	<0.5	<0.5
Trichlorofluoromethane	1.0 ug/L		-	-	<1.0	<1.0
Vinyl chloride	0.5 ug/L		-	-	<0.5	<0.5
m,p-Xylenes	0.5 ug/L		-	-	<0.5	<0.5
o-Xylene	0.5 ug/L		-	-	<0.5	<0.5
Xylenes, total	0.5 ug/L		-	-	<0.5	<0.5
4-Bromofluorobenzene	Surrogate		-	-	115%	115%
Dibromofluoromethane	Surrogate		-	-	94.3%	96.6%
Toluene-d8	Surrogate		-	-	109%	111%

Hydrocarbons

F1 PHCs (C6-C10)	25 ug/L	-	-	<25	<25
F2 PHCs (C10-C16)	100 ug/L	-	<100	<100	<100
F3 PHCs (C16-C34)	100 ug/L	-	<100	<100	<100

Certificate of Analysis
 Client: Paterson Group Consulting Engineers
 Client PO: 26747

Report Date: 12-Jun-2019
 Order Date: 6-Jun-2019
 Project Description: PE3584

	Client ID: Sample Date: Sample ID:	MW3-18-GW5 05-Jun-19 09:00 1923523-01 Water	MW4-18-GW3 05-Jun-19 09:00 1923523-02 Water	MW1-19-GW1 05-Jun-19 09:00 1923523-03 Water	MW2-19-GW1 05-Jun-19 09:00 1923523-04 Water
	MDL/Units				
F4 PHCs (C34-C50)	100 ug/L	-	<100	<100	<100

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	-	-	-	0.05
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	-	-	-	0.04
2-Fluorobiphenyl	Surrogate	-	-	-	87.1%
Terphenyl-d14	Surrogate	-	-	-	103%

PCBs

PCBs, total	0.05 ug/L	<0.05	-	-	<0.05
Decachlorobiphenyl	Surrogate	91.4%	-	-	105%

Certificate of Analysis
 Client: Paterson Group Consulting Engineers
 Client PO: 26747

Report Date: 12-Jun-2019
 Order Date: 6-Jun-2019
 Project Description: PE3584

Client ID:	MW3-19-GW1	Trip Blank	-	-
Sample Date:	05-Jun-19 09:00	06-Jun-19 09:00	-	-
Sample ID:	1923523-05	1923523-06	-	-
MDL/Units	Water	Water	-	-

Metals

Mercury	0.1 ug/L	<0.1	-	-	-
Antimony	0.5 ug/L	<0.5	-	-	-
Arsenic	1 ug/L	<1	-	-	-
Barium	1 ug/L	115	-	-	-
Beryllium	0.5 ug/L	<0.5	-	-	-
Boron	10 ug/L	63	-	-	-
Cadmium	0.1 ug/L	<0.1	-	-	-
Chromium	1 ug/L	<1	-	-	-
Chromium (VI)	10 ug/L	<10	-	-	-
Cobalt	0.5 ug/L	<0.5	-	-	-
Copper	0.5 ug/L	4.0	-	-	-
Lead	0.1 ug/L	0.2	-	-	-
Molybdenum	0.5 ug/L	66.3	-	-	-
Nickel	1 ug/L	<1	-	-	-
Selenium	1 ug/L	<1	-	-	-
Silver	0.1 ug/L	<0.1	-	-	-
Sodium	200 ug/L	94600	-	-	-
Thallium	0.1 ug/L	<0.1	-	-	-
Uranium	0.1 ug/L	3.4	-	-	-
Vanadium	0.5 ug/L	1.1	-	-	-
Zinc	5 ug/L	8	-	-	-

Volatiles

Acetone	5.0 ug/L	<5.0	<5.0	-	-
Benzene	0.5 ug/L	<0.5	<0.5	-	-
Bromodichloromethane	0.5 ug/L	<0.5	<0.5	-	-
Bromoform	0.5 ug/L	<0.5	<0.5	-	-
Bromomethane	0.5 ug/L	<0.5	<0.5	-	-
Carbon Tetrachloride	0.2 ug/L	<0.2	<0.2	-	-
Chlorobenzene	0.5 ug/L	<0.5	<0.5	-	-
Chloroform	0.5 ug/L	2.8	<0.5	-	-
Dibromochloromethane	0.5 ug/L	<0.5	<0.5	-	-
Dichlorodifluoromethane	1.0 ug/L	<1.0	<1.0	-	-
1,2-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	-	-
1,3-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	-	-

Certificate of Analysis
 Client: Paterson Group Consulting Engineers
 Client PO: 26747

Report Date: 12-Jun-2019
 Order Date: 6-Jun-2019
 Project Description: PE3584

	Client ID: Sample Date: Sample ID:	MW3-19-GW1 05-Jun-19 09:00 1923523-05 Water	Trip Blank 06-Jun-19 09:00 1923523-06 Water	-	-
	MDL/Units			-	-
1,4-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	-	-
1,1-Dichloroethane	0.5 ug/L	<0.5	<0.5	-	-
1,2-Dichloroethane	0.5 ug/L	<0.5	<0.5	-	-
1,1-Dichloroethylene	0.5 ug/L	<0.5	<0.5	-	-
cis-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	-	-
trans-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	-	-
1,2-Dichloropropane	0.5 ug/L	<0.5	<0.5	-	-
cis-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	-	-
trans-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	-	-
1,3-Dichloropropene, total	0.5 ug/L	<0.5	<0.5	-	-
Ethylbenzene	0.5 ug/L	<0.5	<0.5	-	-
Ethylene dibromide (dibromoethane)	0.2 ug/L	<0.2	<0.2	-	-
Hexane	1.0 ug/L	<1.0	<1.0	-	-
Methyl Ethyl Ketone (2-Butanone)	5.0 ug/L	<5.0	<5.0	-	-
Methyl Isobutyl Ketone	5.0 ug/L	<5.0	<5.0	-	-
Methyl tert-butyl ether	2.0 ug/L	<2.0	<2.0	-	-
Methylene Chloride	5.0 ug/L	<5.0	<5.0	-	-
Styrene	0.5 ug/L	<0.5	<0.5	-	-
1,1,1,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	-	-
1,1,2,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	-	-
Tetrachloroethylene	0.5 ug/L	<0.5	<0.5	-	-
Toluene	0.5 ug/L	<0.5	<0.5	-	-
1,1,1-Trichloroethane	0.5 ug/L	<0.5	<0.5	-	-
1,1,2-Trichloroethane	0.5 ug/L	<0.5	<0.5	-	-
Trichloroethylene	0.5 ug/L	<0.5	<0.5	-	-
Trichlorofluoromethane	1.0 ug/L	<1.0	<1.0	-	-
Vinyl chloride	0.5 ug/L	<0.5	<0.5	-	-
m,p-Xylenes	0.5 ug/L	<0.5	<0.5	-	-
o-Xylene	0.5 ug/L	<0.5	<0.5	-	-
Xylenes, total	0.5 ug/L	<0.5	<0.5	-	-
4-Bromofluorobenzene	Surrogate	116%	118%	-	-
Dibromofluoromethane	Surrogate	97.4%	96.3%	-	-
Toluene-d8	Surrogate	112%	109%	-	-
Hydrocarbons					
F1 PHCs (C6-C10)	25 ug/L	<25	-	-	-

Certificate of Analysis
 Client: Paterson Group Consulting Engineers
 Client PO: 26747

Report Date: 12-Jun-2019
 Order Date: 6-Jun-2019
 Project Description: PE3584

	Client ID:	MW3-19-GW1	Trip Blank	-	-
	Sample Date:	05-Jun-19 09:00	06-Jun-19 09:00	-	-
	Sample ID:	1923523-05	1923523-06	-	-
	MDL/Units	Water	Water	-	-
F2 PHCs (C10-C16)	100 ug/L	<100	-	-	-
F3 PHCs (C16-C34)	100 ug/L	<100	-	-	-
F4 PHCs (C34-C50)	100 ug/L	<100	-	-	-

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	0.08	-	-	-
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	0.06	-	-	-
2-Fluorobiphenyl	Surrogate	94.2%	-	-	-
Terphenyl-d14	Surrogate	92.6%	-	-	-

PCBs

PCBs, total	0.05 ug/L	<0.05	-	-	-
Decachlorobiphenyl	Surrogate	130%	-	-	-

Certificate of Analysis

Report Date: 12-Jun-2019

Client: Paterson Group Consulting Engineers

Order Date: 6-Jun-2019

Client PO: 26747

Project Description: PE3584

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L						
F2 PHCs (C10-C16)	ND	100	ug/L						
F3 PHCs (C16-C34)	ND	100	ug/L						
F4 PHCs (C34-C50)	ND	100	ug/L						
Metals									
Mercury	ND	0.1	ug/L						
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 (VI)	ND	10	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	0.528		ug/L		106	60-140			
Semi-Volatiles									
Acenaphthene	ND	0.05	ug/L						
Acenaphthylene	ND	0.05	ug/L						
Anthracene	ND	0.01	ug/L						
Benzo [a] anthracene	ND	0.01	ug/L						
Benzo [a] pyrene	ND	0.01	ug/L						
Benzo [b] fluoranthene	ND	0.05	ug/L						
Benzo [g,h,i] perylene	ND	0.05	ug/L						
Benzo [k] fluoranthene	ND	0.05	ug/L						
Chrysene	ND	0.05	ug/L						
Dibenzo [a,h] anthracene	ND	0.05	ug/L						
Fluoranthene	ND	0.01	ug/L						
Fluorene	ND	0.05	ug/L						
Indeno [1,2,3-cd] pyrene	ND	0.05	ug/L						
1-Methylnaphthalene	ND	0.05	ug/L						
2-Methylnaphthalene	ND	0.05	ug/L						
Methylnaphthalene (1&2)	ND	0.10	ug/L						
Naphthalene	ND	0.05	ug/L						
Phenanthrene	ND	0.05	ug/L						
Pyrene	ND	0.01	ug/L						
Surrogate: 2-Fluorobiphenyl	20.3		ug/L		102	50-140			
Surrogate: Terphenyl-d14	21.5		ug/L		107	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						

Certificate of Analysis

Report Date: 12-Jun-2019

Client: Paterson Group Consulting Engineers

Order Date: 6-Jun-2019

Client PO: 26747

Project Description: PE3584

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
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)	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						
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	99.8		ug/L		125	50-140			
Surrogate: Dibromofluoromethane	72.3		ug/L		90.4	50-140			
Surrogate: Toluene-d8	84.5		ug/L		106	50-140			

Certificate of Analysis
 Client: Paterson Group Consulting Engineers
 Client PO: 26747

Report Date: 12-Jun-2019
 Order Date: 6-Jun-2019
 Project Description: PE3584

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				30	
Metals									
Mercury	ND	0.1	ug/L	ND			0.0	20	
Antimony	ND	0.5	ug/L	ND			0.0	20	
Arsenic	ND	1	ug/L	ND			0.0	20	
Barium	ND	1	ug/L	ND			0.0	20	
Beryllium	ND	0.5	ug/L	ND			0.0	20	
Boron	ND	10	ug/L	ND			0.0	20	
Cadmium	ND	0.1	ug/L	ND			0.0	20	
Chromium (VI)	ND	10	ug/L	ND				20	
Chromium	ND	1	ug/L	ND			0.0	20	
Cobalt	ND	0.5	ug/L	ND			0.0	20	
Copper	ND	0.5	ug/L	ND			0.0	20	
Lead	ND	0.1	ug/L	ND			0.0	20	
Molybdenum	ND	0.5	ug/L	ND			0.0	20	
Nickel	ND	1	ug/L	ND			0.0	20	
Selenium	ND	1	ug/L	ND			0.0	20	
Silver	ND	0.1	ug/L	ND			0.0	20	
Sodium	ND	200	ug/L	ND			0.0	20	
Thallium	ND	0.1	ug/L	ND			0.0	20	
Uranium	ND	0.1	ug/L	ND			0.0	20	
Vanadium	ND	0.5	ug/L	ND			0.0	20	
Zinc	ND	5	ug/L	ND			0.0	20	
Volatiles									
Acetone	ND	5.0	ug/L	ND				30	
Benzene	ND	0.5	ug/L	ND				30	
Bromodichloromethane	ND	0.5	ug/L	ND				30	
Bromoform	ND	0.5	ug/L	ND				30	
Bromomethane	ND	0.5	ug/L	ND				30	
Carbon Tetrachloride	ND	0.2	ug/L	ND				30	
Chlorobenzene	ND	0.5	ug/L	ND				30	
Chloroform	ND	0.5	ug/L	ND				30	
Dibromochloromethane	ND	0.5	ug/L	ND				30	
Dichlorodifluoromethane	ND	1.0	ug/L	ND				30	
1,2-Dichlorobenzene	ND	0.5	ug/L	ND				30	
1,3-Dichlorobenzene	ND	0.5	ug/L	ND				30	
1,4-Dichlorobenzene	ND	0.5	ug/L	ND				30	
1,1-Dichloroethane	ND	0.5	ug/L	ND				30	
1,2-Dichloroethane	ND	0.5	ug/L	ND				30	
1,1-Dichloroethylene	ND	0.5	ug/L	ND				30	
cis-1,2-Dichloroethylene	ND	0.5	ug/L	ND				30	
trans-1,2-Dichloroethylene	ND	0.5	ug/L	ND				30	
1,2-Dichloropropane	ND	0.5	ug/L	ND				30	
cis-1,3-Dichloropropylene	ND	0.5	ug/L	ND				30	
trans-1,3-Dichloropropylene	ND	0.5	ug/L	ND				30	
Ethylbenzene	ND	0.5	ug/L	ND				30	
Ethylene dibromide (dibromoethane)	ND	0.2	ug/L	ND				30	
Hexane	ND	1.0	ug/L	ND				30	
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L	ND				30	
Methyl Isobutyl Ketone	ND	5.0	ug/L	ND				30	
Methyl tert-butyl ether	ND	2.0	ug/L	ND				30	
Methylene Chloride	ND	5.0	ug/L	ND				30	
Styrene	ND	0.5	ug/L	ND				30	
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L	ND				30	
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L	ND				30	
Tetrachloroethylene	ND	0.5	ug/L	ND				30	
Toluene	ND	0.5	ug/L	ND				30	

Certificate of Analysis

Report Date: 12-Jun-2019

Client: Paterson Group Consulting Engineers

Order Date: 6-Jun-2019

Client PO: 26747

Project Description: PE3584

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	ND	0.5	ug/L	ND				30	
1,1,2-Trichloroethane	ND	0.5	ug/L	ND				30	
Trichloroethylene	ND	0.5	ug/L	ND				30	
Trichlorofluoromethane	ND	1.0	ug/L	ND				30	
Vinyl chloride	ND	0.5	ug/L	ND				30	
m,p-Xylenes	ND	0.5	ug/L	ND				30	
o-Xylene	ND	0.5	ug/L	ND				30	
Surrogate: 4-Bromofluorobenzene	96.3		ug/L		120	50-140			
Surrogate: Dibromofluoromethane	84.8		ug/L		106	50-140			
Surrogate: Toluene-d8	84.5		ug/L		106	50-140			

Certificate of Analysis
 Client: Paterson Group Consulting Engineers
 Client PO: 26747

Report Date: 12-Jun-2019
 Order Date: 6-Jun-2019
 Project Description: PE3584

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	1960	25	ug/L		98.1	68-117			
F2 PHCs (C10-C16)	1670	100	ug/L		104	60-140			
F3 PHCs (C16-C34)	4100	100	ug/L		105	60-140			
F4 PHCs (C34-C50)	2510	100	ug/L		101	60-140			
Metals									
Mercury	2.97	0.1	ug/L	ND	99.1	70-130			QM-07
Antimony	38.6		ug/L	ND	76.9	80-120			
Arsenic	44.7		ug/L	ND	89.3	80-120			
Barium	48.6		ug/L	ND	96.0	80-120			
Beryllium	46.0		ug/L	ND	92.0	80-120			
Boron	42		ug/L	ND	82.2	80-120			
Cadmium	44.5		ug/L	ND	88.9	80-120			
Chromium (VI)	198	10	ug/L	ND	99.0	70-130			
Chromium	46.6		ug/L	ND	93.2	80-120			
Cobalt	45.0		ug/L	ND	89.9	80-120			
Copper	43.9		ug/L	ND	87.7	80-120			
Lead	44.3		ug/L	ND	88.5	80-120			
Molybdenum	41.9		ug/L	ND	83.7	80-120			
Nickel	44.8		ug/L	ND	89.6	80-120			
Selenium	46.4		ug/L	ND	92.6	80-120			
Silver	47.1		ug/L	ND	94.1	80-120			
Sodium	9340		ug/L	ND	92.0	80-120			
Thallium	42.0		ug/L	ND	84.0	80-120			
Uranium	42.8		ug/L	ND	85.5	80-120			
Vanadium	46.1		ug/L	ND	92.1	80-120			
Zinc	48		ug/L		96.1	80-120			
PCBs									
PCBs, total	0.821	0.05	ug/L		82.1	60-140			
Surrogate: Decachlorobiphenyl	0.497		ug/L		99.5	60-140			
Semi-Volatiles									
Acenaphthene	3.87	0.05	ug/L		77.4	50-140			
Acenaphthylene	3.50	0.05	ug/L		69.9	50-140			
Anthracene	4.05	0.01	ug/L		81.0	50-140			
Benzo [a] anthracene	3.82	0.01	ug/L		76.4	50-140			
Benzo [a] pyrene	3.51	0.01	ug/L		70.2	50-140			
Benzo [b] fluoranthene	5.15	0.05	ug/L		103	50-140			
Benzo [g,h,i] perylene	3.70	0.05	ug/L		74.1	50-140			
Benzo [k] fluoranthene	4.33	0.05	ug/L		86.5	50-140			
Chrysene	4.44	0.05	ug/L		88.8	50-140			
Dibenzo [a,h] anthracene	3.97	0.05	ug/L		79.5	50-140			
Fluoranthene	4.01	0.01	ug/L		80.1	50-140			
Fluorene	3.73	0.05	ug/L		74.5	50-140			
Indeno [1,2,3-cd] pyrene	4.03	0.05	ug/L		80.6	50-140			
1-Methylnaphthalene	4.43	0.05	ug/L		88.7	50-140			
2-Methylnaphthalene	4.79	0.05	ug/L		95.8	50-140			
Naphthalene	4.10	0.05	ug/L		82.0	50-140			
Phenanthrene	3.73	0.05	ug/L		74.6	50-140			
Pyrene	4.03	0.01	ug/L		80.5	50-140			
Volatiles									
Acetone	75.7	5.0	ug/L		75.7	50-140			

Certificate of Analysis
 Client: Paterson Group Consulting Engineers
 Client PO: 26747

Report Date: 12-Jun-2019
 Order Date: 6-Jun-2019
 Project Description: PE3584

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Benzene	43.5	0.5	ug/L		109	60-130			
Bromodichloromethane	41.1	0.5	ug/L		103	60-130			
Bromoform	51.8	0.5	ug/L		130	60-130			
Bromomethane	45.6	0.5	ug/L		114	50-140			
Carbon Tetrachloride	44.5	0.2	ug/L		111	60-130			
Chlorobenzene	42.2	0.5	ug/L		105	60-130			
Chloroform	41.6	0.5	ug/L		104	60-130			
Dibromochloromethane	44.5	0.5	ug/L		111	60-130			
Dichlorodifluoromethane	40.8	1.0	ug/L		102	50-140			
1,2-Dichlorobenzene	47.1	0.5	ug/L		118	60-130			
1,3-Dichlorobenzene	42.6	0.5	ug/L		107	60-130			
1,4-Dichlorobenzene	42.6	0.5	ug/L		106	60-130			
1,1-Dichloroethane	37.0	0.5	ug/L		92.6	60-130			
1,2-Dichloroethane	37.4	0.5	ug/L		93.4	60-130			
1,1-Dichloroethylene	39.6	0.5	ug/L		99.1	60-130			
cis-1,2-Dichloroethylene	41.7	0.5	ug/L		104	60-130			
trans-1,2-Dichloroethylene	40.3	0.5	ug/L		101	60-130			
1,2-Dichloropropane	39.0	0.5	ug/L		97.4	60-130			
cis-1,3-Dichloropropylene	33.4	0.5	ug/L		83.6	60-130			
trans-1,3-Dichloropropylene	30.8	0.5	ug/L		76.9	60-130			
Ethylbenzene	43.2	0.5	ug/L		108	60-130			
Ethylene dibromide (dibromoethane)	44.5	0.2	ug/L		111	60-130			
Hexane	41.7	1.0	ug/L		104	60-130			
Methyl Ethyl Ketone (2-Butanone)	95.1	5.0	ug/L		95.1	50-140			
Methyl Isobutyl Ketone	60.8	5.0	ug/L		60.8	50-140			
Methyl tert-butyl ether	113	2.0	ug/L		113	50-140			
Methylene Chloride	36.5	5.0	ug/L		91.3	60-130			
Styrene	44.3	0.5	ug/L		111	60-130			
1,1,1,2-Tetrachloroethane	41.2	0.5	ug/L		103	60-130			
1,1,2,2-Tetrachloroethane	34.5	0.5	ug/L		86.2	60-130			
Tetrachloroethylene	50.8	0.5	ug/L		127	60-130			
Toluene	43.3	0.5	ug/L		108	60-130			
1,1,1-Trichloroethane	43.6	0.5	ug/L		109	60-130			
1,1,2-Trichloroethane	38.8	0.5	ug/L		96.9	60-130			
Trichloroethylene	43.6	0.5	ug/L		109	60-130			
Trichlorofluoromethane	37.6	1.0	ug/L		93.9	60-130			
Vinyl chloride	39.0	0.5	ug/L		97.6	50-140			
m,p-Xylenes	86.4	0.5	ug/L		108	60-130			
o-Xylene	41.4	0.5	ug/L		103	60-130			

Certificate of Analysis
Client: Paterson Group Consulting Engineers
Client PO: 26747

Report Date: 12-Jun-2019
Order Date: 6-Jun-2019
Project Description: PE3584

Qualifier Notes:***Login Qualifiers :***

Sample - Not preserved - Cr6
Applies to samples: MW1-19-GW1, MW2-19-GW1

QC Qualifiers :

QM-07 : The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on other acceptable QC.

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.

CCME PHC additional information:

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

Certificate of Analysis

Paterson Group Consulting Engineers

154 Colonnade Road South
Nepean, ON K2E 7J5
Attn: Lauren Kratz

Client PO: 26870
Project: PE3584
Custody: 122377

Report Date: 19-Jun-2019
Order Date: 13-Jun-2019

Order #: 1924561

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

Paracel ID
1924561-01

Client ID
MW1-19-GW2

Approved By:



Dale Robertson, BSc
Laboratory Director

Certificate of Analysis

Client: Paterson Group Consulting Engineers

Client PO: 26870

Report Date: 19-Jun-2019

Order Date: 13-Jun-2019

Project Description: PE3584

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
PCBs, total	EPA 608 - GC-ECD	17-Jun-19	18-Jun-19
REG 153: PAHs by GC-MS	EPA 625 - GC-MS, extraction	17-Jun-19	19-Jun-19

Certificate of Analysis
 Client: Paterson Group Consulting Engineers
 Client PO: 26870

Report Date: 19-Jun-2019
 Order Date: 13-Jun-2019
 Project Description: PE3584

Client ID:	MW1-19-GW2	-	-	-
Sample Date:	13-Jun-19 09:00	-	-	-
Sample ID:	1924561-01	-	-	-
MDL/Units	Water	-	-	-

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	87.4%	-	-	-
Terphenyl-d14	Surrogate	108%	-	-	-

PCBs

PCBs, total	0.05 ug/L	<0.05	-	-	-
Decachlorobiphenyl	Surrogate	101%	-	-	-

Certificate of Analysis

Client: Paterson Group Consulting Engineers

Client PO: 26870

Report Date: 19-Jun-2019

Order Date: 13-Jun-2019

Project Description: PE3584

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
PCBs									
PCBs, total	ND	0.05	ug/L						
Surrogate: Decachlorobiphenyl	0.528		ug/L		106	60-140			
Semi-Volatiles									
Acenaphthene	ND	0.05	ug/L						
Acenaphthylene	ND	0.05	ug/L						
Anthracene	ND	0.01	ug/L						
Benzo [a] anthracene	ND	0.01	ug/L						
Benzo [a] pyrene	ND	0.01	ug/L						
Benzo [b] fluoranthene	ND	0.05	ug/L						
Benzo [g,h,i] perylene	ND	0.05	ug/L						
Benzo [k] fluoranthene	ND	0.05	ug/L						
Chrysene	ND	0.05	ug/L						
Dibenzo [a,h] anthracene	ND	0.05	ug/L						
Fluoranthene	ND	0.01	ug/L						
Fluorene	ND	0.05	ug/L						
Indeno [1,2,3-cd] pyrene	ND	0.05	ug/L						
1-Methylnaphthalene	ND	0.05	ug/L						
2-Methylnaphthalene	ND	0.05	ug/L						
Methylnaphthalene (1&2)	ND	0.10	ug/L						
Naphthalene	ND	0.05	ug/L						
Phenanthrene	ND	0.05	ug/L						
Pyrene	ND	0.01	ug/L						
Surrogate: 2-Fluorobiphenyl	13.6		ug/L		68.0	50-140			
Surrogate: Terphenyl-d14	22.1		ug/L		110	50-140			

Certificate of Analysis
 Client: Paterson Group Consulting Engineers
 Client PO: 26870

Report Date: 19-Jun-2019
 Order Date: 13-Jun-2019
 Project Description: PE3584

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
PCBs									
PCBs, total	0.821	0.05	ug/L		82.1	60-140			
Surrogate: Decachlorobiphenyl	0.497		ug/L		99.5	60-140			
Semi-Volatiles									
Acenaphthene	3.80	0.05	ug/L		76.1	50-140			
Acenaphthylene	3.43	0.05	ug/L		68.6	50-140			
Anthracene	3.82	0.01	ug/L		76.5	50-140			
Benzo [a] anthracene	4.21	0.01	ug/L		84.2	50-140			
Benzo [a] pyrene	3.79	0.01	ug/L		75.8	50-140			
Benzo [b] fluoranthene	5.78	0.05	ug/L		116	50-140			
Benzo [g,h,i] perylene	3.48	0.05	ug/L		69.5	50-140			
Benzo [k] fluoranthene	5.98	0.05	ug/L		120	50-140			
Chrysene	4.76	0.05	ug/L		95.3	50-140			
Dibenzo [a,h] anthracene	3.80	0.05	ug/L		76.0	50-140			
Fluoranthene	4.58	0.01	ug/L		91.5	50-140			
Fluorene	3.69	0.05	ug/L		73.8	50-140			
Indeno [1,2,3-cd] pyrene	3.77	0.05	ug/L		75.3	50-140			
1-Methylnaphthalene	3.55	0.05	ug/L		71.0	50-140			
2-Methylnaphthalene	3.93	0.05	ug/L		78.6	50-140			
Naphthalene	4.04	0.05	ug/L		80.9	50-140			
Phenanthrene	3.88	0.05	ug/L		77.5	50-140			
Pyrene	4.53	0.01	ug/L		90.5	50-140			

Certificate of Analysis

Client: Paterson Group Consulting Engineers

Client PO: 26870

Report Date: 19-Jun-2019

Order Date: 13-Jun-2019

Project Description: PE3584

Qualifier Notes:

None

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

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

%REC: Percent recovery.

RPD: Relative percent difference.



Client Name: <u>Paterson Group</u>	Project Reference: <u>PE3584</u>	Turnaround Time: ☐ 1 Day ☐ 3 Day ☐ 2 Day ☒ Regular Date Required: _____
Contact Name: <u>Lauren Kratz</u>	Quote # _____	
Address: <u>154 Colonnade Rd. S.</u>	PO # <u>26870</u>	
Telephone: <u>613-226-7381</u>	Email Address: <u>lkratz@patersongroup.ca</u>	

Criteria: ☒ O. Reg. 153/04 (As Amended) Table ☒ RSC Filing ☐ O. Reg. 558/00 ☐ PWQO ☐ CCME ☐ SUB (Storm) ☐ SUB (Sanitary) Municipality: _____ ☐ Other: _____

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)								Required Analyses							
Parcel Order Number:			Matrix	Air Volume	# of Containers	Sample Taken		PHCs F1-F4+BTX	VOCs	PAHs	Metals by ICP	Hg	CrVI	B (HWS)	PCBs
Sample ID/Location Name						Date	Time								
1	MW-19-GW2		GW		2	Jun. 13/19	A.M.			X					X
2															
3															
4															
5															
6															
7															
8															
9															
10															

Comments: _____ Method of Delivery: Parcel

Relinquished By (Sign):	Received by Driver/Depot: <u>A. DEWINE</u>	Received at Lab: <u>Sunepporn Bohmgi</u>	Verified By:
Relinquished By (Print): <u>Mark St Pierre</u>	Date/Time: <u>13/06/19 3:40 PM</u>	Date/Time: <u>JUN 13, 2019 04:25</u>	Date/Time: <u>June 13, 2019</u>
Date/Time: _____	Temperature: <u>12.0 °C</u>	Temperature: <u>12.0 °C</u>	pH Verified [] By: _____

Certificate of Analysis

Paterson Group Consulting Engineers

154 Colonnade Road South
Nepean, ON K2E 7J5
Attn: Lauren Kratz

Client PO: 26869
Project: PE3584
Custody: 122378

Report Date: 18-Jun-2019
Order Date: 13-Jun-2019

Order #: 1924562

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

Paracel ID	Client ID
1924562-01	MW8-18-GW4
1924562-02	MW1-19-GW3
1924562-03	MW2-19-GW2
1924562-04	MW3-19-GW2

Approved By:



Dale Robertson, BSc
Laboratory Director

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

Certificate of Analysis

Client: Paterson Group Consulting Engineers

Client PO: 26869

Report Date: 18-Jun-2019

Order Date: 13-Jun-2019

Project Description: PE3584

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Anions	EPA 300.1 - IC	15-Jun-19	16-Jun-19

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.

Certificate of Analysis
 Client: Paterson Group Consulting Engineers
 Client PO: 26869

Report Date: 18-Jun-2019
 Order Date: 13-Jun-2019
 Project Description: PE3584

Sample Results

Chloride				Matrix: Water
				Sample Date: 13-Jun-19
Paracel ID	Client ID	Units	MDL	Result
1924562-01	MW8-18-GW4	mg/L	1	1420
1924562-02	MW1-19-GW3	mg/L	1	578
1924562-03	MW2-19-GW2	mg/L	1	297
1924562-04	MW3-19-GW2	mg/L	1	23

Laboratory Internal QA/QC

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Matrix Blank									
Chloride	ND	1	mg/L						
Matrix Duplicate									
Chloride	ND	1	mg/L	ND				10	
Matrix Spike									
Chloride	59.5	1	mg/L	50.8	87.0	77-123			



Client Name: <u>Peterson Group</u>	Project Reference: <u>PE3587</u>	Turnaround Time: ☐ 1 Day ☐ 3 Day ☐ 2 Day ☒ Regular Date Required: _____
Contact Name: <u>Lauren Kratz</u>	Quote #	
Address: <u>154 Colonnade Rd. S.</u>	PO # <u>Z6869</u>	
Telephone: <u>613-226-7381</u>	Email Address: <u>lkratz@petersongroup.ca</u>	

Criteria: ☒ O. Reg. 153/04 (As Amended) Table ☒ RSC Filing ☐ O. Reg. 558/00 ☐ PWQO ☐ CCME ☐ SUB (Storm) ☐ SUB (Sanitary) Municipality: _____ ☐ Other: _____

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)							Required Analyses														
Paracel Order Number:		Matrix	Air Volume	# of Containers	Sample Taken		PHCs F1-F4+BTX	VOCs	PAHs	Metals by ICP				B (HWS)	chloride						
Sample ID/Location Name					Date	Time				Hg	Cd	Pb									
1	MW8-18-GW4	GW		1	Jun. 13/19	P.M.									X						
2	MW1-19-GW3			1											X						
3	MW2-19-GW2			1											X						
4	MW3-19-GW2			1											X						
5																					
6																					
7																					
8																					
9																					
10																					

Comments: _____ Method of Delivery: Paracel

Relinquished By (Signature): <u>[Signature]</u>	Received by Driver/Depot: <u>A. Frouse</u>	Received at Lab: <u>Sumegorm Bhargava</u>	Verified By: <u>[Signature]</u>
Relinquished By (Print): <u>Mark St-Pierre</u>	Date/Time: <u>13/06/19 3:40</u>	Date/Time: <u>Jun 13 2019 04:25</u>	Date/Time: <u>June 13/19 5</u>
Date/Time: _____	Temperature: <u>71</u> °C	Temperature: <u>12.1</u> °C	pH Verified By: _____

APPENDIX 4

WEIGH SCALE SUMMARY

DATE	Account1	Business Name	Vehicle id	Vehicle Licence	TIMEIN	TIMEOUT	GROSSW	TAREWT	Weight	TRANSNUM
25/04/2018	1511	Milestone Environmental Contracting Inc.		AN92745	8:32	8:48	50,180	20,650	29,530	TL2009238
25/04/2018	1511	Milestone Environmental Contracting Inc.		AN92745	10:27	10:41	52,820	20,610	32,210	TL2009296
25/04/2018	1511	Milestone Environmental Contracting Inc.		AN92745	11:54	12:05	52,450	20,450	32,000	TL2009369
25/04/2018	1511	Milestone Environmental Contracting Inc.		AN92745	13:12	13:24	53,170	20,570	32,600	TL2009418
25/04/2018	1511	Milestone Environmental Contracting Inc.		AN92745	14:31	14:44	52,610	20,550	32,060	TL2009461
25/04/2018	1511	Milestone Environmental Contracting Inc.		AN92745	16:36	16:46	45,800	20,500	25,300	TL2009520
25/04/2018	1511	Milestone Environmental Contracting Inc.		AR72303	8:01	8:49	49,840	20,250	29,590	TL2009224
25/04/2018	1511	Milestone Environmental Contracting Inc.		AR72303	10:33	10:45	51,830	20,190	31,640	TL2009300
25/04/2018	1511	Milestone Environmental Contracting Inc.		AR72303	11:57	12:11	52,010	20,180	31,830	TL2009371
25/04/2018	1511	Milestone Environmental Contracting Inc.		AR72303	13:21	13:32	52,570	20,170	32,400	TL2009424
25/04/2018	1511	Milestone Environmental Contracting Inc.		AR72303	14:48	14:58	51,930	20,140	31,790	TL2009471
25/04/2018	1511	Milestone Environmental Contracting Inc.		AR72303	16:57	17:11	50,260	20,110	30,150	TL2009528
25/04/2018	1511	Milestone Environmental Contracting Inc.		AV81786	7:46	8:43	53,200	20,230	32,970	TL2009214
25/04/2018	1511	Milestone Environmental Contracting Inc.		AV81786	10:21	10:33	52,880	20,190	32,690	TL2009292
25/04/2018	1511	Milestone Environmental Contracting Inc.		AV81786	11:42	11:58	52,940	20,000	32,940	TL2009358
25/04/2018	1511	Milestone Environmental Contracting Inc.		AV81786	13:04	13:16	53,830	19,970	33,860	TL2009414
25/04/2018	1511	Milestone Environmental Contracting Inc.		AV81786	14:24	14:39	52,230	19,960	32,270	TL2009455
25/04/2018	1511	Milestone Environmental Contracting Inc.		AV81786	16:04	16:17	51,450	19,940	31,510	TL2009506
25/04/2018	1511	Milestone Environmental Contracting Inc.		AV97937	7:39	8:36	52,690	19,770	32,920	TL2009209
25/04/2018	1511	Milestone Environmental Contracting Inc.		AV97937	10:11	10:22	51,310	19,740	31,570	TL2009289
25/04/2018	1511	Milestone Environmental Contracting Inc.		AV97937	11:35	11:51	53,090	19,720	33,370	TL2009351
25/04/2018	1511	Milestone Environmental Contracting Inc.		AV97937	12:55	13:04	54,950	19,710	35,240	TL2009408
25/04/2018	1511	Milestone Environmental Contracting Inc.		AV97937	14:14	14:32	47,760	19,690	28,070	TL2009450
25/04/2018	1511	Milestone Environmental Contracting Inc.		AV97937	16:00	16:22	52,050	19,660	32,390	TL2009502
25/04/2018	1511	Milestone Environmental Contracting Inc.		DA13798	8:18	8:55	45,480	19,950	25,530	TL2009228
25/04/2018	1511	Milestone Environmental Contracting Inc.		DA13798	10:47	11:00	50,480	19,890	30,590	TL2009311
25/04/2018	1511	Milestone Environmental Contracting Inc.		DA13798	12:14	12:28	48,040	19,880	28,160	TL2009383
25/04/2018	1511	Milestone Environmental Contracting Inc.		DA13798	13:43	13:55	52,170	19,850	32,320	TL2009434
25/04/2018	1511	Milestone Environmental Contracting Inc.		DA13798	15:12	15:30	51,750	19,810	31,940	TL2009483
22/05/2018	1511	Milestone Environmental Contracting Inc.		AN92745	7:26	7:37	54,170	20,250	33,920	TL2019134
22/05/2018	1511	Milestone Environmental Contracting Inc.		AN92745	9:15	9:31	60,560	20,210	40,350	TL2019214
22/05/2018	1511	Milestone Environmental Contracting Inc.		AN92745	10:46	11:11	59,220	20,180	39,040	TL2019321
22/05/2018	1511	Milestone Environmental Contracting Inc.		AN92745	12:21	12:42	53,700	20,180	33,520	TL2019417
22/05/2018	1511	Milestone Environmental Contracting Inc.		AN92745	13:49	14:11	55,750	20,140	35,610	TL2019502
22/05/2018	1511	Milestone Environmental Contracting Inc.		AN92745	15:20	15:35	56,180	20,100	36,080	TL2019579
22/05/2018	1511	Milestone Environmental Contracting Inc.		AN92745	17:00	17:22	58,370	20,060	38,310	TL2019652
22/05/2018	1511	Milestone Environmental Contracting Inc.		AR72303	7:42	7:55	57,460	19,920	37,540	TL2019146
22/05/2018	1511	Milestone Environmental Contracting Inc.		AR72303	9:32	9:56	59,240	19,870	39,370	TL2019235
22/05/2018	1511	Milestone Environmental Contracting Inc.		AR72303	11:08	11:32	57,520	19,870	37,650	TL2019344
22/05/2018	1511	Milestone Environmental Contracting Inc.		AR72303	14:11	14:35	56,520	19,720	36,800	TL2019524
22/05/2018	1511	Milestone Environmental Contracting Inc.		AR72303	15:51	15:57	57,790	19,760	38,030	TL2019598
22/05/2018	1511	Milestone Environmental Contracting Inc.		AR72303	17:29	17:41	57,180	19,730	37,450	TL2019676
22/05/2018	1511	Milestone Environmental Contracting Inc.		AR82303	12:40	13:01	59,200	19,850	39,350	TL2019440
22/05/2018	1511	Milestone Environmental Contracting Inc.		AV81786	8:05	8:18	60,840	19,980	40,860	TL2019161
22/05/2018	1511	Milestone Environmental Contracting Inc.		AV81786	10:25	10:50	58,210	19,900	38,310	TL2019295
22/05/2018	1511	Milestone Environmental Contracting Inc.		AV81786	12:02	12:24	58,170	19,890	38,280	TL2019398
22/05/2018	1511	Milestone Environmental Contracting Inc.		AV81786	13:39	14:06	58,100	19,840	38,260	TL2019493
22/05/2018	1511	Milestone Environmental Contracting Inc.		AV81786	15:17	15:31	57,420	19,790	37,630	TL2019577
22/05/2018	1511	Milestone Environmental Contracting Inc.		AV81786	16:54	17:10	56,950	19,770	37,180	TL2019646
22/05/2018	1511	Milestone Environmental Contracting Inc.		AV97937	7:33	7:49	57,790	19,740	38,050	TL2019141
22/05/2018	1511	Milestone Environmental Contracting Inc.		AV97937	9:28	9:50	53,790	19,700	34,090	TL2019229
22/05/2018	1511	Milestone Environmental Contracting Inc.		AV97937	11:03	11:25	60,300	19,690	40,610	TL2019338
22/05/2018	1511	Milestone Environmental Contracting Inc.		AV97937	12:30	12:49	56,300	19,690	36,610	TL2019427
22/05/2018	1511	Milestone Environmental Contracting Inc.		AV97937	13:55	14:17	57,920	19,640	38,280	TL2019509
22/05/2018	1511	Milestone Environmental Contracting Inc.		AV97937	15:26	15:36	54,680	19,600	35,080	TL2019581
22/05/2018	1511	Milestone Environmental Contracting Inc.		AV97937	17:10	17:24	55,560	19,570	35,990	TL2019664
23/05/2018	1511	Milestone Environmental Contracting Inc.		AE74208	10:37	10:47	34,180	14,240	19,940	TL2019844
23/05/2018	1511	Milestone Environmental Contracting Inc.		AE74208	11:42	11:52	36,290	14,210	22,080	TL2019907
23/05/2018	1511	Milestone Environmental Contracting Inc.		AE74208	12:55	13:07	34,010	14,190	19,820	TL2019968
23/05/2018	1511	Milestone Environmental Contracting Inc.		AE74208	14:17	14:24	35,360	14,130	21,230	TL2020039
23/05/2018	1511	Milestone Environmental Contracting Inc.		AE74208	15:38	15:59	34,330	14,140	20,190	TL2020116
23/05/2018	1511	Milestone Environmental Contracting Inc.		AN92745	7:22	7:48	54,570	20,280	34,290	TL2019718
23/05/2018	1511	Milestone Environmental Contracting Inc.		AN92745	9:22	9:38	55,560	20,240	35,320	TL2019792
23/05/2018	1511	Milestone Environmental Contracting Inc.		AN92745	10:46	10:56	56,100	20,210	35,890	TL2019860
23/05/2018	1511	Milestone Environmental Contracting Inc.		AN92745	12:05	12:18	57,960	20,140	37,820	TL2019926
23/05/2018	1511	Milestone Environmental Contracting Inc.		AN92745	13:23	13:37	55,550	20,120	35,430	TL2019988
23/05/2018	1511	Milestone Environmental Contracting Inc.		AN92745	14:39	15:29	55,130	20,060	35,070	TL2020063
23/05/2018	1511	Milestone Environmental Contracting Inc.		AN92745	17:07	17:19	55,200	20,040	35,160	TL2020193
23/05/2018	1511	Milestone Environmental Contracting Inc.		AR72303	7:40	7:52	55,590	19,900	35,690	TL2019731
23/05/2018	1511	Milestone Environmental Contracting Inc.		AR72303	9:27	9:36	54,940	19,860	35,080	TL2019795
23/05/2018	1511	Milestone Environmental Contracting Inc.		AR72303	10:49	11:01	53,990	19,830	34,160	TL2019864
23/05/2018	1511	Milestone Environmental Contracting Inc.		AR72303	12:08	12:25	56,170	19,770	36,400	TL2019930
23/05/2018	1511	Milestone Environmental Contracting Inc.		AR72303	13:29	13:41	56,240	19,760	36,480	TL2019995
23/05/2018	1511	Milestone Environmental Contracting Inc.		AR72303	14:46	15:31	56,700	19,780	36,920	TL2020068
23/05/2018	1511	Milestone Environmental Contracting Inc.		AR72303	17:10	17:24	56,350	19,730	36,620	TL2020194
23/05/2018	1511	Milestone Environmental Contracting Inc.		AV81786	7:45	8:01	56,870	19,970	36,900	TL2019735
23/05/2018	1511	Milestone Environmental Contracting Inc.		AV81786	9:33	9:47	56,650	19,930	36,720	TL2019799
23/05/2018	1511	Milestone Environmental Contracting Inc.		AV81786	10:58	11:13	54,120	19,870	34,250	TL2019875
23/05/2018	1511	Milestone Environmental Contracting Inc.		AV81786	12:15	12:36	56,150	19,820	36,330	TL2019938
23/05/2018	1511	Milestone Environmental Contracting Inc.		AV81786	13:40	13:54	54,600	19,790	34,810	TL2020008
23/05/2018	1511	Milestone Environmental Contracting Inc.		AV81786	15:03	15:36	55,220	19,770	35,450	TL2020091
23/05/2018	1511	Milestone Environmental Contracting Inc.		AV81786	17:22	17:34	55,620	19,720	35,900	TL2020201
23/05/2018	1511	Milestone Environmental Contracting Inc.		AV97937	7:41	7:55	52,570	19,710	32,860	TL2019732
23/05/2018	1511	Milestone Environmental Contracting Inc.		AV97937	9:31	9:42	57,270	19,690	37,580	TL2019797
23/05/2018	1511	Milestone Environmental Contracting Inc.		AV97937	10:52	11:04	54,200	19,640	34,560	TL2019867
23/05/2018	1511	Milestone Environmental Contracting Inc.		AV97937	12:12	12:30	56,480	19,610	36,870	TL2019936
23/05/2018	1511	Milestone Environmental Contracting Inc.		AV97937	13:34	13:47	56,680	19,590	37,090	TL2020000

DATE	Account1	Business Name	Vehicle id	Vehicle Licence	TIMEIN	TIMEOUT	GROSSW	TAREWT	Weight	TRANSNUM
23/05/2018	1511	Milestone Environmental Contracting Inc.		AV97937	14:55	15:34	56,620	19,540	37,080	TL2020081
23/05/2018	1511	Milestone Environmental Contracting Inc.		AV97937	17:17	17:28	55,220	19,510	35,710	TL2020197
24/05/2018	1511	Milestone Environmental Contracting Inc.		AM77544	7:40	7:52	56,600	19,890	36,710	TL2020260
24/05/2018	1511	Milestone Environmental Contracting Inc.		AM77544	9:25	9:41	56,510	19,840	36,670	TL2020317
24/05/2018	1511	Milestone Environmental Contracting Inc.		AM77544	10:56	11:08	56,560	19,800	36,760	TL2020394
24/05/2018	1511	Milestone Environmental Contracting Inc.		AM77544	12:19	12:30	57,830	19,770	38,060	TL2020468
24/05/2018	1511	Milestone Environmental Contracting Inc.		AM77544	13:38	13:56	57,500	19,730	37,770	TL2020536
24/05/2018	1511	Milestone Environmental Contracting Inc.		AM77544	15:03	15:15	56,750	19,680	37,070	TL2020601
24/05/2018	1511	Milestone Environmental Contracting Inc.		AM77544	17:09	17:19	57,720	19,670	38,050	TL2020674
24/05/2018	1511	Milestone Environmental Contracting Inc.		AN92745	7:17	7:31	54,460	20,230	34,230	TL2020243
24/05/2018	1511	Milestone Environmental Contracting Inc.		AN92745	8:56	9:10	55,330	20,190	35,140	TL2020299
24/05/2018	1511	Milestone Environmental Contracting Inc.		AN92745	11:02	11:15	55,090	20,150	34,940	TL2020402
24/05/2018	1511	Milestone Environmental Contracting Inc.		AN92745	12:28	12:41	56,990	20,120	36,870	TL2020473
24/05/2018	1511	Milestone Environmental Contracting Inc.		AN92745	13:48	14:02	55,670	20,080	35,590	TL2020545
24/05/2018	1511	Milestone Environmental Contracting Inc.		AN92745	15:10	15:36	57,210	20,060	37,150	TL2020607
24/05/2018	1511	Milestone Environmental Contracting Inc.		AN92745	17:22	17:38	57,840	20,040	37,800	TL2020683
24/05/2018	1511	Milestone Environmental Contracting Inc.		AP72303	7:33	7:46	55,420	19,910	35,510	TL2020255
24/05/2018	1511	Milestone Environmental Contracting Inc.		AR72303	9:20	9:35	55,740	19,870	35,870	TL2020312
24/05/2018	1511	Milestone Environmental Contracting Inc.		AR72303	10:50	11:03	54,200	19,830	34,370	TL2020387
24/05/2018	1511	Milestone Environmental Contracting Inc.		AR72303	12:17	12:29	58,140	19,810	38,330	TL2020467
24/05/2018	1511	Milestone Environmental Contracting Inc.		AR72303	13:35	13:53	56,320	19,740	36,580	TL2020534
24/05/2018	1511	Milestone Environmental Contracting Inc.		AR72303	14:56	15:30	57,630	19,660	37,970	TL2020593
24/05/2018	1511	Milestone Environmental Contracting Inc.		AR72303	17:16	17:36	56,900	19,650	37,250	TL2020679
24/05/2018	1511	Milestone Environmental Contracting Inc.		AV81768	7:19	7:35	55,950	19,910	36,040	TL2020245
24/05/2018	1511	Milestone Environmental Contracting Inc.		AV81768	9:01	9:33	57,030	19,860	37,170	TL2020302
24/05/2018	1511	Milestone Environmental Contracting Inc.		AV81768	10:45	10:57	56,990	19,810	37,180	TL2020382
24/05/2018	1511	Milestone Environmental Contracting Inc.		AV81768	12:05	12:20	57,160	19,790	37,370	TL2020456
24/05/2018	1511	Milestone Environmental Contracting Inc.		AV81768	13:28	13:47	55,520	19,750	35,770	TL2020527
24/05/2018	1511	Milestone Environmental Contracting Inc.		AV81768	14:48	15:28	58,410	19,730	38,680	TL2020589
24/05/2018	1511	Milestone Environmental Contracting Inc.		AV81768	17:04	17:20	59,470	19,730	39,740	TL2020671
25/05/2018	1511	Milestone Environmental Contracting Inc.		AM77544	8:19	8:44	55,680	19,830	35,850	TL2020755
25/05/2018	1511	Milestone Environmental Contracting Inc.		AM77544	9:59	10:14	58,310	19,800	38,510	TL2020826
25/05/2018	1511	Milestone Environmental Contracting Inc.		AM77544	11:38	11:54	53,430	19,770	33,660	TL2020915
25/05/2018	1511	Milestone Environmental Contracting Inc.		AM77544	12:57	13:14	55,460	19,720	35,740	TL2020987
25/05/2018	1511	Milestone Environmental Contracting Inc.		AM77544	14:19	14:51	55,980	19,700	36,280	TL2021052
25/05/2018	1511	Milestone Environmental Contracting Inc.		AN92745	8:18	8:30	56,830	20,110	36,720	TL2020753
25/05/2018	1511	Milestone Environmental Contracting Inc.		AN92745	9:55	10:08	57,780	20,210	37,570	TL2020820
25/05/2018	1511	Milestone Environmental Contracting Inc.		AN92745	11:14	11:26	54,950	20,170	34,780	TL2020888
25/05/2018	1511	Milestone Environmental Contracting Inc.		AN92745	12:45	15:13	55,570	20,110	35,460	TL2020973
25/05/2018	1511	Milestone Environmental Contracting Inc.		AR72303	8:17	8:26	56,480	19,870	36,610	TL2020752
25/05/2018	1511	Milestone Environmental Contracting Inc.		AR72303	9:50	10:01	55,690	19,850	35,840	TL2020815
25/05/2018	1511	Milestone Environmental Contracting Inc.		AR72303	11:42	11:58	56,090	19,810	36,280	TL2020919
25/05/2018	1511	Milestone Environmental Contracting Inc.		AR72303	13:00	13:18	56,360	19,770	36,590	TL2020989
25/05/2018	1511	Milestone Environmental Contracting Inc.		AR72303	14:23	14:57	56,260	19,730	36,530	TL2021056
25/05/2018	1511	Milestone Environmental Contracting Inc.		AV81768	8:18	8:33	55,230	19,910	35,320	TL2020754
25/05/2018	1511	Milestone Environmental Contracting Inc.		AV81768	9:58	10:13	56,600	19,910	36,690	TL2020825
25/05/2018	1511	Milestone Environmental Contracting Inc.		AV81768	11:29	11:46	54,750	19,870	34,880	TL2020906
25/05/2018	1511	Milestone Environmental Contracting Inc.		AV81768	12:51	13:07	54,970	19,820	35,150	TL2020981
25/05/2018	1511	Milestone Environmental Contracting Inc.		AV81768	14:14	14:54	56,090	19,780	36,310	TL2021047
28/05/2018	1511	Milestone Environmental Contracting Inc.		AM77544	7:54	8:04	53,130	19,780	33,350	TL2021629
28/05/2018	1511	Milestone Environmental Contracting Inc.		AM77544	9:25	9:36	52,240	19,750	32,490	TL2021681
28/05/2018	1511	Milestone Environmental Contracting Inc.		AM77544	10:42	10:59	52,890	19,720	33,170	TL2021747
28/05/2018	1511	Milestone Environmental Contracting Inc.		AM77544	12:03	13:29	54,150	19,690	34,460	TL2021823
28/05/2018	1511	Milestone Environmental Contracting Inc.		AM77544	14:29	14:38	53,040	19,660	33,380	TL2021946
28/05/2018	1511	Milestone Environmental Contracting Inc.		AM77544	15:56	16:12	55,270	19,620	35,650	TL2022012
28/05/2018	1511	Milestone Environmental Contracting Inc.		AN92745	7:37	7:47	53,650	20,220	33,430	TL2021621
28/05/2018	1511	Milestone Environmental Contracting Inc.		AN92745	9:13	9:26	54,410	20,190	34,220	TL2021671
28/05/2018	1511	Milestone Environmental Contracting Inc.		AN92745	10:37	10:50	52,060	20,150	31,910	TL2021741
28/05/2018	1511	Milestone Environmental Contracting Inc.		AN92745	12:02	12:18	55,660	20,120	35,540	TL2021822
28/05/2018	1511	Milestone Environmental Contracting Inc.		AN92745	13:23	13:37	56,680	20,090	36,590	TL2021892
28/05/2018	1511	Milestone Environmental Contracting Inc.		AN92745	17:03	17:15	53,780	20,000	33,780	TL2022055
28/05/2018	1511	Milestone Environmental Contracting Inc.		AN92745	14:53	15:21	52,270	20,010	32,260	TL2021962
28/05/2018	1511	Milestone Environmental Contracting Inc.		AV81768	7:40	7:56	54,600	19,930	34,670	TL2021624
28/05/2018	1511	Milestone Environmental Contracting Inc.		AV81768	9:21	9:38	54,650	19,900	34,750	TL2021678
28/05/2018	1511	Milestone Environmental Contracting Inc.		AV81768	12:29	12:46	54,780	19,870	34,910	TL2021847
28/05/2018	1511	Milestone Environmental Contracting Inc.		AV81768	15:16	15:31	54,600	19,820	34,780	TL2021979
28/05/2018	1511	Milestone Environmental Contracting Inc.		AV81768	17:09	17:23	56,250	19,790	36,460	TL2022062
29/05/2018	1511	Milestone Environmental Contracting Inc.		AM77544	7:45	7:57	54,400	19,770	34,630	TL2022137
29/05/2018	1511	Milestone Environmental Contracting Inc.		AM77544	9:41	9:53	54,470	19,750	34,720	TL2022189
29/05/2018	1511	Milestone Environmental Contracting Inc.		AM77544	11:02	11:13	56,240	19,720	36,520	TL2022250
29/05/2018	1511	Milestone Environmental Contracting Inc.		AM77544	12:15	12:27	56,390	19,720	36,670	TL2022313
29/05/2018	1511	Milestone Environmental Contracting Inc.		AM77544	13:29	13:41	55,850	19,680	36,170	TL2022375
29/05/2018	1511	Milestone Environmental Contracting Inc.		AM77544	17:31	17:40	57,730	19,630	38,100	TL2022548
29/05/2018	1511	Milestone Environmental Contracting Inc.		AN92745	7:42	7:56	52,940	20,230	32,710	TL2022134
29/05/2018	1511	Milestone Environmental Contracting Inc.		AN92745	9:38	9:54	53,220	20,180	33,040	TL2022185
29/05/2018	1511	Milestone Environmental Contracting Inc.		AN92745	10:59	11:08	55,910	20,150	35,760	TL2022247
29/05/2018	1511	Milestone Environmental Contracting Inc.		AN92745	12:12	12:40	56,160	20,130	36,030	TL2022310
29/05/2018	1511	Milestone Environmental Contracting Inc.		AN92745	13:52	14:05	57,110	20,090	37,020	TL2022397
29/05/2018	1511	Milestone Environmental Contracting Inc.		AN92745	15:16	15:26	57,860	20,110	37,750	TL2022471
29/05/2018	1511	Milestone Environmental Contracting Inc.		AN92745	17:27	17:42	56,120	20,060	36,060	TL2022544
29/05/2018	1511	Milestone Environmental Contracting Inc.		AV81768	7:54	8:06	55,270	19,940	35,330	TL2022141
29/05/2018	1511	Milestone Environmental Contracting Inc.		AV81768	9:56	10:20	55,030	19,890	35,140	TL2022199
29/05/2018	1511	Milestone Environmental Contracting Inc.		AV81768	11:22	11:35	56,410	19,890	36,520	TL2022269
29/05/2018	1511	Milestone Environmental Contracting Inc.		AV81768	12:44	12:56	57,480	19,870	37,610	TL2022339
29/05/2018	1511	Milestone Environmental Contracting Inc.		AV81768	14:00	14:27	55,090	19,830	35,260	TL2022407
29/05/2018	1511	Milestone Environmental Contracting Inc.		AV81768	15:45	16:16	55,370	19,850	35,520	TL2022492
29/05/2018	1511	Milestone Environmental Contracting Inc.		DA13798	7:39	7:55	54,180	19,860	34,320	TL2022132

DATE	Account1	Business Name	Vehicle id	Vehicle Licence	TIMEIN	TIMEOUT	GROSSW	TAREWT	Weight	TRANSNUM
29/05/2018	1511	Milestone Environmental Contracting Inc.		DA13798	9:51	10:05	53,450	19,830	33,620	TL2022193
29/05/2018	1511	Milestone Environmental Contracting Inc.		DA13798	11:17	11:30	54,690	19,800	34,890	TL2022263
29/05/2018	1511	Milestone Environmental Contracting Inc.		DA13798	12:43	12:59	55,170	19,770	35,400	TL2022337
29/05/2018	1511	Milestone Environmental Contracting Inc.		DA13798	14:13	14:38	55,450	19,760	35,690	TL2022424
29/05/2018	1511	Milestone Environmental Contracting Inc.		DA13798	16:01	16:15	57,730	19,730	38,000	TL2022502
30/05/2018	1511	Milestone Environmental Contracting Inc.		AM77544	8:06	8:14	52,930	19,780	33,150	TL2022618
30/05/2018	1511	Milestone Environmental Contracting Inc.		AM77579	7:51	8:02	54,730	19,520	35,210	TL2022609
30/05/2018	1511	Milestone Environmental Contracting Inc.		AN92745	7:44	7:57	55,010	20,250	34,760	TL2022604
30/05/2018	1511	Milestone Environmental Contracting Inc.		AV81786	7:28	7:47	52,710	19,930	32,780	TL2022595
30/05/2018	1511	Milestone Environmental Contracting Inc.		DA13798	8:05	8:19	54,630	19,860	34,770	TL2022617
04/06/2018	1511	Milestone Environmental Contracting Inc.		AB54863	10:11	10:23	54,710	19,000	35,710	TL2024362
04/06/2018	1511	Milestone Environmental Contracting Inc.		AB54863	12:57	13:10	53,240	18,930	34,310	TL2024506
04/06/2018	1511	Milestone Environmental Contracting Inc.		AB54868	14:19	14:32	50,680	18,900	31,780	TL2024558
04/06/2018	1511	Milestone Environmental Contracting Inc.		AD54863	8:23	8:34	50,960	19,000	31,960	TL2024280
04/06/2018	1511	Milestone Environmental Contracting Inc.		AD54863	11:33	11:48	53,750	18,940	34,810	TL2024436
04/06/2018	1511	Milestone Environmental Contracting Inc.		AD54863	16:07	16:24	54,800	18,870	35,930	TL2024612
04/06/2018	1511	Milestone Environmental Contracting Inc.		AM75544	11:42	11:51	52,380	19,350	33,030	TL2024447
04/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	8:25	8:37	54,920	19,400	35,520	TL2024281
04/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	10:28	10:38	53,850	19,380	34,470	TL2024377
04/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	13:12	13:20	54,460	19,320	35,140	TL2024516
04/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	14:28	14:38	52,800	19,290	33,510	TL2024564
04/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	16:20	16:35	57,660	19,300	38,360	TL2024615
04/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	9:14	9:28	52,270	19,450	32,820	TL2024317
04/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	10:53	11:03	55,280	19,410	35,870	TL2024396
04/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	12:17	12:35	58,110	19,400	38,710	TL2024472
04/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	13:46	14:15	49,790	19,460	30,330	TL2024537
04/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	15:45	16:20	34,880	19,350	15,530	TL2024604
04/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	11:06	11:27	54,520	20,130	34,390	TL2024410
04/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	12:34	12:48	52,600	20,100	32,500	TL2024486
04/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	13:53	14:16	51,870	20,080	31,790	TL2024541
04/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	15:53	16:21	53,990	20,010	33,980	TL2024606
05/06/2018	1511	Milestone Environmental Contracting Inc.		AD54863	13:07	13:17	49,980	19,000	30,980	TL2024911
05/06/2018	1511	Milestone Environmental Contracting Inc.		AD54868	8:18	8:28	54,430	19,120	35,310	TL2024704
05/06/2018	1511	Milestone Environmental Contracting Inc.		AD54868	10:12	10:26	54,360	19,090	35,270	TL2024769
05/06/2018	1511	Milestone Environmental Contracting Inc.		AD54868	11:39	11:53	56,400	19,060	37,340	TL2024846
05/06/2018	1511	Milestone Environmental Contracting Inc.		AD54868	14:22	14:39	51,270	19,000	32,270	TL2024973
05/06/2018	1511	Milestone Environmental Contracting Inc.		AD54868	16:12	16:24	48,750	18,970	29,780	TL2025040
05/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	8:34	8:44	51,190	19,390	31,800	TL2024711
05/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	10:21	10:35	52,320	19,350	32,970	TL2024776
05/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	11:42	11:54	52,770	19,320	33,450	TL2024848
05/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	13:11	13:22	50,560	19,290	31,270	TL2024917
05/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	14:34	14:45	50,110	19,290	30,820	TL2024980
05/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	16:25	16:39	51,340	19,240	32,100	TL2025045
05/06/2018	1511	Milestone Environmental Contracting Inc.		AR72303	7:58	8:11	54,510	19,930	34,580	TL2024693
05/06/2018	1511	Milestone Environmental Contracting Inc.		AR72303	9:58	10:10	56,250	19,890	36,360	TL2024756
05/06/2018	1511	Milestone Environmental Contracting Inc.		AR72303	11:23	11:38	55,570	19,880	35,690	TL2024831
05/06/2018	1511	Milestone Environmental Contracting Inc.		AR72303	12:45	12:59	52,420	19,830	32,590	TL2024898
05/06/2018	1511	Milestone Environmental Contracting Inc.		AR72303	14:13	14:31	53,320	19,820	33,500	TL2024971
05/06/2018	1511	Milestone Environmental Contracting Inc.		AR72303	16:04	16:20	49,160	19,780	29,380	TL2025035
05/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	7:45	8:01	53,120	20,090	33,030	TL2024689
05/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	9:44	9:58	56,050	20,070	35,980	TL2024752
05/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	11:02	11:22	53,610	20,030	33,580	TL2024804
05/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	12:28	12:49	53,800	19,990	33,810	TL2024879
05/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	13:55	14:22	52,330	19,990	32,340	TL2024957
05/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	15:49	16:19	50,910	19,950	30,960	TL2025025
05/06/2018	1511	Milestone Environmental Contracting Inc.		AV97937	7:53	8:05	55,280	20,350	34,930	TL2024691
05/06/2018	1511	Milestone Environmental Contracting Inc.		AV97937	9:45	10:00	59,100	20,330	38,770	TL2024754
05/06/2018	1511	Milestone Environmental Contracting Inc.		AV97937	11:20	11:33	54,840	20,280	34,560	TL2024827
05/06/2018	1511	Milestone Environmental Contracting Inc.		AV97937	12:41	12:53	57,450	20,250	37,200	TL2024894
05/06/2018	1511	Milestone Environmental Contracting Inc.		AV97937	14:06	14:29	51,370	20,260	31,110	TL2024967
05/06/2018	1511	Milestone Environmental Contracting Inc.		AV97937	15:57	16:17	54,080	20,200	33,880	TL2025028
06/06/2018	1511	Milestone Environmental Contracting Inc.		AD54868	8:04	8:25	48,250	19,120	29,130	TL2025125
06/06/2018	1511	Milestone Environmental Contracting Inc.		AD54868	9:58	10:15	50,860	19,060	31,800	TL2025190
06/06/2018	1511	Milestone Environmental Contracting Inc.		AD54868	11:22	11:37	53,250	19,040	34,210	TL2025262
06/06/2018	1511	Milestone Environmental Contracting Inc.		AD54868	13:06	13:20	51,220	19,000	32,220	TL2025346
06/06/2018	1511	Milestone Environmental Contracting Inc.		AD54868	14:37	14:54	50,420	18,970	31,450	TL2025417
06/06/2018	1511	Milestone Environmental Contracting Inc.		AD54868	16:13	16:32	53,010	18,930	34,080	TL2025503
06/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	8:23	8:35	49,430	19,380	30,050	TL2025135
06/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	10:11	10:24	52,000	19,340	32,660	TL2025200
06/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	11:40	11:55	52,110	19,330	32,780	TL2025280
06/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	13:19	13:31	50,260	19,280	30,980	TL2025357
06/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	15:06	15:39	47,610	19,240	28,370	TL2025436
06/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	8:18	8:30	46,340	19,480	26,860	TL2025130
06/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	10:05	10:19	54,590	19,420	35,170	TL2025196
06/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	11:31	11:48	49,140	19,390	29,750	TL2025271
06/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	13:11	13:26	49,890	19,340	30,550	TL2025352
06/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	15:04	15:40	50,300	19,290	31,010	TL2025435
06/06/2018	1511	Milestone Environmental Contracting Inc.		AR72303	8:00	8:14	53,600	19,940	33,660	TL2025124
06/06/2018	1511	Milestone Environmental Contracting Inc.		AR72303	9:46	9:56	52,330	19,890	32,440	TL2025177
06/06/2018	1511	Milestone Environmental Contracting Inc.		AR72303	11:11	11:24	52,020	19,860	32,160	TL2025249
06/06/2018	1511	Milestone Environmental Contracting Inc.		AR72303	12:53	13:08	52,940	19,810	33,130	TL2025336
06/06/2018	1511	Milestone Environmental Contracting Inc.		AR72303	14:24	14:43	51,170	19,780	31,390	TL2025403
06/06/2018	1511	Milestone Environmental Contracting Inc.		AR72303	16:02	16:20	51,890	19,670	32,220	TL2025494
06/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	7:41	7:55	49,530	20,100	29,430	TL2025114
06/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	9:28	9:45	49,240	20,070	29,170	TL2025164
06/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	10:57	11:19	54,140	20,160	33,980	TL2025231
06/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	12:29	12:51	53,250	19,980	33,270	TL2025317

DATE	Account1	Business Name	Vehicle id	Vehicle Licence	TIMEIN	TIMEOUT	GROSSW	TAREWT	Weight	TRANSNUM
06/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	14:02	14:19	51,600	19,960	31,640	TL2025387
06/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	15:33	16:10	49,840	19,910	29,930	TL2025458
06/06/2018	1511	Milestone Environmental Contracting Inc.		AV97937	7:47	8:02	52,720	20,360	32,360	TL2025118
06/06/2018	1511	Milestone Environmental Contracting Inc.		AV97937	9:37	9:50	54,320	20,310	34,010	TL2025172
06/06/2018	1511	Milestone Environmental Contracting Inc.		AV97937	11:07	11:23	55,310	20,300	35,010	TL2025243
06/06/2018	1511	Milestone Environmental Contracting Inc.		AV97937	12:40	12:57	53,810	20,260	33,550	TL2025326
06/06/2018	1511	Milestone Environmental Contracting Inc.		AV97937	14:11	14:28	54,270	20,210	34,060	TL2025391
06/06/2018	1511	Milestone Environmental Contracting Inc.		AV97937	15:46	16:14	53,460	20,190	33,270	TL2025473
07/06/2018	1511	Milestone Environmental Contracting Inc.		AD54868	8:03	8:13	51,400	19,070	32,330	TL2025591
07/06/2018	1511	Milestone Environmental Contracting Inc.		AD54868	9:55	10:05	53,080	19,030	34,050	TL2025654
07/06/2018	1511	Milestone Environmental Contracting Inc.		AD54868	11:16	11:27	53,980	19,010	34,970	TL2025716
07/06/2018	1511	Milestone Environmental Contracting Inc.		AD54868	12:38	12:56	51,010	18,970	32,040	TL2025789
07/06/2018	1511	Milestone Environmental Contracting Inc.		AD54868	14:14	14:25	53,630	18,930	34,700	TL2025860
07/06/2018	1511	Milestone Environmental Contracting Inc.		AD54868	16:16	17:08	54,100	18,900	35,200	TL2025964
07/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	8:18	8:32	48,640	19,360	29,280	TL2025605
07/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	10:16	10:30	51,740	19,330	32,410	TL2025673
07/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	11:41	11:51	53,150	19,300	33,850	TL2025740
07/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	12:55	13:08	52,740	19,270	33,470	TL2025805
07/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	14:37	14:48	51,110	19,240	31,870	TL2025872
07/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	16:37	17:11	53,140	19,210	33,930	TL2025980
07/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	8:16	8:25	51,130	19,440	31,690	TL2025602
07/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	10:07	10:16	52,030	19,370	32,660	TL2025664
07/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	11:24	11:35	53,670	19,360	34,310	TL2025724
07/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	12:50	13:05	54,650	19,330	35,320	TL2025800
07/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	14:31	14:43	51,720	19,290	32,430	TL2025868
07/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	16:34	17:10	51,990	19,280	32,710	TL2025976
07/06/2018	1511	Milestone Environmental Contracting Inc.		AR72303	7:55	8:11	52,010	19,860	32,150	TL2025588
07/06/2018	1511	Milestone Environmental Contracting Inc.		AR72303	9:49	10:00	54,320	19,800	34,520	TL2025651
07/06/2018	1511	Milestone Environmental Contracting Inc.		AR72303	11:06	11:19	50,850	19,780	31,070	TL2025706
07/06/2018	1511	Milestone Environmental Contracting Inc.		AR72303	12:28	12:55	55,420	19,740	35,680	TL2025781
07/06/2018	1511	Milestone Environmental Contracting Inc.		AR72303	14:05	14:23	53,580	19,730	33,850	TL2025855
07/06/2018	1511	Milestone Environmental Contracting Inc.		AR72303	16:04	16:21	55,840	19,690	36,150	TL2025951
07/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	7:42	7:56	46,850	20,030	26,820	TL2025581
07/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	9:28	9:42	52,700	19,990	32,710	TL2025640
07/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	10:46	11:06	50,730	19,960	30,770	TL2025691
07/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	12:07	12:46	50,860	19,930	30,930	TL2025765
07/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	13:47	14:16	53,980	19,910	34,070	TL2025845
07/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	15:41	16:03	52,950	19,850	33,100	TL2025935
07/06/2018	1511	Milestone Environmental Contracting Inc.		AV97937	7:49	8:01	50,350	20,310	30,040	TL2025586
07/06/2018	1511	Milestone Environmental Contracting Inc.		AV97937	9:39	9:54	54,930	20,270	34,660	TL2025645
07/06/2018	1511	Milestone Environmental Contracting Inc.		AV97937	11:02	11:14	52,260	20,250	32,010	TL2025701
07/06/2018	1511	Milestone Environmental Contracting Inc.		AV97937	12:18	12:50	56,310	20,230	36,080	TL2025774
07/06/2018	1511	Milestone Environmental Contracting Inc.		AV97937	13:55	14:21	57,030	20,170	36,860	TL2025849
07/06/2018	1511	Milestone Environmental Contracting Inc.		AV97937	15:52	16:18	54,200	20,140	34,060	TL2025943
08/06/2018	1511	Milestone Environmental Contracting Inc.		AD54868	7:57	8:10	49,190	18,870	30,320	TL2026055
08/06/2018	1511	Milestone Environmental Contracting Inc.		AD54868	9:35	9:49	48,690	18,820	29,870	TL2026115
08/06/2018	1511	Milestone Environmental Contracting Inc.		AD54868	11:00	11:11	48,720	18,770	29,950	TL2026171
08/06/2018	1511	Milestone Environmental Contracting Inc.		AD54868	12:22	12:36	43,680	18,760	24,920	TL2026251
08/06/2018	1511	Milestone Environmental Contracting Inc.		AD54868	13:51	14:18	49,360	18,720	30,640	TL2026327
08/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	8:06	8:22	48,420	19,340	29,080	TL2026066
08/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	9:43	9:55	46,940	19,300	27,640	TL2026118
08/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	11:04	11:16	49,140	19,280	29,860	TL2026175
08/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	12:34	12:45	46,350	19,280	27,070	TL2026261
08/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	14:04	14:19	50,650	19,230	31,420	TL2026336
08/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	8:12	8:28	50,260	19,350	30,910	TL2026072
08/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	9:50	10:01	50,360	19,320	31,040	TL2026123
08/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	11:17	11:34	48,310	19,280	29,030	TL2026185
08/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	12:46	12:59	49,170	19,270	29,900	TL2026274
08/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	14:13	14:36	48,560	19,230	29,330	TL2026347
08/06/2018	1511	Milestone Environmental Contracting Inc.		AR72303	7:53	8:06	50,590	19,880	30,710	TL2026051
08/06/2018	1511	Milestone Environmental Contracting Inc.		AR72303	9:29	9:41	47,980	19,850	28,130	TL2026112
08/06/2018	1511	Milestone Environmental Contracting Inc.		AR72303	10:49	11:03	53,040	19,800	33,240	TL2026160
08/06/2018	1511	Milestone Environmental Contracting Inc.		AR72303	12:17	12:29	47,480	19,800	27,680	TL2026245
08/06/2018	1511	Milestone Environmental Contracting Inc.		AR72303	13:44	14:15	47,930	19,750	28,180	TL2026318
08/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	7:37	7:52	49,810	20,000	29,810	TL2026042
08/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	9:16	9:31	50,430	19,960	30,470	TL2026102
08/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	10:32	10:50	51,120	19,930	31,190	TL2026148
08/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	11:58	12:12	50,550	19,880	30,670	TL2026226
08/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	13:25	13:38	52,980	19,870	33,110	TL2026304
08/06/2018	1511	Milestone Environmental Contracting Inc.		AV97937	7:46	8:01	52,090	20,290	31,800	TL2026046
08/06/2018	1511	Milestone Environmental Contracting Inc.		AV97937	9:23	9:37	52,420	20,260	32,160	TL2026108
08/06/2018	1511	Milestone Environmental Contracting Inc.		AV97937	10:41	10:54	52,020	20,250	31,770	TL2026154
08/06/2018	1511	Milestone Environmental Contracting Inc.		AV97937	12:08	12:22	50,010	20,220	29,790	TL2026237
08/06/2018	1511	Milestone Environmental Contracting Inc.		AV97937	13:35	14:14	51,260	20,170	31,090	TL2026311
11/06/2018	1511	Milestone Environmental Contracting Inc.		7663XX	8:35	8:51	49,240	20,460	28,780	TL2026960
11/06/2018	1511	Milestone Environmental Contracting Inc.		7663XX	10:28	10:40	49,330	20,430	28,900	TL2027039
11/06/2018	1511	Milestone Environmental Contracting Inc.		7663XX	11:50	12:05	49,810	20,400	29,410	TL2027117
11/06/2018	1511	Milestone Environmental Contracting Inc.		7663XX	13:12	13:27	48,640	20,380	28,260	TL2027199
11/06/2018	1511	Milestone Environmental Contracting Inc.		7663XX	14:39	14:58	51,010	20,330	30,680	TL2027277
11/06/2018	1511	Milestone Environmental Contracting Inc.		AD54868	8:13	8:26	50,370	18,990	31,380	TL2026944
11/06/2018	1511	Milestone Environmental Contracting Inc.		AD54868	10:10	10:22	47,280	18,960	28,320	TL2027024
11/06/2018	1511	Milestone Environmental Contracting Inc.		AD54868	11:47	12:06	50,670	18,920	31,750	TL2027114
11/06/2018	1511	Milestone Environmental Contracting Inc.		AD54868	13:18	13:30	49,260	18,920	30,340	TL2027203
11/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	8:04	8:15	47,070	19,330	27,740	TL2026940
11/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	10:05	10:18	49,560	19,300	30,260	TL2027019
11/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	11:39	11:51	49,570	19,270	30,300	TL2027108
11/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	13:00	13:15	46,380	19,250	27,130	TL2027188

DATE	Account1	Business Name	Vehicle id	Vehicle Licence	TIMEIN	TIMEOUT	GROSSW	TAREWT	Weight	TRANSNUM
11/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	14:20	14:48	50,060	19,210	30,850	TL2027261
11/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	8:48	8:58	48,560	19,370	29,190	TL2026970
11/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	10:32	10:43	45,810	19,350	26,460	TL2027044
11/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	11:58	12:17	47,950	19,340	28,610	TL2027127
11/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	13:33	13:47	47,920	19,290	28,630	TL2027219
11/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	15:15	15:33	49,610	19,250	30,360	TL2027296
11/06/2018	1511	Milestone Environmental Contracting Inc.		AR72303	7:54	8:05	44,930	19,810	25,120	TL2026933
11/06/2018	1511	Milestone Environmental Contracting Inc.		AR72303	9:58	10:13	48,480	19,780	28,700	TL2027013
11/06/2018	1511	Milestone Environmental Contracting Inc.		AR72303	11:31	11:44	49,770	19,740	30,030	TL2027102
11/06/2018	1511	Milestone Environmental Contracting Inc.		AR72303	12:52	13:05	44,500	19,720	24,780	TL2027181
11/06/2018	1511	Milestone Environmental Contracting Inc.		AR72303	14:13	14:47	54,180	19,640	34,540	TL2027251
11/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	7:45	7:58	46,750	19,940	26,810	TL2026928
11/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	9:45	10:00	48,700	19,910	28,790	TL2027002
11/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	11:08	12:11	43,910	19,890	24,020	TL2027082
11/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	13:26	13:42	53,320	19,870	33,450	TL2027210
11/06/2018	1511	Milestone Environmental Contracting Inc.		AV97937	7:47	8:02	49,430	20,270	29,160	TL2026929
11/06/2018	1511	Milestone Environmental Contracting Inc.		AV97937	9:51	10:04	49,930	20,240	29,690	TL2027007
11/06/2018	1511	Milestone Environmental Contracting Inc.		AV97937	11:21	11:37	54,870	20,210	34,660	TL2027091
11/06/2018	1511	Milestone Environmental Contracting Inc.		AV97937	12:45	13:00	45,480	20,180	25,300	TL2027175
11/06/2018	1511	Milestone Environmental Contracting Inc.		AV97937	14:28	14:40	54,350	20,150	34,200	TL2027270
12/06/2018	1511	Milestone Environmental Contracting Inc.		AD54868	7:06	7:18	51,960	18,870	33,090	TL2027430
12/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	7:40	7:51	50,270	19,320	30,950	TL2027451
12/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	9:25	9:37	50,920	19,280	31,640	TL2027505
12/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	10:44	10:55	53,700	19,260	34,440	TL2027565
12/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	12:03	12:17	48,630	19,240	29,390	TL2027641
12/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	13:22	13:42	50,130	19,210	30,920	TL2027715
12/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	14:51	15:09	51,440	19,160	32,280	TL2027799
12/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	16:46	17:13	59,200	19,160	40,040	TL2027874
12/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	8:17	8:30	50,100	19,310	30,790	TL2027473
12/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	10:09	10:23	56,830	19,290	37,540	TL2027541
12/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	15:12	15:32	51,400	19,220	32,180	TL2027820
12/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	17:25	17:42	52,090	19,210	32,880	TL2027902
12/06/2018	1511	Milestone Environmental Contracting Inc.		AR72303	8:07	8:18	50,950	19,850	31,100	TL2027467
12/06/2018	1511	Milestone Environmental Contracting Inc.		AR72303	9:56	10:08	54,870	19,730	35,140	TL2027529
12/06/2018	1511	Milestone Environmental Contracting Inc.		AR72303	11:16	11:31	56,270	19,780	36,490	TL2027593
12/06/2018	1511	Milestone Environmental Contracting Inc.		AR72303	12:38	12:57	51,030	19,760	31,270	TL2027678
12/06/2018	1511	Milestone Environmental Contracting Inc.		AR72303	14:07	14:34	48,680	19,650	29,030	TL2027756
12/06/2018	1511	Milestone Environmental Contracting Inc.		AR72303	16:00	16:35	55,230	19,690	35,540	TL2027846
12/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	7:49	8:03	50,440	19,950	30,490	TL2027455
12/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	9:36	9:50	51,230	19,920	31,310	TL2027513
12/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	10:55	11:10	54,740	19,870	34,870	TL2027574
12/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	12:18	12:49	51,850	19,850	32,000	TL2027660
12/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	14:02	14:18	47,880	19,810	28,070	TL2027747
12/06/2018	1511	Milestone Environmental Contracting Inc.		AV97937	7:58	8:09	52,850	20,220	32,630	TL2027460
12/06/2018	1511	Milestone Environmental Contracting Inc.		AV97937	9:49	10:02	52,300	20,190	32,110	TL2027523
12/06/2018	1511	Milestone Environmental Contracting Inc.		AV97937	11:07	11:22	57,240	20,160	37,080	TL2027587
12/06/2018	1511	Milestone Environmental Contracting Inc.		AV97937	12:32	12:55	55,630	20,120	35,510	TL2027671
13/06/2018	1511	Milestone Environmental Contracting Inc.		AB54868	14:00	14:20	52,270	18,960	33,310	TL2028243
13/06/2018	1511	Milestone Environmental Contracting Inc.		AD54868	10:56	11:07	52,460	19,010	33,450	TL2028092
13/06/2018	1511	Milestone Environmental Contracting Inc.		AD54868	12:21	12:50	51,530	18,960	32,570	TL2028177
13/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	7:32	7:43	56,010	19,320	36,690	TL2027956
13/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	9:27	9:38	53,790	19,320	34,470	TL2028025
13/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	10:55	11:09	53,280	19,310	33,970	TL2028091
13/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	12:57	13:11	51,880	19,250	32,630	TL2028203
13/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	14:14	14:26	50,150	19,240	30,910	TL2028248
13/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	15:47	16:14	52,770	19,200	33,570	TL2028297
13/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	7:45	8:07	57,760	19,990	37,770	TL2027968
13/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	10:00	10:17	55,160	19,990	35,170	TL2028048
13/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	11:38	11:54	52,190	19,960	32,230	TL2028135
13/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	13:06	13:19	51,830	19,910	31,920	TL2028211
13/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	14:24	14:35	50,700	19,910	30,790	TL2028252
13/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	15:46	16:15	53,570	19,890	33,680	TL2028296
13/06/2018	1511	Milestone Environmental Contracting Inc.		AV97937	9:00	9:13	52,070	20,250	31,820	TL2028008
13/06/2018	1511	Milestone Environmental Contracting Inc.		AV97937	10:44	11:02	58,150	20,260	37,890	TL2028083
13/06/2018	1511	Milestone Environmental Contracting Inc.		AV97937	12:13	12:43	53,220	20,200	33,020	TL2028168
13/06/2018	1511	Milestone Environmental Contracting Inc.		AV97937	13:52	14:17	53,180	20,200	32,980	TL2028236
13/06/2018	1511	Milestone Environmental Contracting Inc.		AV97937	15:40	16:13	54,340	20,180	34,160	TL2028293
14/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	7:45	7:57	54,850	19,360	35,490	TL2028384
14/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	9:41	9:55	50,410	19,330	31,080	TL2028430
14/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	11:10	11:22	53,720	19,300	34,420	TL2028498
14/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	12:27	12:39	52,240	19,270	32,970	TL2028560
14/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	13:48	14:22	52,730	19,240	33,490	TL2028612
14/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	15:50	16:11	55,630	19,210	36,420	TL2028698
14/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	8:22	8:32	52,330	19,350	32,980	TL2028398
14/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	10:19	10:30	49,710	19,300	30,410	TL2028456
14/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	11:41	11:53	52,690	19,270	33,420	TL2028523
14/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	13:08	13:24	52,540	19,270	33,270	TL2028592
14/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	14:35	15:00	55,220	19,220	36,000	TL2028652
14/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	16:44	17:11	54,040	19,170	34,870	TL2028719
14/06/2018	1511	Milestone Environmental Contracting Inc.		AR72303	7:53	8:04	55,950	19,850	36,100	TL2028388
14/06/2018	1511	Milestone Environmental Contracting Inc.		AR72303	9:48	10:01	50,760	19,820	30,940	TL2028434
14/06/2018	1511	Milestone Environmental Contracting Inc.		AR72303	11:13	11:23	51,770	19,800	31,970	TL2028500
14/06/2018	1511	Milestone Environmental Contracting Inc.		AR72303	12:40	12:53	53,200	19,750	33,450	TL2028570
14/06/2018	1511	Milestone Environmental Contracting Inc.		AR72303	14:02	14:34	54,850	19,720	35,130	TL2028621
14/06/2018	1511	Milestone Environmental Contracting Inc.		AR72303	16:07	16:18	52,330	19,690	32,640	TL2028706
14/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	8:13	8:26	52,430	20,010	32,420	TL2028397
14/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	10:07	10:27	48,860	19,970	28,890	TL2028450

DATE	Account1	Business Name	Vehicle id	Vehicle Licence	TIMEIN	TIMEOUT	GROSSW	TAREWT	Weight	TRANSNUM
14/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	11:33	11:48	51,020	19,980	31,040	TL2028518
14/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	12:58	13:09	50,820	19,900	30,920	TL2028584
14/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	14:20	14:32	53,290	19,880	33,410	TL2028639
14/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	15:58	16:12	53,690	19,840	33,850	TL2028701
14/06/2018	1511	Milestone Environmental Contracting Inc.		AV97937	8:02	8:14	53,050	20,300	32,750	TL2028395
14/06/2018	1511	Milestone Environmental Contracting Inc.		AV97937	9:59	10:14	49,760	20,520	29,240	TL2028444
14/06/2018	1511	Milestone Environmental Contracting Inc.		AV97937	11:25	11:42	54,580	20,250	34,330	TL2028509
14/06/2018	1511	Milestone Environmental Contracting Inc.		AV97937	12:49	13:08	51,140	20,210	30,930	TL2028577
14/06/2018	1511	Milestone Environmental Contracting Inc.		AV97937	14:13	14:35	55,480	20,180	35,300	TL2028630
14/06/2018	1511	Milestone Environmental Contracting Inc.		AV97937	16:18	16:32	54,700	20,130	34,570	TL2028710
15/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	8:00	8:10	45,790	19,370	26,420	TL2028800
15/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	9:39	9:50	51,470	19,330	32,140	TL2028845
15/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	11:06	11:30	50,270	19,300	30,970	TL2028900
15/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	7:46	7:57	46,090	19,390	26,700	TL2028786
15/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	9:34	9:43	50,690	19,360	31,330	TL2028841
15/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	11:02	11:27	51,740	19,330	32,410	TL2028898
15/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	7:36	7:49	49,160	20,030	29,130	TL2028779
15/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	9:20	9:36	52,850	19,980	32,870	TL2028830
15/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	10:50	11:11	50,900	19,950	30,950	TL2028887
18/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	8:30	8:41	50,080	19,330	30,750	TL2029584
18/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	10:07	10:19	52,130	19,320	32,810	TL2029669
18/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	11:23	11:39	51,420	19,290	32,130	TL2029737
18/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	12:42	12:52	51,150	19,240	31,910	TL2029806
18/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	14:01	14:16	54,150	19,200	34,950	TL2029871
18/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	15:39	16:06	46,840	19,200	27,640	TL2029958
18/06/2018	1511	Milestone Environmental Contracting Inc.		AN92745	8:32	8:49	50,380	19,840	30,540	TL2029587
18/06/2018	1511	Milestone Environmental Contracting Inc.		AN92745	10:20	10:38	47,590	19,840	27,750	TL2029676
18/06/2018	1511	Milestone Environmental Contracting Inc.		AN92745	11:49	12:03	50,810	19,810	31,000	TL2029764
18/06/2018	1511	Milestone Environmental Contracting Inc.		AN92745	13:09	13:26	48,610	19,760	28,850	TL2029826
18/06/2018	1511	Milestone Environmental Contracting Inc.		AN92745	14:38	14:54	53,380	19,720	33,660	TL2029907
18/06/2018	1511	Milestone Environmental Contracting Inc.		AN92745	16:27	16:48	52,090	19,710	32,380	TL2030000
18/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	8:31	8:46	49,950	20,000	29,950	TL2029586
18/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	10:14	10:30	52,670	19,970	32,700	TL2029673
18/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	11:38	11:58	47,970	19,940	28,030	TL2029751
18/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	13:04	13:20	48,580	19,910	28,670	TL2029820
18/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	14:26	14:39	50,480	19,840	30,640	TL2029895
18/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	15:56	16:16	52,440	19,830	32,610	TL2029974
19/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	7:56	8:07	50,730	19,330	31,400	TL2030088
19/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	9:46	9:57	55,820	19,300	36,520	TL2030139
19/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	11:14	11:26	56,870	19,280	37,590	TL2030209
19/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	12:48	13:02	52,750	19,250	33,500	TL2030282
19/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	14:06	14:22	53,030	19,220	33,810	TL2030347
19/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	16:02	16:36	53,220	19,180	34,040	TL2030435
19/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	8:06	8:14	53,790	19,940	33,850	TL2030089
19/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	9:58	10:08	50,730	19,880	30,850	TL2030146
19/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	11:29	11:38	57,630	19,850	37,780	TL2030221
19/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	12:58	13:12	56,710	19,870	36,840	TL2030290
19/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	14:24	14:38	53,660	19,830	33,830	TL2030362
19/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	16:12	17:30	50,660	19,790	30,870	TL2030441
19/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	7:42	7:53	54,900	19,960	34,940	TL2030081
19/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	9:38	9:51	51,690	19,940	31,750	TL2030134
19/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	11:07	11:25	53,770	19,900	33,870	TL2030201
19/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	12:35	12:49	51,680	19,880	31,800	TL2030269
19/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	13:57	14:18	53,310	19,840	33,470	TL2030341
19/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	15:49	16:15	48,130	19,810	28,320	TL2030427
20/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	8:25	8:43	49,860	19,270	30,590	TL2030564
20/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	10:35	10:45	50,740	19,250	31,490	TL2030652
20/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	12:04	12:23	49,130	19,210	29,920	TL2030742
20/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	13:39	14:06	53,580	19,200	34,380	TL2030824
20/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	15:40	16:07	52,440	19,170	33,270	TL2030917
20/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	8:25	8:41	55,510	19,960	35,550	TL2030563
20/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	10:28	10:38	52,570	19,930	32,640	TL2030645
20/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	11:57	12:13	52,130	19,900	32,230	TL2030732
20/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	13:35	13:51	53,480	19,820	33,660	TL2030822
20/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	15:14	15:40	55,260	19,790	35,470	TL2030894
20/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	8:24	8:37	51,130	19,920	31,210	TL2030562
20/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	10:17	10:31	52,500	19,880	32,620	TL2030635
20/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	11:42	12:03	50,180	19,860	30,320	TL2030719
20/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	13:25	13:48	53,380	19,840	33,540	TL2030811
20/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	14:57	15:24	53,750	19,820	33,930	TL2030884
21/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	7:56	8:08	51,210	19,330	31,880	TL2031035
21/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	9:59	10:12	50,870	19,300	31,570	TL2031107
21/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	11:31	11:46	52,330	19,270	33,060	TL2031198
21/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	12:48	13:01	50,800	19,250	31,550	TL2031274
21/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	14:24	14:45	53,900	19,220	34,680	TL2031355
21/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	16:16	16:41	54,410	19,180	35,230	TL2031437
21/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	8:10	8:21	50,980	19,910	31,070	TL2031041
21/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	10:16	10:27	55,850	19,890	35,960	TL2031123
21/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	11:51	12:00	54,430	19,840	34,590	TL2031220
21/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	13:06	13:16	54,130	19,820	34,310	TL2031287
21/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	14:37	15:03	52,770	19,790	32,980	TL2031365
21/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	16:54	17:07	56,000	19,760	36,240	TL2031458
21/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	7:47	8:00	52,270	19,920	32,350	TL2031028
21/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	9:40	9:52	51,180	19,900	31,280	TL2031099
21/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	11:11	11:24	51,670	19,870	31,800	TL2031179
21/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	12:37	12:53	50,170	19,850	30,320	TL2031267
21/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	14:06	14:23	53,420	19,810	33,610	TL2031337

DATE	Account1	Business Name	Vehicle id	Vehicle Licence	TIMEIN	TIMEOUT	GROSSW	TAREWT	Weight	TRANSNUM
21/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	15:57	16:11	53,760	19,770	33,990	TL2031424
21/06/2018	1511	Milestone Environmental Contracting Inc.		L688627	9:05	9:23	44,890	18,780	26,110	TL2031076
21/06/2018	1511	Milestone Environmental Contracting Inc.		L688627	11:07	11:21	52,300	18,740	33,560	TL2031174
21/06/2018	1511	Milestone Environmental Contracting Inc.		L688627	12:29	12:44	51,610	18,710	32,900	TL2031260
21/06/2018	1511	Milestone Environmental Contracting Inc.		L688627	13:58	14:18	51,080	18,680	32,400	TL2031330
21/06/2018	1511	Milestone Environmental Contracting Inc.		L688627	15:46	15:57	55,970	18,650	37,320	TL2031414
21/06/2018	1511	Milestone Environmental Contracting Inc.		L741659	9:49	10:03	50,350	20,160	30,190	TL2031104
21/06/2018	1511	Milestone Environmental Contracting Inc.		L741659	11:20	11:40	53,750	20,120	33,630	TL2031186
21/06/2018	1511	Milestone Environmental Contracting Inc.		L741659	14:14	14:35	55,820	20,080	35,740	TL2031347
21/06/2018	1511	Milestone Environmental Contracting Inc.		L741659	16:09	16:20	60,700	20,060	40,640	TL2031433
21/06/2018	1511	Milestone Environmental Contracting Inc.		L741671	8:52	9:16	46,460	18,930	27,530	TL2031067
21/06/2018	1511	Milestone Environmental Contracting Inc.		L741671	10:48	11:01	56,570	18,900	37,670	TL2031155
21/06/2018	1511	Milestone Environmental Contracting Inc.		L741671	12:14	12:28	52,920	18,880	34,040	TL2031246
21/06/2018	1511	Milestone Environmental Contracting Inc.		L741671	13:36	13:59	51,670	18,830	32,840	TL2031311
21/06/2018	1511	Milestone Environmental Contracting Inc.		L741671	15:11	15:28	56,500	18,800	37,700	TL2031393
22/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	7:50	8:06	54,080	19,330	34,750	TL2031537
22/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	9:36	9:54	52,820	19,310	33,510	TL2031603
22/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	11:27	11:42	56,120	19,280	36,840	TL2031705
22/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	12:56	13:09	56,210	19,260	36,950	TL2031788
22/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	14:24	14:51	54,230	19,220	35,010	TL2031873
22/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	8:02	8:15	52,460	19,880	32,580	TL2031544
22/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	9:43	9:57	54,030	19,860	34,170	TL2031611
22/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	11:37	11:53	53,950	19,830	34,120	TL2031716
22/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	13:17	13:29	57,370	19,830	37,540	TL2031803
22/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	14:46	15:13	57,800	19,780	38,020	TL2031890
22/06/2018	1511	Milestone Environmental Contracting Inc.		AN92745	8:17	8:27	54,050	19,870	34,180	TL2031554
22/06/2018	1511	Milestone Environmental Contracting Inc.		AN92745	10:03	10:16	54,520	19,840	34,680	TL2031625
22/06/2018	1511	Milestone Environmental Contracting Inc.		AN92745	11:45	11:57	54,740	19,810	34,930	TL2031724
22/06/2018	1511	Milestone Environmental Contracting Inc.		AN92745	13:26	13:40	56,480	19,780	36,700	TL2031812
22/06/2018	1511	Milestone Environmental Contracting Inc.		AN92745	15:03	15:17	55,260	19,750	35,510	TL2031901
22/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	7:44	8:00	53,800	19,920	33,880	TL2031533
22/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	9:28	9:45	54,070	19,880	34,190	TL2031597
22/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	11:08	11:22	53,510	19,850	33,660	TL2031686
22/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	12:44	13:00	59,020	19,830	39,190	TL2031781
22/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	14:20	14:49	56,420	19,800	36,620	TL2031867
22/06/2018	1511	Milestone Environmental Contracting Inc.		L688627	8:52	9:02	53,700	18,700	35,000	TL2031569
22/06/2018	1511	Milestone Environmental Contracting Inc.		L688627	10:19	10:36	55,620	18,660	36,960	TL2031645
22/06/2018	1511	Milestone Environmental Contracting Inc.		L688627	12:07	12:22	59,780	18,640	41,140	TL2031746
22/06/2018	1511	Milestone Environmental Contracting Inc.		L688627	13:57	14:12	54,490	18,610	35,880	TL2031839
22/06/2018	1511	Milestone Environmental Contracting Inc.		L741659	10:36	10:53	62,390	20,090	42,300	TL2031658
22/06/2018	1511	Milestone Environmental Contracting Inc.		L741659	12:14	12:27	63,710	20,060	43,650	TL2031754
22/06/2018	1511	Milestone Environmental Contracting Inc.		L741659	14:21	14:31	61,640	20,020	41,620	TL2031868
22/06/2018	1511	Milestone Environmental Contracting Inc.		L741671	8:42	8:53	53,790	18,850	34,940	TL2031565
22/06/2018	1511	Milestone Environmental Contracting Inc.		L741671	10:10	10:22	55,130	18,820	36,310	TL2031633
22/06/2018	1511	Milestone Environmental Contracting Inc.		L741671	11:58	12:11	64,240	18,800	45,440	TL2031737
22/06/2018	1511	Milestone Environmental Contracting Inc.		L741671	13:46	13:58	57,320	18,770	38,550	TL2031829
25/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	7:40	7:56	50,660	19,320	31,340	TL2032431
25/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	9:15	9:26	53,760	19,290	34,470	TL2032478
25/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	10:27	10:45	52,440	19,260	33,180	TL2032551
25/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	11:48	12:09	54,590	19,230	35,360	TL2032634
25/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	13:17	13:47	53,120	19,210	33,910	TL2032719
25/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	14:51	15:31	54,590	19,170	35,420	TL2032823
25/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	7:48	8:02	51,940	19,870	32,070	TL2032433
25/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	9:23	9:33	53,390	19,830	33,560	TL2032485
25/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	10:34	10:55	54,240	19,830	34,410	TL2032560
25/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	12:09	12:30	54,980	19,840	35,140	TL2032651
25/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	13:30	13:55	54,250	19,760	34,490	TL2032734
25/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	15:03	15:37	50,070	19,720	30,350	TL2032833
25/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	7:33	7:49	51,680	19,980	31,700	TL2032426
25/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	10:20	10:40	53,240	19,930	33,310	TL2032542
25/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	11:43	12:08	53,560	19,910	33,650	TL2032630
25/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	13:10	13:38	53,540	19,870	33,670	TL2032710
25/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	14:42	15:16	55,280	19,860	35,420	TL2032810
25/06/2018	1511	Milestone Environmental Contracting Inc.		L688627	8:35	8:48	52,300	18,860	33,440	TL2032459
25/06/2018	1511	Milestone Environmental Contracting Inc.		L688627	10:01	10:12	48,080	18,820	29,260	TL2032522
25/06/2018	1511	Milestone Environmental Contracting Inc.		L688627	11:20	11:34	58,240	18,790	39,450	TL2032602
25/06/2018	1511	Milestone Environmental Contracting Inc.		L688627	12:39	12:51	54,990	18,780	36,210	TL2032675
25/06/2018	1511	Milestone Environmental Contracting Inc.		L688627	13:54	14:29	48,910	18,730	30,180	TL2032756
25/06/2018	1511	Milestone Environmental Contracting Inc.		L688627	15:41	16:13	55,310	18,710	36,600	TL2032878
25/06/2018	1511	Milestone Environmental Contracting Inc.		L741659	8:31	8:43	58,760	20,150	38,610	TL2032457
25/06/2018	1511	Milestone Environmental Contracting Inc.		L741659	9:54	10:09	52,460	20,120	32,340	TL2032514
25/06/2018	1511	Milestone Environmental Contracting Inc.		L741659	11:21	11:39	59,790	20,080	39,710	TL2032603
25/06/2018	1511	Milestone Environmental Contracting Inc.		L741659	12:50	13:04	58,620	20,060	38,560	TL2032688
25/06/2018	1511	Milestone Environmental Contracting Inc.		L741659	14:09	14:46	57,310	20,040	37,270	TL2032773
25/06/2018	1511	Milestone Environmental Contracting Inc.		L741659	16:14	16:36	52,990	20,000	32,990	TL2032909
25/06/2018	1511	Milestone Environmental Contracting Inc.		L741671	8:37	8:51	53,160	18,880	34,280	TL2032460
25/06/2018	1511	Milestone Environmental Contracting Inc.		L741671	10:11	10:25	53,740	18,860	34,880	TL2032532
25/06/2018	1511	Milestone Environmental Contracting Inc.		L741671	11:31	11:54	52,230	18,840	33,390	TL2032617
25/06/2018	1511	Milestone Environmental Contracting Inc.		L741671	13:06	13:19	54,480	18,800	35,680	TL2032705
25/06/2018	1511	Milestone Environmental Contracting Inc.		L741671	14:24	14:48	55,680	18,800	36,880	TL2032789
25/06/2018	1511	Milestone Environmental Contracting Inc.		L741671	16:12	16:35	50,470	18,750	31,720	TL2032907
26/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	7:56	8:08	52,380	19,330	33,050	TL2033011
26/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	9:40	9:52	55,820	19,290	36,530	TL2033068
26/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	11:02	11:21	52,200	19,270	32,930	TL2033152
26/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	12:24	12:43	53,260	19,240	34,020	TL2033228
26/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	14:03	14:21	58,000	19,220	38,780	TL2033323
26/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	15:37	16:13	53,910	19,190	34,720	TL2033412

DATE	Account1	Business Name	Vehicle id	Vehicle Licence	TIMEIN	TIMEOUT	GROSSW TAREWT	Weight	TRANSNUM
26/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	8:04	8:21	53,170	19,770	33,400 TL2033017
26/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	10:00	10:16	56,440	20,240	36,200 TL2033085
26/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	11:33	11:50	53,140	19,720	33,420 TL2033186
26/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	13:00	13:13	56,290	19,690	36,600 TL2033260
26/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	14:39	15:02	57,130	19,750	37,380 TL2033360
26/06/2018	1511	Milestone Environmental Contracting Inc.		AM77579	16:54	17:11	58,120	19,650	38,470 TL2033467
26/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	7:51	8:13	52,460	19,980	32,480 TL2033006
26/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	9:52	10:14	53,550	19,970	33,580 TL2033079
26/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	12:40	13:01	53,200	19,930	33,270 TL2033242
26/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	14:15	14:44	55,440	19,890	35,550 TL2033336
26/06/2018	1511	Milestone Environmental Contracting Inc.		L741659	8:59	9:10	60,820	20,110	40,710 TL2033039
26/06/2018	1511	Milestone Environmental Contracting Inc.		L741659	10:30	10:48	62,110	20,090	42,020 TL2033114
26/06/2018	1511	Milestone Environmental Contracting Inc.		L741659	12:13	12:29	57,730	20,060	37,670 TL2033221
26/06/2018	1511	Milestone Environmental Contracting Inc.		L741671	8:46	8:58	51,920	18,890	33,030 TL2033036
26/06/2018	1511	Milestone Environmental Contracting Inc.		L741671	10:07	10:20	56,430	18,850	37,580 TL2033089
26/06/2018	1511	Milestone Environmental Contracting Inc.		L741671	11:25	11:41	51,760	18,840	32,920 TL2033179
26/06/2018	1511	Milestone Environmental Contracting Inc.		L741671	12:46	13:04	49,750	18,800	30,950 TL2033250
27/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	8:00	8:15	57,160	19,320	37,840 TL2033543
27/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	9:52	10:16	59,550	19,290	40,260 TL2033623
27/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	11:25	11:43	52,600	19,260	33,340 TL2033704
27/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	12:51	13:14	52,940	19,230	33,710 TL2033791
27/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	14:18	14:43	51,050	19,210	31,840 TL2033878
27/06/2018	1511	Milestone Environmental Contracting Inc.		AM77544	16:19	16:27	58,670	19,180	39,490 TL2033977
27/06/2018	1511	Milestone Environmental Contracting Inc.		AN92745	7:43	7:58	54,940	19,890	35,050 TL2033528
27/06/2018	1511	Milestone Environmental Contracting Inc.		AN92745	9:37	9:56	57,510	19,850	37,660 TL2033610
27/06/2018	1511	Milestone Environmental Contracting Inc.		AN92745	11:10	11:24	58,830	19,820	39,010 TL2033692
27/06/2018	1511	Milestone Environmental Contracting Inc.		AN92745	13:29	13:51	52,240	19,770	32,470 TL2033833
27/06/2018	1511	Milestone Environmental Contracting Inc.		AN92745	15:04	15:29	59,800	19,740	40,060 TL2033923
27/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	7:53	8:08	55,890	19,980	35,910 TL2033536
27/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	9:46	10:18	57,640	19,950	37,690 TL2033618
27/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	11:32	11:53	54,620	19,920	34,700 TL2033713
27/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	13:01	13:23	50,280	19,910	30,370 TL2033804
27/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	14:28	14:53	50,290	19,860	30,430 TL2033891
27/06/2018	1511	Milestone Environmental Contracting Inc.		AV81786	16:35	16:53	50,520	19,830	30,690 TL2033984
04/09/2018	1511	Milestone Environmental Contracting Inc.		AM77579	7:37	7:43	31,710	13,650	18,060 TL2057269
04/09/2018	1511	Milestone Environmental Contracting Inc.		AM77579	9:20	9:28	33,110	13,640	19,470 TL2057364
04/09/2018	1511	Milestone Environmental Contracting Inc.		AM77579	10:59	11:29	34,570	13,610	20,960 TL2057479
04/09/2018	1511	Milestone Environmental Contracting Inc.		AM77579	12:37	13:12	35,600	13,580	22,020 TL2057596
04/09/2018	1511	Milestone Environmental Contracting Inc.		AM77579	16:08	16:35	32,800	13,540	19,260 TL2057799
04/09/2018	1511	Milestone Environmental Contracting Inc.		AM77591	8:28	8:43	35,310	13,660	21,650 TL2057321
04/09/2018	1511	Milestone Environmental Contracting Inc.		AM77591	10:26	10:45	35,330	13,630	21,700 TL2057437
04/09/2018	1511	Milestone Environmental Contracting Inc.		AM77591	12:01	12:34	34,830	13,600	21,230 TL2057553
04/09/2018	1511	Milestone Environmental Contracting Inc.		AM77591	13:54	14:15	36,110	13,590	22,520 TL2057668
04/09/2018	1511	Milestone Environmental Contracting Inc.		AM77591	15:24	15:44	36,270	13,560	22,710 TL2057758
04/09/2018	1511	Milestone Environmental Contracting Inc.		AM77676	14:27	14:55	33,800	13,560	20,240 TL2057709
05/09/2018	1511	Milestone Environmental Contracting Inc.		AF77771	7:50	8:01	33,340	13,110	20,230 TL2057936
05/09/2018	1511	Milestone Environmental Contracting Inc.		AF77771	9:21	9:29	30,100	13,100	17,000 TL2058013
05/09/2018	1511	Milestone Environmental Contracting Inc.		AF77771	10:54	11:02	32,980	13,080	19,900 TL2058103
05/09/2018	1511	Milestone Environmental Contracting Inc.		AF77771	12:06	12:10	31,770	13,060	18,710 TL2058168
05/09/2018	1511	Milestone Environmental Contracting Inc.		AF77771	13:22	13:26	35,100	13,040	22,060 TL2058231
05/09/2018	1511	Milestone Environmental Contracting Inc.		AF77771	14:58	15:20	35,330	13,030	22,300 TL2058323
05/09/2018	1511	Milestone Environmental Contracting Inc.		AM77579	7:28	7:35	31,340	13,650	17,690 TL2057914
05/09/2018	1511	Milestone Environmental Contracting Inc.		AM77579	8:54	9:00	31,660	13,620	18,040 TL2057985
05/09/2018	1511	Milestone Environmental Contracting Inc.		AM77579	10:10	10:15	32,090	13,590	18,500 TL2058060
05/09/2018	1511	Milestone Environmental Contracting Inc.		AM77579	11:18	11:24	31,520	13,580	17,940 TL2058132
05/09/2018	1511	Milestone Environmental Contracting Inc.		AM77579	12:22	12:29	31,000	13,560	17,440 TL2058182
05/09/2018	1511	Milestone Environmental Contracting Inc.		AM77579	13:30	13:42	33,820	13,550	20,270 TL2058241
05/09/2018	1511	Milestone Environmental Contracting Inc.		AM77591	7:34	7:45	33,080	13,650	19,430 TL2057921
05/09/2018	1511	Milestone Environmental Contracting Inc.		AM77591	9:14	9:22	34,210	13,620	20,590 TL2058003
05/09/2018	1511	Milestone Environmental Contracting Inc.		AM77591	10:32	10:40	32,830	13,600	19,230 TL2058078
05/09/2018	1511	Milestone Environmental Contracting Inc.		AM77591	11:55	12:03	33,480	13,570	19,910 TL2058159
05/09/2018	1511	Milestone Environmental Contracting Inc.		AM77591	13:07	13:15	32,300	13,570	18,730 TL2058221
05/09/2018	1511	Milestone Environmental Contracting Inc.		AM77591	14:18	14:26	34,520	13,540	20,980 TL2058290
05/09/2018	1511	Milestone Environmental Contracting Inc.		AM77591	14:53	15:15	34,400	13,510	20,890 TL2058318
05/09/2018	1511	Milestone Environmental Contracting Inc.		AM77591	15:37	15:50	33,200	13,520	19,680 TL2058349
05/09/2018	1511	Milestone Environmental Contracting Inc.		AR89213	7:44	7:57	33,630	13,380	20,250 TL2057931
05/09/2018	1511	Milestone Environmental Contracting Inc.		AR89213	9:26	9:35	29,160	13,200	15,960 TL2058021
05/09/2018	1511	Milestone Environmental Contracting Inc.		AR89213	10:43	10:50	33,730	13,180	20,550 TL2058089
05/09/2018	1511	Milestone Environmental Contracting Inc.		AR89213	12:13	12:17	30,920	13,160	17,760 TL2058175
05/09/2018	1511	Milestone Environmental Contracting Inc.		AR89213	13:22	13:29	32,440	13,140	19,300 TL2058232
05/09/2018	1511	Milestone Environmental Contracting Inc.		AR89213	14:57	15:19	32,600	13,120	19,480 TL2058322
05/09/2018	1511	Milestone Environmental Contracting Inc.		DADS2013	7:51	8:00	30,060	13,850	16,210 TL2057938
06/09/2018	1511	Milestone Environmental Contracting Inc.		AM77529	7:25	7:31	31,500	13,610	17,890 TL2058440
06/09/2018	1511	Milestone Environmental Contracting Inc.		AM77579	9:03	9:21	31,700	13,570	18,130 TL2058506
06/09/2018	1511	Milestone Environmental Contracting Inc.		AM77579	10:31	10:46	30,390	13,560	16,830 TL2058588
06/09/2018	1511	Milestone Environmental Contracting Inc.		AM77579	12:00	12:19	35,050	13,540	21,510 TL2058682
06/09/2018	1511	Milestone Environmental Contracting Inc.		AM77579	14:16	14:24	34,720	13,510	21,210 TL2058800
06/09/2018	1511	Milestone Environmental Contracting Inc.		AM77579	15:32	16:04	33,270	13,500	19,770 TL2058864
06/09/2018	1511	Milestone Environmental Contracting Inc.		AN75611	11:24	11:36	32,720	15,190	17,530 TL2058641
06/09/2018	1511	Milestone Environmental Contracting Inc.		AN75611	13:58	14:08	39,780	15,160	24,620 TL2058778
06/09/2018	1511	Milestone Environmental Contracting Inc.		AN75611	15:51	16:02	36,040	15,140	20,900 TL2058885
07/09/2018	1511	Milestone Environmental Contracting Inc.		AF77771	7:38	7:42	32,730	13,120	19,610 TL2059001
07/09/2018	1511	Milestone Environmental Contracting Inc.		AF77771	9:30	9:40	31,720	13,090	18,630 TL2059074
07/09/2018	1511	Milestone Environmental Contracting Inc.		AM77579	7:15	7:21	33,100	13,650	19,450 TL2058988
07/09/2018	1511	Milestone Environmental Contracting Inc.		AM77579	8:46	8:55	34,780	13,620	21,160 TL2059047
07/09/2018	1511	Milestone Environmental Contracting Inc.		AM77591	7:19	7:26	32,070	13,680	18,390 TL2058992
07/09/2018	1511	Milestone Environmental Contracting Inc.		AM77591	9:29	9:39	32,000	13,650	18,350 TL2059073

DATE	Account1	Business Name	Vehicle id	Vehicle Licence	TIMEIN	TIMEOUT	GROSSW	TAREWT	Weight	TRANSNUM
07/09/2018	1511	Milestone Environmental Contracting Inc.		AR89213	7:20	7:27	33,090	13,200	19,890	TL2058993
07/09/2018	1511	Milestone Environmental Contracting Inc.		AR89213	9:27	9:38	32,840	13,180	19,660	TL2059072

Attn: MARK SEAMAN

Duplicate / Copie

MILESTONE ENVIRONMENTAL
CONTRACTING INC.
1550 LAPERRIERE AVE SUITE 200
OTTAWA ON K1Z 7T2

Invoice	
Invoice No.: N° de facture:	90899905
Date: (Y/A M/M D/J)	2018/11/30
Page:	1
Customer No.: N° de client:	GEO1511
Amount - Montant:	509.05
Payment - Remise:	

PLEASE RETURN TOP PORTION WITH YOUR PAYMENT / S.V.P RETOURNEZ CETTE PORTION AVEC PAIEMENT

Invoice-facture	Date (Y/A M/M D/J)	Customer-Client	Payment terms - Termes de paiement
90899905	2018/11/30	GEO1511	Payment is due 30 days from date of invoice / Le paiement est payable dans les 30 jours suivant la date de la facturation
An overdue account is subject to annual compounded interest of 16.08%. Dishonoured payments will be subject to a \$45.00 fee. Des frais d'intérêts annuel composés de 16.08% s'appliquent aux comptes en souffrance. Tout paiement impayé fera l'objet de frais de 45,00\$.			

Manifest #	Date Y/A M/M D/J	Sold to Vendu à	Description	Quantity Quantité	Amount Montant																				
TL2082795	2018/11/09	AN92745	Soil / fill	18,510.00 KG	509.05																				
Sub-total: (before HST)					509.05																				
HST: (included in above items)					0.00																				
<table><tr><td>Approved by:</td><td>Emmanuel Saydeh</td></tr><tr><td>Date Signed:</td><td>Dec 10, 2018, 10:12 am</td></tr><tr><td>Cost Code:</td><td></td></tr><tr><td>Signature:</td><td></td></tr></table><table><tr><td>Date Received</td><td>12/05/2018</td></tr><tr><td>Company</td><td>MECI</td></tr><tr><td>Vendor I.D</td><td>CITY01</td></tr><tr><td>Job No. / G/L</td><td>2018-015</td></tr><tr><td>Cost Code / Type</td><td></td></tr><tr><td>Cheque No.</td><td></td></tr></table>						Approved by:	Emmanuel Saydeh	Date Signed:	Dec 10, 2018, 10:12 am	Cost Code:		Signature:		Date Received	12/05/2018	Company	MECI	Vendor I.D	CITY01	Job No. / G/L	2018-015	Cost Code / Type		Cheque No.	
Approved by:	Emmanuel Saydeh																								
Date Signed:	Dec 10, 2018, 10:12 am																								
Cost Code:																									
Signature:																									
Date Received	12/05/2018																								
Company	MECI																								
Vendor I.D	CITY01																								
Job No. / G/L	2018-015																								
Cost Code / Type																									
Cheque No.																									
HST / GST NO 86393 5995 RT0001				Total amount 509.05																					

APPENDIX 5

SURVEY PLAN

Phase I ESA Property, Phase II
ESA Property and RSC Property

I REQUIRE THIS PLAN TO BE DEPOSITED
UNDER THE LAND TITLES ACT.

DATE: Aug 8/19

Brian J. Webster
BRIAN J. WEBSTER
ONTARIO LAND SURVEYOR

PLAN 4R-32147

RECEIVED AND DEPOSITED
DATE: Aug 08, 2019

Sgt. Noel Munawar
REGISTRAR FOR THE LAND TITLES DIVISION
OF OTTAWA-CARLETON (4)

SCHEDULE		
PART	LOT	PIN
1	LOTS 4, 5, 13, 14, 15, 18, 22, 23 & 24, PART OF HEAD STREET (CLOSED BY BY-LAW 316-40 INST. NO. OC1594236)	PART OF PIN 04097-0215
2	PART OF CHAUDIERRE ISLAND	PART OF PIN 04097-0227
3	PART OF HEAD STREET (CLOSED BY BY-LAW 316-40 INST. NO. OC1594236)	ALL OF PIN 04280-0148
4	PART OF LOTS 22, 23 & 24 PART OF UNION SQUARE (CLOSED BY BY-LAW 2511, INST. NO. CR75320)	PART OF PIN 04097-0215

PART 1 IS SUBJECT TO EASEMENT PER INST. NO. OC1431440
PART 4 IS SUBJECT TO EASEMENT PER INST. NO. 5 OC1431438 & OC1981109
PART 1 COMPREHENDS PART OF PIN 04097-0215
PART 2 COMPREHENDS PART OF PIN 04097-0227
PART 3 COMPREHENDS ALL OF PIN 04280-0148

PLAN OF SURVEY OF

**LOTS 6, 16 & 17
AND
PART OF LOTS 4, 5, 13, 14, 15, 18, 22,
23 & 24
PART OF HEAD STREET (CLOSED BY
BY-LAW REGISTERED AS OC1594236)
& PART OF UNION SQUARE (CLOSED
BY BY-LAW 2511, INST. NO. CR75320)
PART OF CHAUDIERRE ISLAND
REGISTERED PLAN NO. 10**
(GEOGRAPHIC TOWNSHIP OF NEPEAN)
CITY OF OTTAWA

Scale 1:500
0 10 20 30 METRES

METRIC CONVERSION
DISTANCES AND COORDINATES SHOWN ON THIS PLAN ARE IN METRES
AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048

GRID SCALE CONVERSION
DISTANCES ARE GIVEN AND CAN BE CONVERTED TO GRID BY MULTIPLYING BY THE
COMBINED SCALE FACTOR OF 0.99994

BEARING NOTE
BEARINGS ARE GRID, DERIVED FROM THE CAN-NET VRS NETWORK GPS OBSERVATIONS
ON NCC HORIZONTAL CONTROL MONUMENTS 19773035 AND 19480191, CENTRAL
MERIDIAN 74° 30' WEST LONGITUDE MTM ZONE 9, NAD83 (ORIGINAL).

19773035 N550040.42 E324886.94
19480191 N503554.26 E388054.44

COORDINATE NOTE
COORDINATES ARE GEODETIC AND ARE REFERRED TO THE CENTRAL MERIDIAN 74° 30'
WEST LONGITUDE MTM ZONE 9, NAD83 (ORIGINAL).

LEGEND

■	DENOTES	FOUND MONUMENTS
□	SET MONUMENTS	IRON BAR
BB	ROUND IRON BAR	STANDARD IRON BAR
SB	SHORT STANDARD IRON BAR	CUT CROSS
CC	CONCRETE PIN	WITNESS
CP	WITNESS	IDENTIFICATION NUMBER
WT	MEASURED	PROPORTIONED
PN	ORIGIN UNKNOWN	STANTEC GEOMATICS LTD.
M/MEAS	PLAN 4R-31176	UNUSABLE FOR POSTING
PCP		
OU		
SG		
PI		
UP		

NOTE
PART OF SITE IS UNDER DEMOLITION OR CONSTRUCTION. MONUMENTATION PLANTED
ACCORDINGLY.

OBSERVED REFERENCE POINTS DERIVED FROM THE CAN-NET VRS NETWORK GPS
OBSERVATIONS ON NCC HORIZONTAL CONTROL MONUMENTS 19773035 AND 19480191,
CENTRAL MERIDIAN 74° 30' WEST LONGITUDE MTM ZONE 9, NAD83 (ORIGINAL).
COORDINATES TO SUBM ACCURACY PER SEC 14(2) OF OREG. 214/10

ORP ID	NORTHING	EASTING
②	5031488.41	366012.15
③	5031270.03	365946.79

COORDINATES CANNOT, IN THEMSELVES, BE USED TO RE-ESTABLISH CORNERS
OR BOUNDARIES SHOWN ON THIS PLAN.

SURVEYOR'S CERTIFICATE

- I CERTIFY THAT:
- THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS
ACT, THE SURVEYORS ACT AND THE LAND TITLES ACT AND THE REGULATIONS MADE
UNDER THEM.
 - THE SURVEY WAS COMPLETED ON THE 27th DAY OF JUNE, 2019.

Aug 8/19
DATE

Brian J. Webster
BRIAN J. WEBSTER
ONTARIO LAND SURVEYOR

Stantec

Stantec Geomatics Ltd.

CANADIAN LAND SURVEYORS
ONTARIO LAND SURVEYORS
1331 CLYDE AVENUE, SUITE 400
OTTAWA, ONTARIO, K2C 3K4
TEL: 613-722-4430
STANTEC.COM

DRAWN: TMT CHECKED: CT PWC: CT FIELD: ES/CA PROJECT NO: 161613467-113

APPENDIX 6

EXP LETTER REPORT



July 31, 2019

Taryn Glancy
Brownfield Coordinator
6 Booth Street (Albert Island)
Ottawa, ON, K1R 6K8

RE : OTT-00250193-E0 **Excavation Oversight Summary**
 Perley Street Excavation
 Chaudière Island, 4 Booth Street, Ottawa, Ontario

INTRODUCTION

The following letter summarizes EXP's involvement during the utility trench excavation within the Perley Street road allowance as part of the Zibi re-development project. The purpose of the excavation was for the installation of storm and sanitary sewer lines. It is understood that most of the area that was excavated is within the boundaries of a property that has been characterized by Paterson Group (Paterson) to support the filing of a Record of Site Condition (RSC). This property will henceforth be referred to as the "RSC property". It is also understood that a portion of the area that was excavated is not part of the RSC property and has not been characterized. This property will henceforth be referred to as the "non-RSC property". The attached figure shows the area that was excavated, and the RSC property is shown in green and the non-RSC property is shown in blue.

WORK PROGRAM

EXP was present onsite during the excavation activities on the following dates: March 5, 8, 11, 12, 14, 18, 20, and 25, 2019. Excavating activities occurred within the RSC property only from March 5 to 12, while excavating activities occurred within both the RSC property and non-RSC property from March 14 to 25. The boundaries of the RSC property and non-RSC property within the excavation were determined using a figure entitled Proposed Monitoring Well Locations – Domtar Lands Development – Chaudière Island prepared by Paterson and were marked by an independent surveyor retained by Zibi.

While onsite, EXP's responsibilities involved monitoring the progress of the excavating activities as they progressed westward from Booth Street, measuring the depth to bedrock, making notes regarding the quality of excavated material, and ensuring that materials excavated from the RSC property remained separate from the materials excavated from the non-RSC property.

In order to install the storm and sanitary sewers, bedrock had to be removed. Removal of bedrock was accomplished by hoe-ramming to the required depth.

SITE OBSERVATIONS

The depth to consolidated bedrock, which consisted on dark grey limestone, ranged from 0.60 to 1.47 metres below ground surface (mbgs). The total depth of the excavation was approximately 2.4 mbgs, as required for the installation of storm and sanitary services. No evidence of impact such as staining, noxious odours or phase-separated liquids were identified in any part of the excavation.

All material excavated from the non-RSC property was stockpiled separately from the material that was excavated from the RSC property. The material from the non-RSC property was stockpiled on Chaudière Island East (3 Booth Street) on the eastern portion of the island between the construction trailers and Old Mill building. The stockpiling activity location was reviewed with the contractor and continuously monitored by EXP. All materials removed from the RSC property were re-used to backfill the trench or transported to Chaudière Island East (next to Building 535) and stockpiled separately from the materials removed from the non-RSC property. Imported engineered fill (Granular A) was also to backfill the trench; the Granular A originated from the Tomlinson Moodie Drive quarry, which is licensed under the Aggregate Resources Act. Temporary stockpiling of the RSC property materials occurred next to the excavation. None of the materials that were excavated from the non-RSC property were re-used to backfill the excavation. In addition, EXP confirms that no mixing of materials occurred, either in the stockpiles or in the excavation. This was accomplished by consistently reviewing the work program with the contractor and site superintendent, and documentation/review of stockpile locations on Chaudière Island East.

EXP was not on site when all hoe-ramming activities occurred to remove consolidated limestone bedrock to the depth of the services trench.

SUMMARY

Based on observations made by EXP as excavating activities occurred within the Perley Street road allowance, EXP can confirm that materials that were excavated from the non-RSC property were not mixed with materials that were excavated from the RSC property. Further, no soil was brought from another property, including the non-RSC property, and placed on, in or under the RSC property in conjunction with excavation or backfilling activities during the service installation program. Materials that were excavated from the non-RSC property were not used for backfilling purposes and were not placed on, in or under the RSC property at any time. Rock fragments generated during hoe-ramming activities were kept separate from loose materials that were excavated from the trench.

We trust this letter meets your current needs. Should you have any questions, do not hesitate to contact our office.

EXP Services Inc.



Scott Lessard, B.Sc.
Environmental Scientist
Earth & Environment



Patricia Stelmack, P.Eng.
Senior Environmental Engineer
Earth & Environment



Attachments:

1. Figure – Site Plan
2. Site Photographs

Figure – Site Plan



LEGEND

0 5 10 20 30 40 50 Meters

RSC Property Boundary

Non-RSC Property Boundary

Approximate extent of storm/sanitary trench



EXP Services Inc.

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PROJECT TITLE:

PERLEY STREET EXCAVATION OVERSIGHT
Chaudiere Island, 3 Booth Street
Ottawa, Ontario

DRAWING TITLE:

SITE PLAN

PROJECT No.:

OTT-00250193-E0

DWN:

SL

SCALE:

AS NOTED

CHKD:

PS

DATE:

JULY 2019

FIG. No.:

1

Site Photographs



Photo. 1

View of the excavation on March 5, 2019 looking east



Photo. 2

View of the stockpiled rock and granular material from the RSC property on Chaudière Island East on March 8, 2019 looking west



Photo. 3

View of the excavation on March 14, 2019 looking northwest



Photo. 4

View of the temporarily stockpiled rock and granular material from the RSC property next to the excavation on March 14, 2019 looking northeast



Photo. 5

View of the excavation on March 18, 2019 looking northwest



Photo. 6

View of the excavation on March 20, 2019 looking northwest

APPENDIX 7

MECP INCIDENT REPORT



INCIDENT REPORT

Reference Number:	7640-B4WG7A	Module Type:	Spill
Status:	In progress	File Storage Number:	
Program:	Water - Ground & Surface	Activity:	Spills

Caller or PO Reporting/Receiving Information

First Name:	Last Name:
Ibrahim	Shideh
Name of Company:	
Eddy Lands Construction	

MAILING ADDRESS

Civic Address:		Unit Identifier:	
Delivery Designator:		Delivery Identifier:	
Municipality/ Unorganized Twp:	County/District:	Province/State:	Postal Code:
(1)		Ontario	
Postal Station:		Country:	Canada
Telephone Number:	Extension:	Other Number:	Email Address:
(613)617-2114		Fax	
Date Reported to MOE:	2018/09/24	Time Reported to MOE:	08:05
Date of Incident:	2018/09/22	Time of Incident:	
Incident Date Confirmation:	Actual		

Client(s)

Client Details

Site(s)

Site Details

4 Booth Street, Ottawa<UNOFFICIAL>

Address: Lot: , Part: , 4 Booth Street, Ottawa, Ottawa, City,

District Office: Ottawa

GeoReference Map Datum: , Zone: 18, Method: , UTM Easting: 443856.21, UTM Northing: 5029856.19,

UTM Location Description: ,

Incident Summary:

Eddy Lands Construction: 20L Diesel to construction pit

Initial Incident Description (as reported):

Created: Halden McDonald (Spills Action Centre) - 2018/09/24 08:05:12 AM

Caller to SAC(hm) reporting that there was a spill at their construction site over the weekend located at 4 Booth Street, Ottawa. Caller says that the spill happened on the September 22nd when the tornado hit. Caller says that their construction site started to flood with the rain. Caller says that their diesel generator became submerged and they are estimating a loss of 20L of diesel. Caller says that when this was discovered they moved the generator to higher ground to avoid any further spill. Caller says that they then excavated a hole on the site where all the water drained to. Caller says that this is how they contained the spill. Caller says that they are constructing a building, so the cement walls would have contained it to the site regardless. They are very close to the Ottawa River, but it would not have been impacted. Caller says that they could not get anybody to site on the day and crews on-site were not aware they had to report it forthwith. Caller says that they are going to educate their team on reporting requirements as they only found out this morning about the spill and wanted to report it. Caller says that they have retained Clean Water Works (CWW) to attend site and should be on-site sometime this morning. Caller says that next update will be around 14:00.

13:37 Paul Nagy (Clean Water Works) to SAC(jt)

Caller reports they have skimmed one load so far and they will have another load later on today. An EGR was requested and issued below.

16:58 Paul Nagy (Clean Water Works) to SAC(jt)

Caller reports they have another load ready to leave the site. The cleanup is on-going and they will be returning to site tomorrow. They have contained the spill for tonight. An EGR was requested and issued below.

Sept 25

0815 Ibrahim Shideh to SAC(ak) updates that vac a vac truck was on site. They are on site today as well doing clean up. Caller will update SAC by 1330 hrs.

15:05

Paul Nagy (Clean Waterworks - 613-299-4978) to SACcm2:

- EGR request for 12500L of 221-L. EGR issued.
- Cleanup is ongoing. They'll have one more load tonight and another one most likely tomorrow

SPIA***Not in SWPA***

SAC Action Class:	Land Spills
Non-Standard Procedure:	No

Incident Description:

Last update: Kyle Straberger (Ottawa District Office) - 2018/09/28 03:50:46 PM

EO Straberger

September 28, 2018 - Phone call to Taryn Glancy, Zibi, (613-219-2722). No answer, left message requesting an update to the status of the site.

(9:50am) Phone call from Taryn Glancy, Zibi. Eddy Lands Construction LP generated a Environmental Incident Report that will be forwarded to the MECF. Taryn stated that the spill was from the fuel tank and not the diesel generated as originally reported to the MECF SAC. It is estimated based on when the power was restored to the site that the dewatering pumps only pumped for approx. 10hrs and the estimated fuel lost was estimated at 50L (conservative). Zibi will be abandoning the clarifier at Building 535 and replacing the treatment with a Enviro-Tank provided by Aquatech. Additional information will be provided following the call.

Email received from Taryn Glancy providing the following information:

- Eddy Lands Construction LP - Environmental Incident Report
- Diesel Spill Site Map
- Enviro-Tank Brochures and drawings
- Pictures of impacted areas of the construction site

Eddy Lands Construction LP - Environmental Incident Report

Summary: Saturday, September 22, 2018 at 1pm Eddy Lands Construction LP was notified of flooding at site. Eddy Lands Construction LP arrived on-site and began pumping of water from the site into the clarifier. During pumping it was observed that the diesel tank was submerged and leaking diesel. Tank was removed from the water and relocated to a higher elevation. As a result of dewatering operations, residual diesel was discharged into the clarifier and the Buchanan Channel. Clean Water Works was retained and arrived on-site Monday, September 24, 2018 to contain and clean-up the impacted areas.

Site does not plan to discharge off-site for several operating days, however, Milestone Environmental has been retained to pump the clarifier through a portable treatment system which would allow for future use if dewatering was to occur prior to an alternative treatment solution (ie. Aquatech Tank).

Incident Description Continuation:

Not Available

Incident Update:

Blake Turner - 2018/09/28 created; 2018/09/28 last update - Spills Action Centre
17:00-Jim Clean Wateworks to SACbt. The spill has been cleaned up completely. No further EGRs needed and no further updates.

Was there an MOE field response?	No
Were there samples collected / analyzed at any time?	No
Health / Environmental Consequences at the Time of Incident	
Health / Environmental Consequences:	2 - Minor Environment

Has a Water Body been impacted?	No
Receiving Environment:	Land, Surface Water, Source Water Zone
Incident Event:	Leak/Break
Incident Reason:	Flooding

Source Type:	Other
Specify Other:	Generator
Sector Type:	Miscellaneous Industrial
MOE/Other Agencies Involved:	Province - MOE-District Office
Was there a discharge / emission / spill of a contaminant to the environment?	
Yes	

Contaminants Table

Contaminant Name	Description	Code	UN#	Limit	Quantity	[units]	[freq]
DIESEL FUEL		13	1202		20	L	

Environmental Compliance Reporting (ECR)

Is this an air emission (measured or modelled) or wastewater (sewage) discharge exceedance that will become part of the Environmental Compliance Report?

(legislation, certificate of approval, order, or guideline)

Voluntary / Mandatory Abatement

Was there Non-Compliance/Non-Conformance Identified? ☐ Yes ☐ No

Voluntary / Mandatory Abatement Items

Not Available

Waste / EGR Information

Waste / EGR Information entries:

Requestor Name/Company/Contact Information: Paul Nagy/Clean Water Works/613-299-4978
 EGR Number: ONS0402
 Reason for EGR Issue: Spill
 Waste Specification:
 Class Name - Class Code - Hazard Description - Quantity [Units] - Physical State,Description
 Light fuels - 221 - Liquid Industrial Waste - 12800 [L] - Liquid,
 Gasoline, kerosene, diesel, tank drainings/washings/bottoms, spill clean-up residues
 Manifest No: TF96095-6
 Waste Site Name (Receiver): Clean Water Works Inc.
 Waste Site ECA (Receiver): 1857-6ZBR6H
 Waste Management System Client Name (Carrier): Clean Water Works Inc.
 Waste Management System ECA No (Carrier): 3664-6GGPRM
 Created By/APPROVED BY: Jonathan Tse

Office: Spills Action Centre
Created Date/APPROVED DATE: 09/24/2018 1:38:56 PM
Last Modified By: Jonathan Tse
Last Modified Date: 09/24/2018 1:45:39 PM

Requestor Name/Company/Contact Information: Paul Nagy/CleanWater Works/613-299-4978
EGR Number: ONS0402
Reason for EGR Issue: Spill
Waste Specification:
Class Name - Class Code - Hazard Description - Quantity [Units] - Physical State,Description
Light fuels - 221 - Liquid Industrial Waste - 8500 [L] - Liquid,
Gasoline, kerosene, diesel, tank drainings/washings/bottoms, spill clean-up residues
Manifest No: TF96096-4
Waste Site Name (Receiver): Clean Water Works Inc
Waste Site ECA (Receiver): 1857-6ZBR6H
Waste Management System Client Name (Carrier): Clean Water Works Inc.
Waste Management System ECA No (Carrier): 3664-6GGPRM
Created By/APPROVED BY: Jonathan Tse
Office: Spills Action Centre
Created Date/APPROVED DATE: 09/24/2018 4:59:17 PM
Last Modified By: Jonathan Tse
Last Modified Date: 09/24/2018 5:11:01 PM

Requestor Name/Company/Contact Information: Paul Nagy, Clean Water Works (613-299-4978)
EGR Number: ONS0402
Reason for EGR Issue: Spill
Waste Specification:
Class Name - Class Code - Hazard Description - Quantity [Units] - Physical State,Description
Light fuels - 221 - Liquid Industrial Waste - 8000 [L] - Liquid,
Gasoline, kerosene, diesel, tank drainings/washings/bottoms, spill clean-up residues
Manifest No: GT24518-7
Waste Site Name (Receiver): Clean Water Works Inc.
Waste Site ECA (Receiver): 1857-6ZBR6H
Waste Management System Client Name (Carrier): Clean Water Works Inc.
Waste Management System ECA No (Carrier): 3664-6GGPRM
Created By/APPROVED BY: Aaron Richards
Office: Spills Action Centre
Created Date/APPROVED DATE: 09/25/2018 12:58:09 PM
Last Modified By: Aaron Richards
Last Modified Date: 09/25/2018 1:16:28 PM

Requestor Name/Company/Contact Information: Paul Nagy - Clean Waterworks - 613-299-4978
EGR Number: ONS0402
Reason for EGR Issue: Spill
Waste Specification:
Class Name - Class Code - Hazard Description - Quantity [Units] - Physical State,Description
Light fuels - 221 - Liquid Industrial Waste - 12500 [L] - Liquid,
Gasoline, kerosene, diesel, tank drainings/washings/bottoms, spill clean-up residues
Manifest No: TF96097-2
Waste Site Name (Receiver): Clean Water Works Inc.
Waste Site ECA (Receiver): 1857-6ZBR6H
Waste Management System Client Name (Carrier): Clean Water Works Inc.
Waste Management System ECA No (Carrier): 3664-6GGPRM
Created By/APPROVED BY: Chris Mutton
Office: Spills Action Centre
Created Date/APPROVED DATE: 09/25/2018 3:03:26 PM
Last Modified By: Chris Mutton
Last Modified Date: 09/25/2018 3:20:30 PM

Requestor Name/Company/Contact Information: Paul Nagy, Clean Water Works (613-299-4978)

EGR Number: ONS0402
Reason for EGR Issue: Spill
Waste Specification:
Class Name - Class Code - Hazard Description - Quantity [Units] - Physical State,Description
 Light fuels - 221 - Liquid Industrial Waste - 4500 [L] - Liquid,
 Gasoline, kerosene, diesel, tank drainings/washings/bottoms, spill clean-up residues
Manifest No: TF96098-0
Waste Site Name (Receiver): Clean Water Works Inc.
Waste Site ECA (Receiver): 1857-6ZBR6H
Waste Management System Client Name (Carrier): Clean Water Works Inc.
Waste Management System ECA No (Carrier): 3664-6GGPRM
Created By/APPROVED BY: Aaron Richards
Office: Spills Action Centre
Created Date/APPROVED DATE: 09/25/2018 6:07:15 PM
Last Modified By: Aaron Richards
Last Modified Date: 09/25/2018 6:28:47 PM

Requestor Name/Company/Contact Information: 1206Paul Nagy from CWW
EGR Number: ONS0402
Reason for EGR Issue:
Waste Specification:
Class Name - Class Code - Hazard Description - Quantity [Units] - Physical State,Description
 Light fuels - 221 - Liquid Industrial Waste - 10852 [L] - Liquid,
 Gasoline, kerosene, diesel, tank drainings/washings/bottoms, spill clean-up residues
Manifest No: TF96100-4
Waste Site Name (Receiver): Clean Water Works Inc.
Waste Site ECA (Receiver): 1857-6ZBR6H
Waste Management System Client Name (Carrier): Clean Water Works Inc.
Waste Management System ECA No (Carrier): 3664-6GGPRM
Created By/APPROVED BY: Alim Khan
Office: Spills Action Centre
Created Date/APPROVED DATE: 09/26/2018 12:05:00 PM
Last Modified By: Alim Khan
Last Modified Date: 09/26/2018 12:21:53 PM

Requestor Name/Company/Contact Information: Clean Water Works
EGR Number: ONS0402
Reason for EGR Issue: Spill
Waste Specification:
Class Name - Class Code - Hazard Description - Quantity [Units] - Physical State,Description
 Light fuels - 221 - Liquid Industrial Waste - 1000 [L] - Liquid,
 Gasoline, kerosene, diesel, tank drainings/washings/bottoms, spill clean-up residues
Manifest No: TF96108-7
Waste Site Name (Receiver): Clean Water Works Inc.
Waste Site ECA (Receiver): 1857-6ZBR6H
Waste Management System Client Name (Carrier): Clean Water Works Inc.
Waste Management System ECA No (Carrier): 3664-6GGPRM
Created By/APPROVED BY: Blake Turner
Office: Spills Action Centre
Created Date/APPROVED DATE: 09/28/2018 4:57:39 PM
Last Modified By: Blake Turner
Last Modified Date: 09/28/2018 5:01:20 PM

Document Related Information

Cross Reference:	(doc link)	Task Link:	1026-B4WHUG 
Originating Document:		Created by:	Haiden McDonald
Date Created:	2018/09/24	Date Completed:	

Office Receiving Incident Report:	Spills Action Centre	Incident Info Received By:	Haiden McDonald
Bring Forward Date:		Bring Forward Reason:	

Signatures

Provincial Officer:

Name: Badge No: Work Unit: District/Area Office: Date: Signature:	
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District/Area Supervisor:

Name: Work Unit: District/Area Office: Date: Signature:	
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