



October 19th, 2018

Project: MM1027

**Ottawa Carleton District School Board**

1224 Stittsville Main Street

Stittsville, Ontario

K2S 1S6

**Environmental Monitoring and Contaminant Management Plan - 2018**

**Elmdale Public School**

**49 Iona Street,**

**Ottawa, Ontario**

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## INTRODUCTION

CM3 Environmental Inc. (CM3) was retained by the Ottawa Carleton District School Board (OCDSB) to provide environmental monitoring related to historic petroleum hydrocarbon (PHC), polycyclic aromatic hydrocarbon (PAH) and metals impacts identified at the Elmdale Public School property.



## SITE FEATURES

Elmdale Public School is located at 49 Iona Street in, Ontario. Surrounding land uses are residential. Potable water and sanitary services are supplied by the City of Ottawa. The topography generally consists of asphalt, grass, shrubbery and a variety of trees. The subsurface lithology consists of silt and sand underlain sandy to silty clay.

Please refer to **Figures 1** and **2** respectively for site location plan and site plan.

## BACKGROUND

The petroleum impacts were discovered during construction activities in the former coal storage room adjacent to the boiler room. In February of 2009 SLR Consulting Ltd. (SLR) inspected the coal storage room. One soil sample was taken directly below the floor slab where visual and olfactory indications of petroleum hydrocarbon impacts were observed at the time of sampling. The sample collected under the slab (SA1) showed concentrations of benzene, toluene, ethylbenzene, xylenes (BTEX), petroleum hydrocarbons (PHC) and polycyclic aromatic hydrocarbons (PAH) compounds in excess of the Ontario Ministry of Environment Conservation and Parks (MOECP) standards.

Subsequent assessment activities consisted of borehole/monitoring well advancement and groundwater sampling and monitoring. A total of twenty-eight (28) boreholes completed as monitoring wells (MW1 to MW28) were advanced in the interior and exterior of the school for the purpose of soil characterization and groundwater sampling. The assessment work completed at the time had indicated that residual soil and groundwater impacts in excess of MOECP Table 3 standards were present at the site. The impacts were found in the basement in the vicinity of the existing boiler room and former coal storage room.

## **ENVIRONMENTAL STANDARDS**

The results of the soil and groundwater chemical analyses were compared to The Ontario Ministry of Environment Conservation and Parks (MOECP) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, dated July 27, 2009 and revised April 15, 2011 (under Ontario Regulation 153/04). More specifically the Table 3 Generic Site Condition Standards in a Non-Potable Groundwater Condition (Coarse Textured Soils and Residential, Parkland, Institutional Property Use) were selected for comparison.

The MOECP Table 3 Standards were used for the following reasons:

- Contaminants of concern are petroleum products;
- No environmentally sensitive areas are located on site;
- Bedrock is not considered shallow (less than 2 m from ground surface);
- The site is not located within 30 m of a water body;
- Groundwater is not used as a potable water source in the area; and,
- The site use is a school.

## **GROUNDWATER MONITORING**

On December 18<sup>th</sup>, 2017 and July 10<sup>th</sup>, 2018, CM3 personnel measured the depth to liquid phase hydrocarbons (LPH), if any, and groundwater in each monitoring well using a Heron Instruments oil/water interface probe. Prior to monitoring, the interface probe was inspected and tested for proper operation. CM3 recorded the depth to the nearest millimetre from the highest point of the well riser. The interface probe was cleaned with an Alconox and water solution and then rinsed with distilled water between each well to prevent cross contamination. LPH was not encountered during the monitoring event. The December 18<sup>th</sup>, 2017 groundwater levels were determined to be between 0.272 meters and 4.301 meters from the top of the well risers. The July 10<sup>th</sup>, 2018 groundwater levels were determined to be between 0.218 meters and 4.085 meters from the top of the well risers. Water levels are included in **Table 1** for reference.

CM3 personnel also developed all accessible monitoring wells using dedicated waterra tubing and foot valves on December 18<sup>th</sup>, 2017 and July 10<sup>th</sup> 2018. Wells were developed to ensure that subsequent groundwater samples collected were representative of overburden groundwater conditions. All wells were developed until the purge waters were relatively free of sediment or until a minimum of three standing water volumes was removed from each well. Groundwater samples

were obtained from the monitoring wells following well development. All samples were obtained using dedicated tubing or disposable bailers. The collected samples were placed in laboratory-prepared glass jars for laboratory analysis. The groundwater samples were then labelled and placed in an ice-filled cooler and submitted along with an accompanying chain-of-custody form to Paracel Laboratories Ltd, for analysis of PHCs in the F1 to F4 range, BTEX and PAHs where sufficient groundwater was available.

The December 18<sup>th</sup>, 2017 groundwater analytical results indicated:

- Concentrations of PHCs in monitoring wells MW2, MW3, MW13, MW16 and MW20 exceeded the MOECP Table 3 Standards for PHCs;
- Concentrations of PAHs in monitoring well MW19 exceeded the MOECP Table 3 Standards for PAHs;
- All other monitoring wells analysed for BTEX, PHCs and PAHs were either non-detectable or contained concentrations below the MOECC Table 3 standards.

The July 10<sup>th</sup>, 2018 groundwater analytical results indicated:

- Concentrations of PHCs in monitoring wells MW13 and MW25 exceeded the MOECP Table 3 Standards for PHCs;
- All other monitoring wells analysed for BTEX and PHCs were either non-detectable or contained concentrations below the MOECC Table 3 standards.

Groundwater impacts are outlined on **Figure 3**. The groundwater analytical results are included in **Table 2** BTEX / PHC's and **Table 3** PAHs. The laboratory reports are included in **Appendix A** for reference.

## ENVIRONMENTAL SUMMARY

To date, 28 boreholes have been advanced and completed as monitoring wells to assess the soil and groundwater conditions on the site. Based on the information collected from the borehole advancement and groundwater monitoring, impacts to both soil and groundwater are present in excess of the applicable MOECC Table 3 Standards.

The extent of contamination is generally located in the boiler room and in the area around the boiler room.

Recent groundwater exceedances (PHC and/or PAHs) have been detected in monitoring wells MW2, MW3, MW13, MW16, MW19, MW20 and MW25 during the monitoring events.

The impacted monitoring wells are illustrated on **Figure 3**.

It is very likely that the identified contamination has become stable and is not spreading because the original source of the contamination is no longer present. However, further environmental

monitoring of the groundwater conditions will be required to document this condition and to provide accurate remedial options.

## **CONTAMINANT MANAGEMENT PLAN**

Given the information collected to date on the soil and groundwater conditions at the site, CM3 recommends (at a minimum) the following contaminant management plan:

- ✓ Monthly installation of oxygen socks to enhance biological degradation of contaminants;
- ✓ Bi-annual groundwater sampling;
- ✓ Annual Contaminant Management Plan.

It would be advisable to review alternative remedial options (if funding becomes available) including source removal by excavation, source reduction by excavation or enhanced insitu treatment techniques.

**CLOSURE**

This report has been prepared and the work described in this report has been undertaken by CM3 Environmental Inc. (CM3) for The Ottawa Carleton District School Board. It is intended for the sole and exclusive use of The Ottawa Carleton District School Board and their authorized agents for the purpose(s) set out in this report. Any use of, reliance on, or decision made based on this report by any person other than The Ottawa Carleton District School Board for any purpose, or by The Ottawa Carleton District School Board for a purpose other than the purpose(s) set out in this report, is the sole responsibility of such person or The Ottawa Carleton District School Board. CM3 and The Ottawa Carleton District School Board make no representation or warranty to any other person with regard to this report and the work referred to in this report and they accept no duty of care to any other person or any liability or responsibility whatsoever for any losses, expense, damages, fines, penalties or other harm that may be suffered or incurred by any other person as a result of the use of, reliance on, any decision made or any action taken based on this report or the work referred to in this report.

Nothing in this report is intended to constitute or provide a legal opinion. In addition, revisions to the regulatory standards referred to in this report may be expected over time. As a result, modifications to the findings, conclusions and recommendations in this report may be necessary.

The work undertaken by CM3 for this report and any conclusions or recommendations made in this report reflect CM3's judgement based on the site conditions observed at the time of the site inspection on the date(s) set out in this report, on information available at the time of preparation of this report, on the interpretation of data collected from the field investigation and on the results of laboratory analyses, which were limited to the quantification in select samples of those substances specifically identified in the report. Unless otherwise stated, the findings cannot be extended to previous or future site conditions, portions of the site which were unavailable for direct investigation, subsurface locations which were not investigated directly, or chemical parameters, materials or analysis which were not addressed. Substances other than those addressed by the investigation described in this report may exist within the site; substances addressed by the investigation may exist in areas of the site not investigated and concentrations of substances addressed which are different than those reported may exist in areas other than the locations from which samples were taken. CM3 expresses no warranty with respect to the accuracy of the analytical results by the laboratory. Actual concentrations of the substances identified in the samples submitted may vary according to the extraction and testing procedures used.

As the evaluation and conclusions reported herein do not preclude the existence of other chemical compounds and/or that variations of conditions within the site may be possible, this report should be used for informational purposes only and should absolutely not be construed as a comprehensive hydrogeological or chemical characterization of the site. If site conditions change or if any additional information becomes available at a future date, modifications to the findings, conclusions and recommendations in this report may be necessary.

Other than by The Ottawa Carleton District School Board as set out herein, copying or distribution of this report or use of or reliance on the information contained herein, in whole or in part, is not permitted without the express written permission of CM3.

We appreciate the opportunity to be of service to you and your organization. Should you have any questions please feel free to contact us at your convenience.

Respectfully submitted,

**CM3 Environmental Inc.**

*M MacDonald*

Marc MacDonald, P.Eng.  
Principal



## **FIGURES**

**Environmental Monitoring**

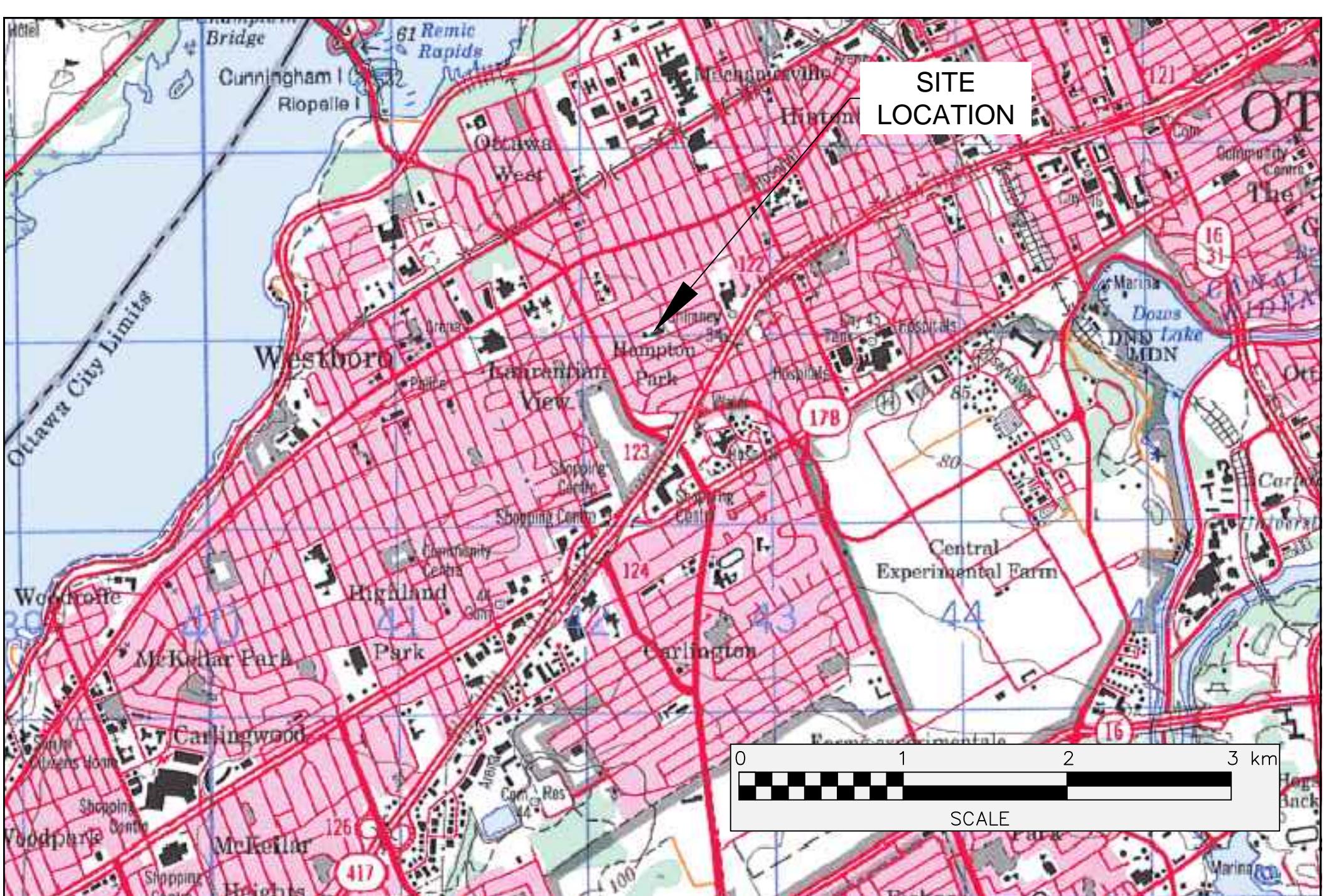
**Elmdale Public School**

**Ottawa, ON**

**MM1027**

**CM3 Environmental Inc.**  
*5710 Akins Road, Ottawa, Ontario, K2S 1B8*

SITE  
LOCATION



OTTAWA CARLETON DISTRICT SCHOOL BOARD  
ELMDALE PUBLIC SCHOOL  
49 IONA STREET, OTTAWA, ON



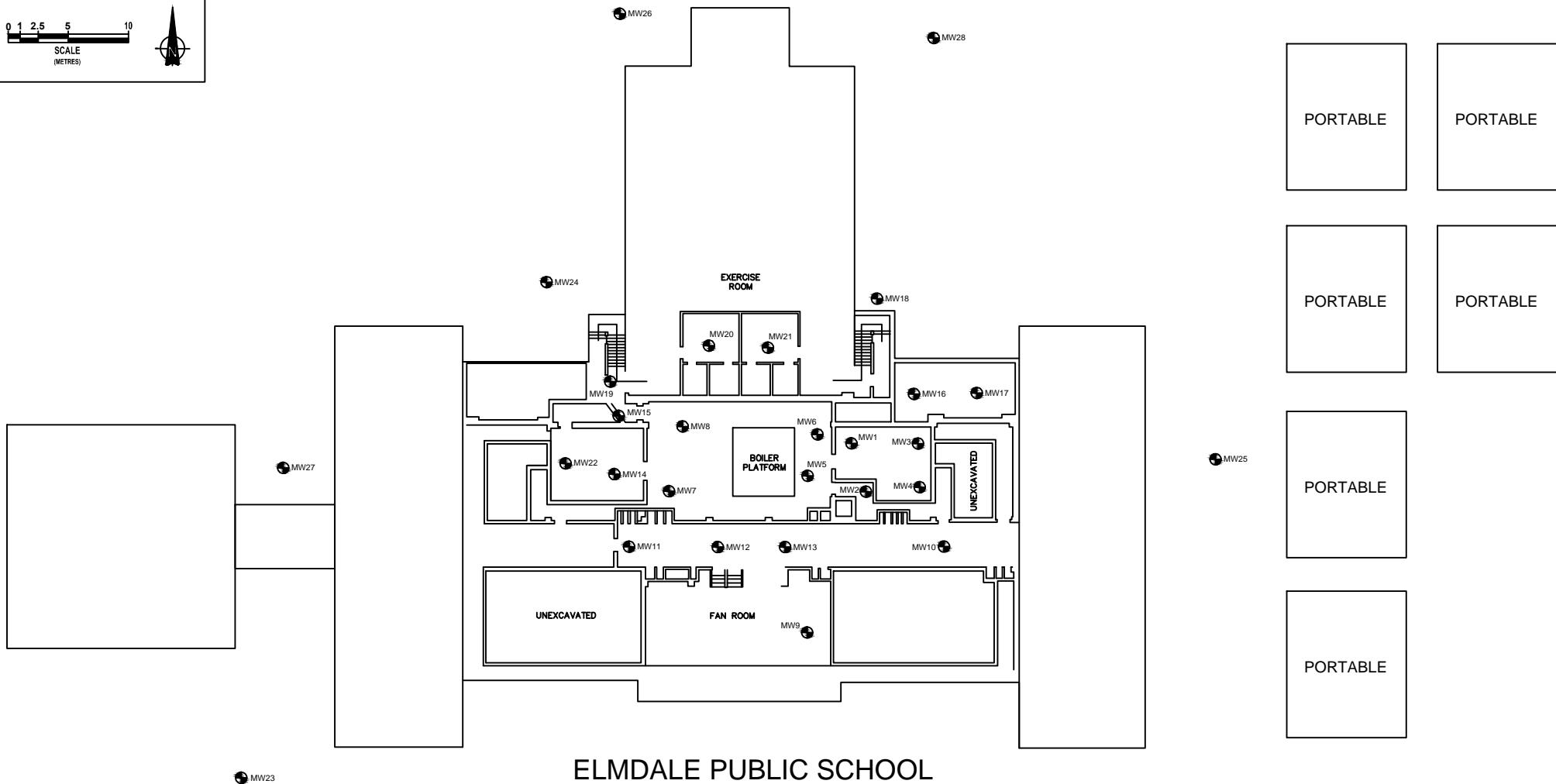
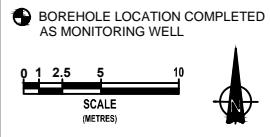
CM3 ENVIRONMENTAL  
5710 AKINS ROAD  
OTTAWA, ON  
K2S 1B8

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DATE:  
OCTOBER 2018  
PROJECT:  
MM-1027

SCALE:  
AS SHOWN  
FIGURE: 1  
SITE LOCATION

## LEGEND



OTTAWA CARLETON DISTRICT SCHOOL BOARD  
ELMDALE PUBLIC SCHOOL  
49 IONA STREET, OTTAWA, ON



CM3 ENVIRONMENTAL  
5710 AKINS ROAD  
OTTAWA, ON  
K2S 1B8

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OCTOBER 2018

SCALE:  
AS SHOWN

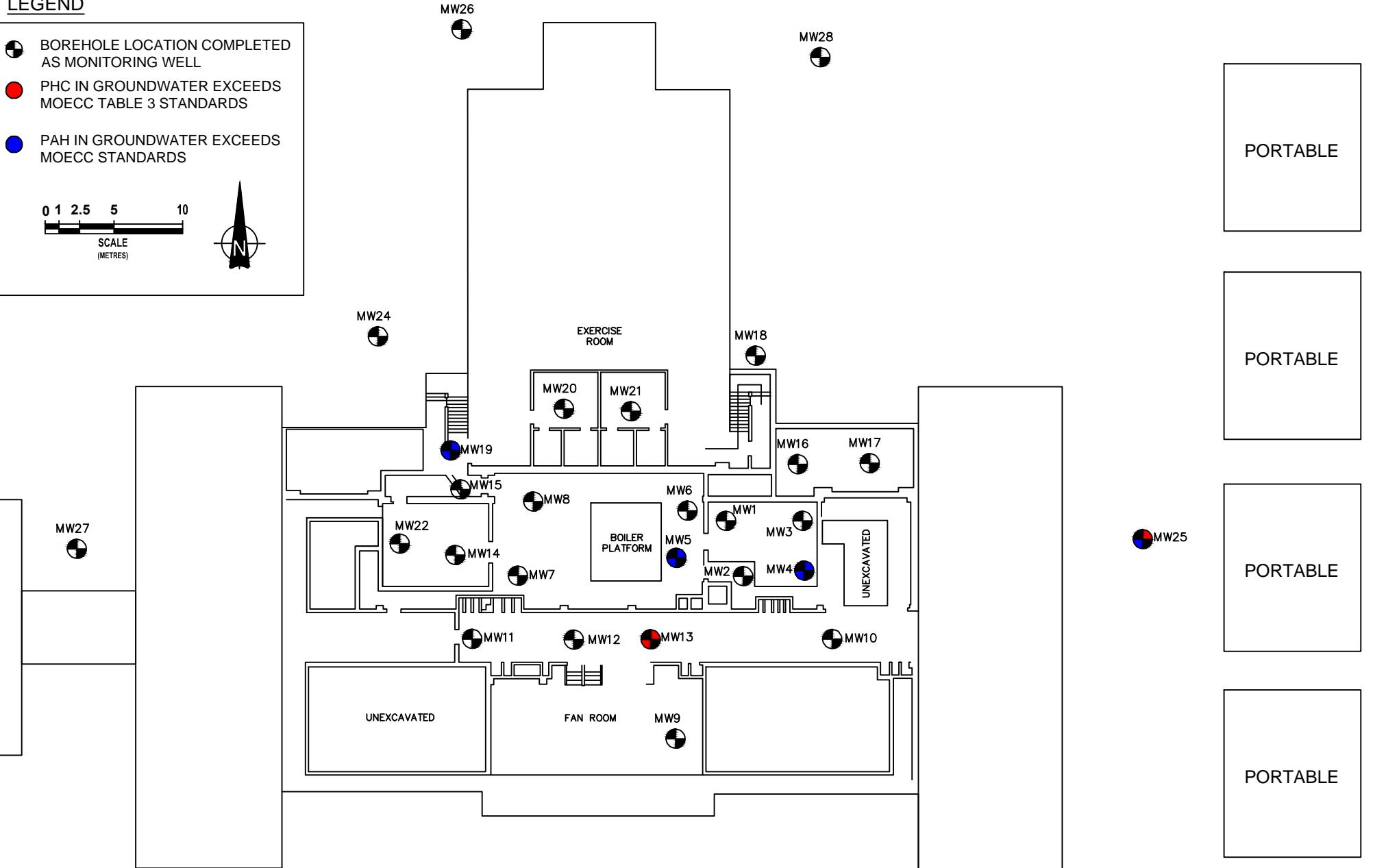
PROJECT:  
MM-1027

FIGURE: 2  
SITE PLAN

## LEGEND

- BOREHOLE LOCATION COMPLETED AS MONITORING WELL
- PHC IN GROUNDWATER EXCEEDS MOECC TABLE 3 STANDARDS
- PAH IN GROUNDWATER EXCEEDS MOECC STANDARDS

0 1 2.5 5 10  
SCALE (METRES)



## ELMDALE PUBLIC SCHOOL

OTTAWA CARLETON DISTRICT SCHOOL BOARD  
ELMDALE PUBLIC SCHOOL  
49 IONA STREET, OTTAWA, ON



CM3 ENVIRONMENTAL  
5710 AKINS ROAD  
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MM1027

SCALE:  
AS SHOWN  
FIGURE: 3  
GROUNDWATER IMPACTS

**TABLES**

**Environmental Monitoring**

**Elmdale Public School**

**Ottawa, ON**

**MM1027**

**CM3 Environmental Inc.**  
*5710 Akins Road, Ottawa, Ontario, K2S 1B8*

**TABLE 1: Groundwater Level Measurements**  
**49 Iona St, Ottawa, Ontario**  
**MM-1027**

Well ID	Date 27-Jun-17	TOC (marl)	Depth to		Elevation		LPH Thickness mm	Remarks 18-Dec-17      29-Nov-16
			LPH (mbtoc)	GW (mbtoc)	LPH (marl)	GW (marl)		
MW1	11-Nov-09			0.384				Strong Odour
MW1	25-Mar-10			0.378				
MW1	20-Dec-12			0.476				
MW1	24-Jul-13			0.425				
MW1	19-Aug-14			0.423				
MW1	14-Jan-15			0.414				
MW1	21-Aug-15			0.489				
MW1	18-Nov-15			0.670				
MW1	29-Nov-16			0.403				
MW1	27-Jun-17			0.515				
MW1	18-Dec-17			0.609				
MW1	10-Jul-18			0.422				
MW2	11-Nov-09			0.279				
MW2	25-Mar-10			0.267				
MW2	20-Dec-12			0.476				
MW2	24-Jul-13			0.301				
MW2	19-Aug-14			0.318				
MW2	14-Jan-15			0.301				
MW2	21-Aug-15			0.386				
MW2	18-Nov-15			0.575				
MW2	12-Aug-16			-				Dry
MW2	29-Nov-16			0.285				
MW2	27-Jun-17			0.313				
MW2	18-Dec-17			0.411				
MW2	10-Jul-18			0.312				
MW3	11-Nov-09			0.442				Strong Odour
MW3	25-Mar-10			0.437				
MW3	20-Dec-12			0.765				
MW3	24-Jul-13			0.432				
MW3	19-Aug-14			0.472				
MW3	14-Jan-15			0.474				
MW3	21-Aug-15			0.753				
MW3	18-Nov-15			0.774				
MW3	29-Nov-16			0.446				
MW3	27-Jun-17			0.463				
MW3	18-Dec-17			0.506				
MW3	10-Jul-18			0.485				
MW4	11-Nov-09		--	0.429	--	-0.429		LPH
MW4	25-Mar-10			0.419				
MW4	20-Dec-12			0.654				
MW4	24-Jul-13			0.461				
MW4	19-Aug-14			0.285				
MW4	14-Jan-15			0.470				
MW4	21-Aug-15			-				Dry
MW4	18-Nov-15			-				Dry
MW4	12-Aug-16			-				Dry
MW4	29-Nov-16			0.472				Dry
MW4	27-Jun-17			0.487				Dry
MW4	10-Jul-18			0.462				Dry
MW5	11-Nov-09			0.334				
MW5	25-Mar-10			0.330				
MW5	20-Dec-12			0.441				
MW5	24-Jul-13			0.313				
MW5	19-Aug-14			0.305				
MW5	14-Jan-15			0.564				

**TABLE 1: Groundwater Level Measurements**

49 Iona St, Ottawa, Ontario

MM-1027

Well ID	Date 27-Jun-17	TOC (marl)	Depth to		Elevation		LPH Thickness mm	Remarks 18-Dec-17      29-Nov-16
			LPH (mbtoc)	GW (mbtoc)	LPH (marl)	GW (marl)		
MW5	21-Aug-15				0.420			
MW5	18-Nov-15				0.494			
MW5	12-Aug-16				0.502			
MW5	29-Nov-16				0.323			
MW5	27-Jun-17				0.302			
MW5	18-Dec-17				0.401			
MW5	10-Jul-18				0.316			
MW6	11-Nov-09				0.356			
MW6	25-Mar-10				0.358			
MW6	20-Dec-12				0.585			
MW6	24-Jul-13				0.332			
MW6	19-Aug-14				0.387			
MW6	14-Jan-15				0.382			
MW6	21-Aug-15				0.603			
MW6	18-Nov-15				0.610			
MW6	12-Aug-16				0.714			
MW6	29-Nov-16				0.363			
MW6	27-Jun-17				0.383			
MW6	18-Dec-17				0.433			
MW6	10-Jul-18				0.386			
MW7	25-Mar-10				0.388			
MW7	20-Dec-12				0.388			
MW7	24-Jul-13				0.362			
MW7	19-Aug-14				0.346			
MW7	14-Jan-15				0.351			
MW7	21-Aug-15				0.389			
MW7	18-Nov-15				0.376			
MW7	12-Aug-16				0.421			
MW7	29-Nov-16				0.361			
MW7	27-Jun-17				0.356			
MW7	18-Dec-17				0.428			
MW7	10-Jul-18				0.284			
MW8	25-Mar-10				0.409			
MW8	20-Dec-12				0.500			
MW8	19-Aug-14				0.435			
MW8	14-Jan-15				0.471			
MW8	21-Aug-15				0.482			
MW8	18-Nov-15				0.471			
MW8	12-Aug-16				0.552			
MW8	29-Nov-16				0.406			
MW8	27-Jun-17				0.328			
MW8	18-Dec-17				0.406			
MW8	10-Jul-18				0.418			
MW9	25-Mar-10				0.566			
MW9	20-Dec-12				1.205			
MW9	24-Jul-13				1.085			
MW9	19-Aug-14				1.042			
MW9	14-Jan-15				1.036			
MW9	21-Aug-15				1.512			
MW9	18-Nov-15				1.399			
MW9	12-Aug-16				1.723			
MW9	29-Nov-16				1.262			
MW9	27-Jun-17				0.685			
MW9	18-Dec-17				0.771			
MW9	10-Jul-18				1.109			

**TABLE 1: Groundwater Level Measurements**  
**49 Iona St, Ottawa, Ontario**  
**MM-1027**

Well ID	Date 27-Jun-17	TOC (marl)	Depth to		Elevation		LPH Thickness mm	Remarks	18-Dec-17	29-Nov-16
			LPH (mbtoc)	GW (mbtoc)	LPH (marl)	GW (marl)				
<b>MW10</b>	25-Mar-10				1.649					
<b>MW10</b>	20-Dec-12				2.555					
<b>MW10</b>	24-Jul-13				2.175					
<b>MW10</b>	19-Aug-14				2.261					
<b>MW10</b>	14-Jan-15				2.075					
<b>MW10</b>	21-Aug-15				2.837					
<b>MW10</b>	18-Nov-15				2.708					
<b>MW10</b>	12-Aug-16				-					
<b>MW10</b>	29-Nov-16				2.681					
<b>MW10</b>	27-Jun-17				1.953					
<b>MW10</b>	18-Dec-17				2.081					
<b>MW10</b>	10-Jul-18				2.262					
<b>MW11</b>	25-Mar-10				1.415					
<b>MW11</b>	20-Dec-12				2.280					
<b>MW11</b>	24-Jul-13				1.815					
<b>MW11</b>	19-Aug-14				1.764					
<b>MW11</b>	14-Jan-15				1.765					
<b>MW11</b>	21-Aug-15				2.362					
<b>MW11</b>	18-Nov-15				2.221					
<b>MW11</b>	12-Aug-16				2.866					
<b>MW11</b>	29-Nov-16				1.881					
<b>MW11</b>	27-Jun-17				1.524					
<b>MW11</b>	18-Dec-17				1.832					
<b>MW11</b>	10-Jul-18				1.852					
<b>MW12</b>	25-Mar-10				1.458					
<b>MW12</b>	20-Dec-12				-					
<b>MW12</b>	24-Jul-13				1.832					
<b>MW12</b>	19-Aug-14				1.834					
<b>MW12</b>	14-Jan-15				1.795					
<b>MW12</b>	21-Aug-15				-					
<b>MW12</b>	18-Nov-15				-					
<b>MW12</b>	12-Aug-16				-					
<b>MW12</b>	29-Nov-16				1.951					
<b>MW12</b>	27-Jun-17				1.656					
<b>MW12</b>	10-Jul-18				1.849					
<b>MW13</b>	25-Mar-10				1.726					
<b>MW13</b>	20-Dec-12				2.436					
<b>MW13</b>	24-Jul-13				2.172					
<b>MW13</b>	19-Aug-14				2.198					
<b>MW13</b>	14-Jan-15				2.030					
<b>MW13</b>	21-Aug-15				2.601					
<b>MW13</b>	18-Nov-15				2.515					
<b>MW13</b>	12-Aug-16				-					
<b>MW13</b>	27-Jun-17				1.933					
<b>MW13</b>	18-Dec-17				2.005					
<b>MW13</b>	10-Jul-18				2.224					
<b>MW14</b>	25-Mar-10				0.165					
<b>MW14</b>	20-Dec-12				0.280					
<b>MW14</b>	24-Jul-13				0.301					
<b>MW14</b>	19-Aug-14				0.276					
<b>MW14</b>	Jan 14, 15				0.291					
<b>MW14</b>	21-Aug-15				0.293					
<b>MW14</b>	18-Nov-15				0.225					
<b>MW14</b>	12-Aug-16				0.506					
<b>MW14</b>	29-Nov-16				0.269					

**TABLE 1: Groundwater Level Measurements**  
**49 Iona St, Ottawa, Ontario**  
**MM-1027**

Well ID	Date 27-Jun-17	TOC (marl)	Depth to		Elevation		LPH Thickness mm	Remarks	18-Dec-17	29-Nov-16
			LPH (mbtoc)	GW (mbtoc)	LPH (marl)	GW (marl)				
MW14	27-Jun-17				0.150					
MW14	18-Dec-17				0.272					
MW14	10-Jul-18				0.225					
MW15	25-Mar-10				0.205					
MW15	20-Dec-12				0.642					
MW15	24-Jul-13				0.432					
MW15	19-Aug-14				0.461					
MW15	14-Jan-15				0.564					
MW15	21-Aug-15				0.567					
MW15	18-Nov-15				-					
MW15	12-Aug-16				0.822				Dry	
MW15	29-Nov-16				0.423					
MW15	27-Jun-17				0.200					
MW15	18-Dec-17				0.412					
MW15	10-Jul-18				0.331					
MW16	25-Mar-10				3.631					
MW16	20-Dec-12				4.226					
MW16	24-Jul-13				3.442					
MW16	19-Aug-14				3.994					
MW16	14-Jan-15				4.035					
MW16	21-Aug-15				4.158					
MW16	18-Nov-15				4.191					
MW16	12-Aug-16				4.251					
MW16	29-Nov-16				4.186					
MW16	27-Jun-17				3.839					
MW16	18-Dec-17				4.011					
MW16	10-Jul-18				3.984					
MW17	25-Mar-10				3.429					
MW17	20-Dec-12				4.207					
MW17	24-Jul-13				3.871					
MW17	19-Aug-14				3.871					
MW17	14-Jan-15				3.838					
MW17	21-Aug-15				4.106					
MW17	18-Nov-15				3.309					
MW17	12-Aug-16				4.288					
MW17	29-Nov-16				3.383					
MW17	27-Jun-17				3.724					
MW17	18-Dec-17				4.301					
MW17	10-Jul-18				3.902					
MW18	25-Mar-10				3.806					
MW18	24-Jul-13				3.935					
MW18	19-Aug-14				3.892					
MW18	21-Aug-15				4.034					
MW18	18-Nov-15				4.088					
MW18	12-Aug-16				4.141					
MW18	29-Nov-16				4.033					
MW18	27-Jun-17				3.926					
MW18	18-Dec-17				4.204					
MW18	10-Jul-18				4.085					
MW19	20-Jul-10				0.450					
MW19	20-Dec-12				0.695					
MW19	19-Aug-14				0.443					
MW19	14-Jan-15				0.617					
MW19	21-Aug-15				0.659					

**TABLE 1: Groundwater Level Measurements**  
**49 Iona St, Ottawa, Ontario**  
**MM-1027**

Well ID	Date 27-Jun-17	TOC (marl)	Depth to		Elevation		LPH Thickness mm	Remarks	
			LPH (mbtoc)	GW (mbtoc)	LPH (marl)	GW (marl)		18-Dec-17	29-Nov-16
MW19	18-Nov-15			0.473					
MW19	12-Aug-16			0.702					
MW19	29-Nov-16			0.439					
MW19	27-Jun-17			0.150					
MW19	18-Dec-17			0.382					
MW19	10-Jul-18			0.332					
MW20	20-Jul-10			0.813					
MW20	20-Dec-12			1.124					
MW20	19-Aug-14			0.789					
MW20	14-Jan-15			0.970					
MW20	21-Aug-15			0.950					
MW20	18-Nov-15			-					
MW20	12-Aug-16			1.033					
MW20	29-Nov-16			0.789					
MW20	27-Jun-17			0.521					
MW20	18-Dec-17			0.611					
MW20	10-Jul-18			0.707					
MW21	20-Jul-10			0.956					
MW21	20-Dec-12			1.174					
MW21	19-Aug-14			0.905					
MW21	14-Jan-15			1.083					
MW21	21-Aug-15			0.970					
MW21	18-Nov-15			0.854					
MW21	12-Aug-16			1.067					
MW21	29-Nov-16			0.852					
MW21	27-Jun-17			0.671					
MW21	18-Dec-17			0.688					
MW21	10-Jul-18			0.836					
MW22	20-Jul-10			0.100					
MW22	20-Dec-12			0.234					
MW22	24-Jul-13			0.212					
MW22	19-Aug-14			0.195					
MW22	14-Jan-15			0.216					
MW22	21-Aug-15			0.219					
MW22	18-Nov-15			0.210					
MW22	12-Aug-16			0.439					
MW22	27-Jun-17			0.200					
MW22	18-Dec-17			0.254					
MW22	10-Jul-18			0.218					
MW23	26-Jul-11	100.000		2.182			97.818		
MW23	05-Aug-11	100.000		2.180			97.820		
MW23	20-Dec-12	100.000		2.015			97.985		
MW23	24-Jul-13	100.000		2.135			97.865		
MW23	19-Aug-14	100.000		2.000			98.000		
MW23	21-Aug-15	100.000		1.990			98.010		
MW23	18-Nov-15	100.000		1.950			98.050		
MW23	12-Aug-16	100.000		2.138			97.862		
MW23	29-Nov-16	100.000		1.834			98.166		
MW23	27-Jun-17	100.000		1.752			98.248		
MW23	10-Jul-18	100.000		2.076			97.924		
MW24	26-Jul-11	100.020		3.636			96.384		
MW24	05-Aug-11	100.020		3.997			96.023		
MW24	20-Dec-12	100.020		4.022			95.998		
MW24	19-Aug-14	100.020		3.062			96.958		

TABLE 1: Groundwater Level Measurements

49 Iona St, Ottawa, Ontario

MM-1027

Well ID	Date 27-Jun-17	TOC (marl)	Depth to		Elevation		LPH Thickness mm	Remarks 18-Dec-17      29-Nov-16
			LPH (mbtoc)	GW (mbtoc)	LPH (marl)	GW (marl)		
MW24	21-Aug-15	100.020		3.459		96.561		
MW24	18-Nov-15	100.020		3.085		96.935		
MW24	12-Aug-16	100.020		3.325		96.695		
MW24	29-Nov-16	100.020		2.946		97.074		
MW24	27-Jun-17	100.020		2.756		97.264		
MW24	10-Jul-18	100.020		3.032		96.988		
MW25	26-Jul-11	99.215		2.597		96.618		
MW25	05-Aug-11	99.215		2.700		96.515		
MW25	19-Aug-14	99.215		2.284		96.931		
MW25	21-Aug-15	99.215		2.467		96.748		
MW25	18-Nov-15	99.215		2.535		96.680		
MW25	12-Aug-16	99.215		2.831		96.384		
MW25	29-Nov-16	99.215		2.567		96.648		
MW25	27-Jun-17	99.215		2.203		97.012		
MW25	10-Jul-18	99.215		2.738		96.477		
MW26	26-Jul-11	99.720		3.385		96.335		
MW26	05-Aug-11	99.720		3.720		96.000		
MW26	20-Dec-12	99.720		3.668		96.052		
MW26	19-Aug-14	99.720		3.152		96.568		
MW26	21-Aug-15	99.720		3.505		96.215		
MW26	18-Nov-15	99.720		3.270		96.450		
MW26	12-Aug-16	99.720		2.536		97.184		
MW26	29-Nov-16	99.720		3.136		96.584		
MW26	27-Jun-17	99.720		2.997		96.723		
MW26	10-Jul-18	99.720		3.378		96.342		
MW27	26-Jul-11	100.475		2.763		97.712		
MW27	05-Aug-11	100.475		2.940		97.535		
MW27	20-Dec-12	100.475		3.294		97.181		
MW27	19-Aug-14	100.475		2.546		97.929		
MW27	21-Aug-15	100.475		2.879		97.596		
MW27	18-Nov-15	100.475		2.510		97.965		
MW27	12-Aug-16	100.475		3.279		97.196		
MW27	29-Nov-16	100.475		2.842		97.633		
MW27	27-Jun-17	100.475		2.461		98.014		
MW27	18-Dec-17	100.475		3.081		97.394		
MW27	10-Jul-18	100.475		2.871		97.604		
MW28	26-Jul-11	98.675		-		-	Dry	
MW28	05-Aug-11	98.675		-		-	Dry	
MW28	20-Dec-12	98.675		-		-	Dry	
MW28	19-Aug-14	98.675		3.191		95.484	Dry	
MW28	14-Jan-15	98.675		-		-	Dry	
MW28	21-Aug-15	98.675		-		-	Dry	
MW28	18-Nov-15	98.675		-		-	Dry	
MW28	12-Aug-16	98.675		-		-	Dry	
MW28	29-Nov-16	98.675		3.268		95.407		
MW28	27-Jun-17	98.675		3.133		95.542		
MW28	10-Jul-18	98.675		3.506		95.169	Dry	

**Notes:**

TOC - top of casing

marl - metres above arbitrary reference level

mbtoc - metres below top of casing

LPH - liquid phase hydrocarbons

GW - groundwater

NM - not measured

NV - no value

**Table 2:**  
**Summary of Groundwater Analytical Results**  
**BTEX and Petroleum Hydrocarbons F1 to F4 Fractions (ug/L or ppb)**  
**49 Iona St, Ottawa, ON**  
**MM-1027**

Sample ID		Benzene	Ethyl Benzene	Toluene	m,p-Xylene	o-Xylene	Xylene (Total)	PHC F1 (C6-C10)	PHC F2 (C10-C16)	PHC F3 (C16-C34)	PHC F4 (>C34)	
MOECP Standards Table	MDL (ug/L)	0.5	0.5	0.5	0.5	0.5	0.5	25	100	100	100	
Reg 153/04 (2011)	Date	44	2300	18000	nv	nv	4200	750	150	500	500	
<b>Monitoring Well Samples</b>												
MW1	11-Nov-09	<0.5	<0.5	<0.5	-	-	<1	<200	<b>221</b>	226	<100	
MW1	18-Oct-11	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<b>522</b>	<b>799</b>	<100	
MW1	18-Jul-12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100	
MW1	20-Dec-12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	177	<100	
MW1	24-Jul-13	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100	
MW1	19-Aug-14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100	
MW1	14-Jan-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100	
MW1	21-Aug-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100	
MW1	18-Nov-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100	
MW1	29-Nov-16	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100	
MW1	27-Jun-17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100	
MW1	18-Dec-17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	426	<100	
MW1	10-Jul-18	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100	
MW2	11-Nov-09	-	-	-	-	-	-	<200	<b>697</b>	<b>777</b>	<100	
MW2	18-Oct-11	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<b>2470</b>	<b>3800</b>	<100	
MW2	18-Jul-12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100	
MW2	20-Dec-12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100	
MW2	24-Jul-13	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100	
MW2	26-May-14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<b>Dry</b>			
MW2	19-Aug-14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100	
MW2	14-Jan-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100	
MW2	21-Aug-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100	
MW2	18-Nov-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100	
MW2	29-Nov-16	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100	
MW2	27-Jun-17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100	
MW2	18-Dec-17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<b>569</b>	<100	
MW2	10-Jul-18	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100	
MW3	11-Nov-09	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<200	<b>328</b>	260	<100
MW3	18-Oct-11	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<b>488</b>	461	<100	
MW3	18-Jul-12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	242	<100	
MW3	20-Dec-12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100	
MW3	24-Jul-13	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100	
MW3	26-May-14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<b>Dry</b>			
MW3	19-Aug-14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100	
MW3	14-Jan-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100	
MW3	21-Aug-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<b>660</b>	160	
MW3	18-Nov-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100	
MW3	29-Nov-16	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100	
MW3	27-Jun-17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100	
MW3	18-Dec-17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<b>566</b>	<100	
MW3	10-Jul-18	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100	
MW4	11-Nov-09	-	-	-	-	-	-	<200	<b>1980</b>	1710	<100	
MW4	18-Jul-12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	285	<100	
MW4	20-Dec-12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<b>&lt;284 [1]</b>	<284 [1]	<284 [1]	
MW4	24-Jul-13	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100	
MW4	19-Aug-14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	153	266	<100	
MW4	14-Jan-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<b>Dry</b>			
MW4	29-Nov-16	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	120	431	<100	
MW4	27-Jun-17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	120	<100	<100	
MW5	11-Nov-09	-	-	-	-	-	-	<200	118	128	<100	
MW5	18-Oct-11	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100	
MW5	18-Jul-12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100	
MW5	20-Dec-12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100	
MW5	24-Jul-13	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100	
MW5	26-May-14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<b>Dry</b>			
MW5	19-Aug-14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100	
MW5	14-Jan-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100	
MW5	21-Aug-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	340	<100	
MW5	18-Nov-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100	
MW5	12-Aug-16	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100	
MW5	29-Nov-16	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100	
MW5	27-Jun-17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100	

**Table 2:**  
**Summary of Groundwater Analytical Results**  
**BTEX and Petroleum Hydrocarbons F1 to F4 Fractions (ug/L or ppb)**  
**49 Iona St, Ottawa, ON**  
**MM-1027**

Sample ID		Benzene	Ethyl Benzene	Toluene	m,p-Xylene	o-Xylene	Xylene (Total)	PHC F1 (C6-C10)	PHC F2 (C10-C16)	PHC F3 (C16-C34)	PHC F4 (>C34)
MOECP Standards Table	MDL (ug/L)	0.5	0.5	0.5	0.5	0.5	0.5	25	100	100	100
Reg 153/04 (2011)	Date	44	2300	18000	nv	nv	4200	750	150	500	500
<b>Monitoring Well Samples</b>											
MW5	18-Dec-17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	220	<100
MW5	10-Jul-18	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW6	11-Nov-09	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<200	<100	<100	<100
MW6	18-Oct-11	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	183	<100
MW6	18-Jul-12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW6	20-Dec-12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW6	26-May-14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW6	19-Aug-14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW6	14-Jan-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW6	21-Aug-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW6	18-Nov-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW6	29-Nov-16	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW6	27-Jun-17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW6	18-Dec-17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	162	<100
MW6	10-Jul-18	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW7	25-Mar-10	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<200	<100	<100	<100
MW7	18-Oct-11	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW7	18-Jul-12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW7	20-Dec-12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW7	24-Jul-13	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW7	19-Aug-14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW7	14-Jan-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW7	21-Aug-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW7	18-Nov-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	267	<100
MW7	12-Aug-16	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW7	29-Nov-16	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW7	27-Jun-17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW7	18-Dec-17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW7	10-Jul-18	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW8	25-Mar-10	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<200	<100	<100	<100
MW8	18-Oct-11	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW8	18-Jul-12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW8	20-Dec-12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW8	24-Jul-13	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW8	26-May-14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW8	19-Aug-14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW8	14-Jan-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	269	<100
MW8	21-Aug-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW8	18-Nov-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW8	12-Aug-16	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW8	29-Nov-16	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	349	<100
MW8	27-Jun-17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW8	18-Dec-17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	433	<100
MW8	10-Jul-18	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW9	25-Mar-10	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<200	<100	<100	<100
MW9	18-Oct-11	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW9	18-Jul-12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW9	20-Dec-12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW9	24-Jul-13	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW9	26-May-14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW9	19-Aug-14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW9	14-Jan-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW9	21-Aug-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW9	18-Nov-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW9	12-Aug-16	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW9	29-Nov-16	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW9	27-Jun-17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW9	18-Dec-17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	295	<100
MW9	10-Jul-18	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100

**Table 2:**  
**Summary of Groundwater Analytical Results**  
**BTEX and Petroleum Hydrocarbons F1 to F4 Fractions (ug/L or ppb)**  
**49 Iona St, Ottawa, ON**  
**MM-1027**

Sample ID		Benzene	Ethyl Benzene	Toluene	m,p-Xylene	o-Xylene	Xylene (Total)	PHC F1 (C6-C10)	PHC F2 (C10-C16)	PHC F3 (C16-C34)	PHC F4 (>C34)
MOECP Standards Table	MDL (ug/L)	0.5	0.5	0.5	0.5	0.5	0.5	25	100	100	100
Reg 153/04 (2011)	Date	44	2300	18000	nv	nv	4200	750	150	500	500
<b>Monitoring Well Samples</b>											
<b>MW10</b>	25-Mar-10	<5	7.8	<5	<0.5	<0.5	20.6	<2000 [3]	<217 [1]	<217	<217
<b>MW10</b>	18-Oct-11	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW10</b>	18-Jul-12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW10</b>	20-Dec-12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW10</b>	24-Jul-13	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW10</b>	26-May-14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25			<b>Dry</b>
<b>MW10</b>	19-Aug-14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW10</b>	14-Jan-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	338	<100
<b>MW10</b>	21-Aug-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW10</b>	18-Nov-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	427	<100
<b>MW10</b>	27-Jun-17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW10</b>	18-Dec-17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW10</b>	10-Jul-18	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW11</b>	25-Mar-10	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<200	<100	<100	<100
<b>MW11</b>	18-Oct-11	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	539	<100
<b>MW11</b>	18-Jul-12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW11</b>	20-Dec-12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW11</b>	24-Jul-13	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW11</b>	26-May-14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25			<b>Dry</b>
<b>MW11</b>	19-Aug-14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW11</b>	14-Jan-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW11</b>	21-Aug-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW11</b>	18-Nov-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW11</b>	12-Aug-16	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	1580	420
<b>MW11</b>	29-Nov-16	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW11</b>	27-Jun-17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW11</b>	18-Dec-17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	117	<100
<b>MW11</b>	10-Jul-18	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW12</b>	25-Mar-10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<200	<100	<100
<b>MW12</b>	24-Jul-13	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	318	<100
<b>MW12</b>	26-May-14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25			<b>Dry</b>
<b>MW12</b>	14-Jan-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW12</b>	27-Jun-17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW13</b>	25-Mar-10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<200	<100	<100
<b>MW13</b>	18-Oct-11	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	380	130
<b>MW13</b>	20-Dec-12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW13</b>	24-Jul-13	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	755	120
<b>MW13</b>	26-May-14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25			<b>Dry</b>
<b>MW13</b>	19-Aug-14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW13</b>	14-Jan-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	220	<100
<b>MW13</b>	21-Aug-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<207 [1]	<207 [1]	<207 [1]
<b>MW13</b>	18-Nov-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW13</b>	27-Jun-17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	883	166
<b>MW13</b>	18-Dec-17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	634	126
<b>MW13</b>	10-Jul-18	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	1050	152
<b>MW14</b>	25-Mar-10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<200	<100	<100
<b>MW14</b>	18-Oct-11	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW14</b>	18-Jul-12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW14</b>	20-Dec-12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW14</b>	24-Jul-13	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW14</b>	26-May-14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25			<b>Dry</b>
<b>MW14</b>	19-Aug-14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW14</b>	14-Jan-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW14</b>	21-Aug-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW14</b>	18-Nov-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW14</b>	12-Aug-16	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW14</b>	29-Nov-16	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	1330	241
<b>MW14</b>	27-Jun-17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW14</b>	18-Dec-17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW14</b>	10-Jul-18	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100

**Table 2:**  
**Summary of Groundwater Analytical Results**  
**BTEX and Petroleum Hydrocarbons F1 to F4 Fractions (ug/L or ppb)**  
**49 Iona St, Ottawa, ON**  
**MM-1027**

Sample ID		Benzene	Ethyl Benzene	Toluene	m,p-Xylene	o-Xylene	Xylene (Total)	PHC F1 (C6-C10)	PHC F2 (C10-C16)	PHC F3 (C16-C34)	PHC F4 (>C34)
MOECP Standards Table	MDL (ug/L)	0.5	0.5	0.5	0.5	0.5	0.5	25	100	100	100
Reg 153/04 (2011)	Date	44	2300	18000	nv	nv	4200	750	150	500	500
<b>Monitoring Well Samples</b>											
<b>MW15</b>	25-Mar-10	<5	<5	<5	<0.5	<0.5	<10	<2000 [2]	<100	<100	<100
<b>MW15</b>	18-Oct-11	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	120	1040	160
<b>MW15</b>	18-Jul-12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW15</b>	20-Dec-12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	631	145
<b>MW15</b>	24-Jul-13	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	323	<100
<b>MW15</b>	26-May-14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25			
<b>MW15</b>	19-Aug-14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW15</b>	14-Jan-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW15</b>	21-Aug-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW15</b>	12-Aug-16	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	212	<100
<b>MW15</b>	29-Nov-16	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW15</b>	27-Jun-17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW15</b>	18-Dec-17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW15</b>	10-Jul-18	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW16</b>	25-Mar-10	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<200	<100	<100	<100
<b>MW16</b>	18-Jul-12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW16</b>	20-Dec-12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW16</b>	24-Jul-13	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW16</b>	26-May-14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25			
<b>MW16</b>	19-Aug-14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	1380	277
<b>MW16</b>	20-Jan-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW16</b>	21-Aug-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW16</b>	18-Nov-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW16</b>	29-Nov-16	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	266	<100
<b>MW16</b>	27-Jun-17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW16</b>	18-Dec-17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	651	113
<b>MW16</b>	10-Jul-18	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW17</b>	25-Mar-10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<200	<100	<100
<b>MW17</b>	18-Jul-12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW17</b>	20-Dec-12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW17</b>	24-Jul-13	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW17</b>	26-May-14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25			
<b>MW17</b>	20-Jan-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW17</b>	21-Aug-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW17</b>	18-Nov-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<168 [1]	<168 [1]	<168 [1]
<b>MW17</b>	29-Nov-16	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW17</b>	27-Jun-17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	1180	126
<b>MW17</b>	10-Jul-18	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	275	<100
<b>MW18</b>	25-Mar-10	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<200	<100	<100	<100
<b>MW18</b>	19-Oct-11	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	297	170
<b>MW18</b>	18-Jul-12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	152	<100
<b>MW18</b>	24-Jul-13	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW18</b>	26-May-14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25			
<b>MW18</b>	19-Aug-14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW18</b>	20-Jan-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW18</b>	21-Aug-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW18</b>	18-Nov-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW18</b>	29-Nov-16	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW18</b>	27-Jun-17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW18</b>	10-Jul-18	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW19</b>	20-Jul-10	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<200 [3]	186	<186	<186
<b>MW19</b>	18-Oct-11	-	-	-	-	-	-	<25	<100	420	200
<b>MW19</b>	18-Jul-12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW19</b>	20-Dec-12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW19</b>	24-Jul-13	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW19</b>	26-May-14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25			
<b>MW19</b>	19-Aug-14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW19</b>	14-Jan-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW19</b>	21-Aug-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW19</b>	18-Nov-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100

**Table 2:**  
**Summary of Groundwater Analytical Results**  
**BTEX and Petroleum Hydrocarbons F1 to F4 Fractions (ug/L or ppb)**  
**49 Iona St, Ottawa, ON**  
**MM-1027**

Sample ID		Benzene	Ethyl Benzene	Toluene	m,p-Xylene	o-Xylene	Xylene (Total)	PHC F1 (C6-C10)	PHC F2 (C10-C16)	PHC F3 (C16-C34)	PHC F4 (>C34)
MOECP Standards Table	MDL (ug/L)	0.5	0.5	0.5	0.5	0.5	0.5	25	100	100	100
Reg 153/04 (2011)	Date	44	2300	18000	nv	nv	4200	750	150	500	500
<b>Monitoring Well Samples</b>											
MW19	12-Aug-16	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW19	29-Nov-16	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW19	27-Jun-17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW19	10-Jul-18	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW20	20-Jul-10	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<200 [3]	<100	<100	<100
MW20	18-Oct-11	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW20	18-Jul-12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW20	20-Dec-12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW20	24-Jul-13	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW20	26-May-14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<b>Dry</b>		
MW20	19-Aug-14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<b>1370</b>	286
MW20	14-Jan-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<b>1050</b>	187
MW20	21-Aug-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	125	<100
MW20	12-Aug-16	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	360	<100
MW20	29-Nov-16	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	377	<100
MW20	27-Jun-17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	231	<100
MW20	18-Dec-17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<b>1220</b>	299
MW20	10-Jul-18	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW21	20-Jul-10	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<200 [3]	<100	<100	<100
MW21	19-Oct-11	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW21	18-Jul-12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW21	20-Dec-12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW21	24-Jul-13	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW21	19-Aug-14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW21	14-Jan-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW21	21-Aug-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	237	<100
MW21	18-Nov-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW21	12-Aug-16	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW21	29-Nov-16	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	445	<100
MW21	27-Jun-17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW21	18-Dec-17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW21	10-Jul-18	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW22	20-Jul-10	<0.5	<0.5	<0.5	-	-	<1	<200	<b>&lt;407 [3]</b>	<407	<407
MW22	18-Oct-11	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW22	18-Jul-12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW22	20-Dec-12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW22	24-Jul-13	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW22	19-Aug-14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW22	14-Jan-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW22	21-Aug-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW22	18-Nov-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW22	12-Aug-16	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW22	29-Nov-16	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW22	27-Jun-17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW22	18-Dec-17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW22	10-Jul-18	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW23	26-Jul-11	<0.5	<0.5	1.4	-	-	2.1	<25	<100	<100	<100
MW23	18-Jul-12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW23	20-Dec-12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW23	24-Jul-13	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW23	26-May-14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<b>Dry</b>		
MW23	19-Aug-14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW23	14-Jan-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW23	21-Aug-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100 [4]	<100 [4]	<100 [4]
MW23	18-Nov-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<b>565</b>	230
MW23	12-Aug-16	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW23	29-Nov-16	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
MW23	27-Jun-17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	352	<100
MW23	10-Jul-18	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100

**Table 2:**  
**Summary of Groundwater Analytical Results**  
**BTEX and Petroleum Hydrocarbons F1 to F4 Fractions (ug/L or ppb)**  
**49 Iona St, Ottawa, ON**  
**MM-1027**

Sample ID		Benzene	Ethyl Benzene	Toluene	m,p-Xylene	o-Xylene	Xylene (Total)	PHC F1 (C6-C10)	PHC F2 (C10-C16)	PHC F3 (C16-C34)	PHC F4 (>C34)
MOECP Standards Table	MDL (ug/L)	0.5	0.5	0.5	0.5	0.5	0.5	25	100	100	100
Reg 153/04 (2011)	Date	44	2300	18000	nv	nv	4200	750	150	500	500
<b>Monitoring Well Samples</b>											
<b>MW24</b>	20-Jul-10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW24</b>	18-Jul-12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW24</b>	20-Dec-12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW24</b>	24-Jul-13	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW24</b>	26-May-14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<b>Dry</b>		
<b>MW24</b>	19-Aug-14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW24</b>	20-Jan-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW24</b>	21-Aug-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW24</b>	18-Nov-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	170	<100
<b>MW24</b>	12-Aug-16	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW24</b>	29-Nov-16	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW24</b>	27-Jun-17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW24</b>	10-Jul-18	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW25</b>	20-Jul-10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW25</b>	18-Jul-12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW25</b>	24-Jul-13	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<b>2920</b>	<b>580</b>
<b>MW25</b>	26-May-14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<b>Dry</b>		
<b>MW25</b>	19-Aug-14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW25</b>	14-Jan-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW25</b>	21-Aug-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW25</b>	18-Nov-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	375	104
<b>MW25</b>	29-Nov-16	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW25</b>	27-Jun-17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<b>594</b>	122
<b>MW25</b>	10-Jul-18	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<b>1110</b>	275
<b>MW26</b>	20-Jul-10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	137	<100
<b>MW26</b>	18-Jul-12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	358	203
<b>MW26</b>	20-Dec-12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW26</b>	24-Jul-13	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW26</b>	26-May-14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<b>Dry</b>		
<b>MW26</b>	19-Aug-14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW26</b>	20-Jan-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW26</b>	21-Aug-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW26</b>	18-Nov-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW26</b>	12-Aug-16	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW26</b>	29-Nov-16	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW26</b>	27-Jun-17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	232	<100
<b>MW26</b>	10-Jul-18	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW27</b>	20-Jul-10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW27</b>	18-Jul-12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW27</b>	20-Dec-12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW27</b>	24-Jul-13	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW27</b>	26-May-14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<b>Dry</b>		
<b>MW27</b>	19-Aug-14	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW27</b>	20-Jan-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW27</b>	21-Aug-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW27</b>	18-Nov-15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW27</b>	12-Aug-16	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW27</b>	29-Nov-16	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW27</b>	27-Jun-17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW27</b>	18-Dec-17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	237	<100
<b>MW27</b>	10-Jul-18	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100
<b>MW28</b>	27-Jun-17	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<25	<100	<100	<100

**Table 2:**  
**Summary of Groundwater Analytical Results**  
**BTEX and Petroleum Hydrocarbons F1 to F4 Fractions (ug/L or ppb)**  
**49 Iona St, Ottawa, ON**  
**MM-1027**

Sample ID		Benzene	Ethyl Benzene	Toluene	m,p-Xylene	o-Xylene	Xylene (Total)	PHC F1 (C6-C10)	PHC F2 (C10-C16)	PHC F3 (C16-C34)	PHC F4 (>C34)
MOECP Standards Table	MDL (ug/L)	0.5	0.5	0.5	0.5	0.5	0.5	25	100	100	100
Reg 153/04 (2011)	Date	44	2300	18000	nv	nv	4200	750	150	500	500

**Monitoring Well Samples**

**Notes:**

ppb

"<" - All concentrations provided in parts per billion (micrograms per gram - µg/L)

NV - Less than detection limits indicated (refer to laboratory report)

- No standard listed

MOECP - Standards from the Ontario Ministry of Environment Conservation and Parks (MOECP) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the

**Bold / Italics** Reg 153/04 (2011)-Table 3 Non-Potable Groundwater, coarse

[1] - Indicates exceedance of MOECP Table Standards.

[2] - Elevated Reporting Limits due to limited sample volume

[3] - Elevated detection limits due to sediment-Insufficient sample volume.Voc vials were decanted in to a single vial prior to analysis and diluted.

- Please note that due to significant sediment, submitted VOC vials were decanted into a single vial prior to analysis.

**Table 3:**  
**Groundwater Laboratory Analytical Results - Polycyclic Aromatic Hydrocarbons (PAHs)**  
**49 Iona St., Ottawa, ON**  
**MM-1027**

Sample ID	Date	Acenaphthene	Acenaphthylene	Anthracene	Benzofluoranthene	Benzol[a]pyrene	Benzol[b]fluoranthene	Benzol[g,h]perylene	Benzol[k]fluoranthene	1,1-Biphenyl	Chrysene	Dibenzofluoranthene	Fluoranthene	Fluorene	Indeno[1,2,3-cd]pyrene	Indeno[1,2,3-ij]naphthalene	1-Methylnaphthalene	2-Methylnaphthalene	Methylnaphthalene (1a2)	Naphthalene	Phenanthrene	Pyrene		
		MDL	0.05	0.05	0.01	0.01	0.01	0.05	0.05	0.05	0.05	0.05	0.01	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.01
		MOQL/CL (Table 3 (2014))	600	1.8	2.4	4.7	0.81	0.75	0.2	0.4	1000	1	0.52	130	400	0.2	1800	1800	1800	1400	580	68		
MW1	11-Nov-09	2.39	0.43	0.78	0.61	0.47	0.62	0.26	0.24	0.53	0.58	<0.05	2.1	2.11	0.23	4.29	<0.05	4.295	2.12	2.35	1.61			
MW1	18-Oct-11	0.91	2.59	2.09	5.33	6.06	9.81	3.99	3.65	0.3	5.42	1.07	6.86	0.72	3.67	0.42	0.26	0.68	2.23	1.79	6.7			
MW1	18-Jul-12	0.18	0.12	0.12	0.2	0.18	0.22	0.14	0.23	<0.05	0.22	<0.05	0.42	0.13	0.11	0.07	<0.05	0.12	0.24	0.11	0.49			
MW1	20-Dec-12	<0.05	<0.05	0.06	0.06	0.04	0.09	<0.05	<0.05	<0.05	0.05	<0.05	0.13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.10	0.1	<0.05	0.12		
MW1	26-May-14																							
MW1	19-Aug-14	<0.05	2.2	1.66	1.54	0.89	2.39	0.76	1	na	1.64	0.21	3.41	0.4	0.79	<0.05	<0.05	<0.10	1.89	2.02	2.9			
MW1	14-Jan-15	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	na	<0.05	<0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.05	0.04		
MW1	21-Aug-15	<0.05	<0.05	0.04	0.12	0.09	0.19	0.13	0.09	na	0.15	<0.05	0.25	<0.05	0.11	<0.05	<0.05	<0.10	0.07	0.11	0.21			
MW1	18-Nov-15	<0.05	<0.05	0.06	0.1	0.07	0.18	0.13	0.13	na	0.16	<0.05	0.24	<0.05	0.13	<0.05	<0.05	<0.10	0.06	<0.05	0.19			
MW1	29-Nov-16	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	na	<0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.05	<0.01		
MW2	11-Nov-09	2.16	1.61	2.53	3.89	3.18	4.09	1.68	1.97	0.34	3.65	0.43	11.1	2.32	1.53	0.7	0.65	1.35	2.44	5.91	9.77			
MW2	18-Oct-11	0.61	5.95	5.47	15.8	16.6	23.4	10.2	9.37	0.11	14.9	3.94	36.9	0.87	10.3	0.1	0.12	0.22	0.47	3.98	32.3			
MW2	18-Jul-12	0.05	1.57	1.31	3.5	3.79	4.4	2.37	4.22	<0.05	3.66	0.45	5.55	0.1	2.1	<0.05	<0.05	<0.1	0.22	0.81	5.4			
MW2	20-Dec-12	0.07	0.76	0.58	1.25	1.41	2.05	0.89	0.85	<0.05	1.23	0.28	2.99	0.07	0.88	<0.05	0.07	0.11	0.43	0.45	2.82			
MW2	24-Jul-13	0.07	1.61	1.14	3.16	2.99	3.12	1.71	1.16	<0.05	2.81	0.54	4.96	<0.05	1.75	<0.05	<0.05	<0.10	0.14	0.68	4.93			
MW2	26-May-14	0.07	0.86	0.8	2.44	2.25	3.6	1.35	2.15	<0.05	2.65	0.44	4.29	0.07	1.33	<0.05	<0.05	<0.10	0.21	0.73	4.24			
MW2	19-Aug-14	<0.05	0.56	0.46	1.27	1.26	1.75	0.55	0.64	na	1.13	<0.05	1.89	<0.05	0.58	<0.05	<0.05	<0.10	<0.05	0.31	1.89			
MW2	14-Jan-15	<0.05	0.22	0.13	0.44	0.44	0.74	0.32	0.35	na	0.42	<0.05	0.75	<0.05	0.27	<0.05	<0.05	<0.10	0.05	0.11	0.75			
MW2	21-Aug-15	<0.05	0.64	0.39	1.71	2.19	3.01	1.53	1.21	na	1.89	0.31	3.49	<0.05	1.39	<0.05	<0.05	<0.10	0.08	0.56	3.3			
MW2	18-Nov-15	0.06	0.91	0.54	1.51	2.01	2.6	1.35	1.91	na	1.57	0.27	3.32	<0.05	1.41	<0.05	<0.05	<0.10	0.13	0.41	3.17			
MW2	29-Nov-16	<0.05	0.1	<0.01	0.18	0.24	0.28	0.18	0.25	na	0.16	0.05	0.34	<0.05	0.18	<0.05	<0.05	<0.10	<0.05	<0.05	0.33			
MW2	18-Dec-17	0.11	0.22	0.14	0.21	0.24	0.08	0.17	0.08	na	0.21	0.05	0.51	<0.05	0.16	<0.05	<0.05	<0.10	0.23	0.11	0.5			
MW3	11-Nov-09	1.59	0.49	0.57	0.62	0.31	0.21	0.12	0.17	0.16	0.51	<0.05	3.02	0.64	0.11	0.27	0.17	0.44	0.78	1.75	2.64			
MW3	18-Oct-11	0.22	0.19	0.22	0.43	0.4	0.55	0.24	0.41	0.11	0.37	<0.05	0.6	0.25	0.22	0.15	0.21	0.36	0.93	0.2	0.58			
MW3	20-Dec-12	<0.05	<0.05	0.02	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.02	<0.05	<0.05	<0.05	<0.05	0.07	0.17	0.24	0.8	0.06	0.02	
MW3	24-Jul-13	<0.05	<0.05	0.03	0.05	0.04	0.07	<0.05	<0.05	0.09	<0.05	<0.05	<0.04	<0.05	<0.05	<0.05	<0.05	0.12	0.29	0.41	1.45	0.09	0.04	
MW3	26-May-14	0.18	0.41	0.24	0.9	0.85	1.72	0.73	0.86	0.57	0.92	0.19	1.2	0.2	0.62	0.77	2.12	2.89	12.6	0.82	1.1			
MW3	19-Aug-14	<0.05	0.11	<0.01	0.09	<0.01	0.27	0.08	0.09	na	0.12	<0.05	0.18	<0.05	0.09	0.19	0.51	0.7	3.34	0.24	0.18			
MW3	14-Jan-15	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.10	0.57	<0.05	0.01			
MW3	21-Aug-15	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	na	<0.05	<0.05	0.03	<0.05	<0.05	<0.05	<0.05	0.17	0.24	0.73	<0.05	0.03		
MW3	18-Nov-15	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	na	<0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	0.12	0.47	<0.05	0.02			
MW3	29-Nov-16	<0.05	<0.05	0.04	0.07	0.1	<0.05	0.09	0.05	na	0.07	<0.05	0.13	<0.05	0.09	0.09	0.18	0.27	0.9	0.08	0.12			
MW3	18-Dec-17	<0.05	0.07	0.11	0.05	0.06	0.07	0.05	0.06	na	0.06	<0.05	0.08	<0.05	0.11	0.26	0.26	1.4	0.11	0.08				
MW4	11-Nov-09	11.4	2.61	6.92	3.71	2.26	3.09	1.07	1.23	2.82	3.16	0.3	16.7	12.9	1	11.6	4.17	15.77	31.4	21.7	13.4			
MW4	24-Jul-13	0.57	0.71	0.69	0.91	0.97	1.17	0.78	0.42	1.25	0.78	<0.05	1.38	0.64	0.71	2.67	7.08	9.74	31.2	2.05	1.24			
MW4	19-Aug-14	0.28	0.44	0.49	0.78	0.78	1.13	0.39	0.43	na	<0.05	0.08	2.02	0.39	0.41	0.82	2.25	3.07	15.9	0.98	2.02			
MW4	29-Nov-16	0.8	1.46	1.08	3.56	5.12	6.01	4.06	3.18	na	3.3	1.16	5.82	0.85	3.79	3.51	9.76	13.3	46.5	2.83	5.48			
MW5	11-Nov-09	0.06	0.07	0.07	0.19	0.13	0.17	0.07	0.08	0.11	0.2	<0.05	0.37	0.09	0.06	0.09	0.11	0.2	0.15	0.27	0.85			
MW5	18-Oct-11	0.48	1.21	1.99	6.27	5.58	8.42	3.41	4.53	0.08	5.8	0.86	13.6	0.52	3.31	0.06	0.12	0.3	6.19	11.5				
MW5	18-Jul-12	<0.05	0.1	0.11	0.37	0.35	0.32	0.21	0.38	0.06	0.38	0.07	0.75	0.07	0.17	0.12	0.19	0.31	0.34	0.67				
MW5	20-Dec-12	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.03	<0.05	<0.05	<0.05	<0.05	<0.10	0.23	<0.05	0.03			
MW5	24-Jul-13	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.03	<0.05	<0.05	<0.05	<0.05	<0.10	0.23	<0.05	0.03			
MW5	26-May-14	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.10	0.23	<0.05	0.03			
MW5	19-Aug-14	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	na	<0.05	<0.05	0											

**Table 3:**  
**Groundwater Laboratory Analytical Results - Polycyclic Aromatic Hydrocarbons (PAHs)**  
**49 Iona St., Ottawa, ON**  
**MM-1027**

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**Groundwater Laboratory Analytical Results - Polycyclic Aromatic Hydrocarbons (PAHs)**  
**49 Iona St., Ottawa, ON**  
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Sample ID	Date	Analytical Results (ng/L)																					
		MDL		Acenaphthene	Acenaphthylene	Anthracene	Benzolanthracene	Benzol[ghi]perylene															
		MCCLC Table 3 (2014)	600	0.05	0.05	0.01	0.01	0.01	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	
MW10	18-Nov-15	<0.05	<0.05	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	na	<0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	
MW10	18-Dec-17	<0.05	<0.05	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	na	<0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.10	0.11	
MW11	25-Mar-10	0.06	0.09	0.08	0.07	0.07	0.07	<0.05	<0.05	0.05	0.07	0.12	<0.05	0.77	0.07	<0.05	0.07	0.08	0.15	0.16	0.66	0.99	
MW11	18-Oct-11	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.01	
MW11	18-Jul-12	<0.05	<0.05	<0.01	0.03	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	0.06	<0.05	0.08	<0.05	<0.05	<0.05	<0.05	<0.1	0.08	0.06	0.09	
MW11	20-Dec-12	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.01	
MW11	24-Jul-13	<0.05	<0.05	<0.01	0.05	0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.10	0.05	<0.05	0.03
MW11	26-May-14	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.01
MW11	19-Aug-14	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	na	<0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.01
MW11	21-Aug-15	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	na	<0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.01
MW11	29-Nov-16	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	na	<0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.01
MW11	18-Dec-17	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	na	<0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.01
MW12	25-Mar-10	1.21	0.23	0.99	0.54	0.31	0.72	0.19	0.68	0.3	0.52	<0.1	2.43	1.57	0.17	0.79	0.87	1.66	4.15	4.25	1.89		
MW12	24-Jul-13	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.03	0.03	<0.05	<0.05	<0.05	<0.05	<0.10	0.05	<0.05	0.03	
MW12	26-May-14	0.17	<0.05	0.03	0.14	0.05	0.12	<0.05	0.07	<0.05	<0.05	0.09	0.05	<0.05	0.22	0.06	<0.05	<0.05	<0.10	0.74	0.2	0.18	
<b>Dry</b>																							
<b>Dry</b>																							
MW13	25-Mar-10	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	0.06	<0.05	<0.05	<0.01	<0.05	<0.05	0.07	0.08	0.15	0.1	<0.05	<0.01		
MW13	18-Oct-11	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	0.2	<0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.1	0.39	<0.05	<0.01		
MW13	20-Dec-12	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.01		
MW13	26-May-14	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.10	0.18	<0.05	<0.01		
<b>Dry</b>																							
MW13	19-Aug-14	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.01		
MW13	21-Aug-15	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	na	<0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.01		
MW13	18-Nov-15	<0.10 [1]	<0.10 [1]	0.02 [1]	0.02 [1]	0.02 [1]	<0.10 [1]	<0.10 [1]	<0.10 [1]	<0.10 [1]	na	<0.10 [1]	<0.10 [1]	<0.02 [1]	<0.10 [1]	<0.10 [1]	<0.10 [1]	<0.10 [1]	<0.20 [1]	0.23 [1]	<0.10 [1]	<0.02 [1]	
MW13	18-Jan-16	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	na	<0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.10	0.08	<0.05	<0.01	
MW14	25-Mar-10	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	<0.05	<0.05	0.08	0.09	0.17	0.12	<0.05	0.04		
MW14	18-Oct-11	<0.05	0.08	0.06	0.18	<0.01	0.26	0.07	0.26	0.09	0.15	0.05	0.19	<0.05	0.05	<0.05	<0.1	0.12	0.07	0.19			
MW14	18-Jul-12	<0.05	<0.05	0.03	0.1	0.06	0.08	<0.05	0.09	<0.05	0.09	<0.05	0.14	<0.05	<0.05	<0.05	<0.1	0.14	<0.05	0.14			
MW14	20-Dec-12	<0.05	<0.05	0.02	0.06	0.06	0.09	<0.05	0.05	<0.05	0.05	0.05	0.09	<0.05	<0.05	<0.05	<0.10	0.07	<0.05	0.09			
MW14	24-Jul-13	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.03	<0.05	<0.05	<0.05	<0.05	<0.10	0.05	<0.05	0.02		
MW14	26-May-14	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.03	<0.05	<0.05	<0.05	<0.05	<0.10	0.05	<0.05	<0.01		
MW14	19-Aug-14	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.02	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.01		
MW14	14-Jan-15	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.06	<0.05	<0.05	<0.05	<0.05	<0.10	0.09	<0.05	0.04		
MW14	21-Aug-15	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.01	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.01		
MW14	18-Nov-15	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.01	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.01		
MW14	29-Nov-16	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.01	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.01		
MW15	25-Mar-10	27.3	1.24	10.1	7.09	6.45	7.88	3.59	5.04	2	7.9	0.95	24.5	18.6	3.69	8.93	10	18.93	41.2	39.6	18.9		
MW15	19-Oct-11	9.96	<0.05	17.7	64.3	51.3	70.4	25	45.6	<0.05	67.1	<0.05	128	8.01	22.2	<0.05	<0.1	5.09	70.4	114			
MW15	18-Jul-12	3.17	0.69	3.38	11	12.3	14.6	7.76	10.5	0.27	11.8	2.71	21.1	2.24	7.82	0.84	0.51	1.35	3.74	12.1	18.9		
MW15	20-Dec-12	0.90 [2]	0.36 [2]	2.07 [2]	10.3 [2]	7.10 [2]	15.4 [2]	4.18 [2]	6.83 [2]	0.14 [2]	11.1 [2]	1.51 [2]	22.5 [2]	0.89 [2]	4.47 [2]	0.47 [2]	0.39 [2]	0.86 [2]	1.06 [2]	8.47 [2]	18.3 [2]		
MW15	24-Jul-13	0.39	<0.25 [1]	0.81	3	2.16	3.85	1.18	1.44	<0.25 [1]	2.7	<0.25 [1]	3.58	0									

**Table 3:**  
**Groundwater Laboratory Analytical Results - Polycyclic Aromatic Hydrocarbons (PAHs)**  
**49 Iona St., Ottawa, ON**  
**MM-1027**

Sample ID	Date	Acenaphthene	Acenaphthylene	Anthracene	Benzolanthracene	Benzol[ghi]perylene	Benzol[ghi]fluoranthene	Benzol[ghi]perylene	Benzol[ghi]fluoranthene	Biphenyl	Chrysene	Dibenzol[a,h]anthracene	Fluoranthene	Fluorene	Indeno[1,2,3-cd]pyrene	Indeno[1,2,3-cd]pyrene	Methylnaphthalene	Methylnaphthalene (1&2)	Naphthalene	Phenanthrene	Pyrene		
		MDL	0.05	0.05	0.01	0.01	0.01	0.05	0.05	0.05	1000	1	0.52	130	400	0.05	0.05	0.05	0.05	0.1	0.05	0.05	
		MOQL/CL (Table 3 (2014))	600	1.8	2.4	4.7	4.0	0.81	0.75	0.2	0.4					0.2	1800	1800	1800	1400	580	68	
MW16	31-Mar-10	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	0.04	
MW16	24-Jul-13	<0.05	<0.05	<0.01	<0.01	0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.10	0.08	0.08	0.02	
MW16	26-May-14	<0.05	<0.05	0.01	0.09	0.05	0.1	<0.05	0.06	<0.05	0.09	<0.05	0.18	<0.05	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	0.15	0.15	
MW16	19-Aug-14	<0.10	<0.10	<0.02	<0.02	<0.02	<0.10	<0.10	<0.10	na	<0.10	<0.10	<0.02	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.10	<0.10	<0.02	
MW16	20-Jan-15	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	na	<0.05	<0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	0.05	
MW16	21-Aug-15	<0.05	<0.05	0.03	0.09	0.07	0.12	<0.06	0.06	na	0.1	<0.05	0.27	<0.05	<0.05	<0.05	<0.05	<0.05	<0.10	0.28	0.2	0.2	
MW16	18-Nov-15	<0.05 [1]	<0.05 [1]	<0.01 [1]	<0.01 [1]	<0.01 [1]	<0.05 [1]	<0.05 [1]	<0.05 [1]	na	<0.05 [1]	<0.05 [1]	<0.01 [1]	<0.05 [1]	<0.05 [1]	<0.05 [1]	<0.05 [1]	<0.05 [1]	<0.01 [1]	<0.05 [1]	<0.05 [1]	<0.1 [1]	
MW17	31-Mar-10	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.01	
MW17	24-Jul-13	<0.05	<0.05	<0.01	<0.01	0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	0.15	0.15	
MW17	26-May-14	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	na	<0.10	<0.10	<0.02	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.10	<0.10	<0.02	
MW17	19-Aug-14	<0.10	<0.10	<0.02	<0.02	<0.02	<0.10	<0.10	<0.10	na	<0.10	<0.10	<0.02	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.10	<0.10	<0.02	
MW17	20-Jan-15	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	na	<0.05	<0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	0.05	
MW17	21-Aug-15	<0.05	<0.05	0.03	0.09	0.07	0.12	<0.06	0.06	na	0.1	<0.05	0.27	<0.05	<0.05	<0.05	<0.05	<0.05	<0.10	0.28	0.2	0.2	
MW17	18-Nov-15	<0.05 [1]	<0.05 [1]	<0.01 [1]	<0.01 [1]	<0.01 [1]	<0.05 [1]	<0.05 [1]	<0.05 [1]	na	<0.05 [1]	<0.05 [1]	<0.01 [1]	<0.05 [1]	<0.05 [1]	<0.05 [1]	<0.05 [1]	<0.05 [1]	<0.01 [1]	<0.05 [1]	<0.05 [1]	<0.1 [1]	
<b>Dry</b>																							
MW18	31-Mar-10	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.01	
MW18	24-Jul-13	<0.10 [1]	<0.10 [1]	<0.02 [1]	<0.02 [1]	<0.02 [1]	<0.10 [1]	<0.10 [1]	<0.10 [1]	<0.10 [1]	<0.10 [1]	<0.10 [1]	<0.10 [1]	<0.10 [1]	<0.10 [1]	<0.10 [1]	<0.10 [1]	<0.10 [1]	<0.10 [1]	<0.20 [1]	<0.10 [1]	<0.10 [1]	0.18
MW18	26-May-14	<0.05	<0.05	0.01	0.06	0.02	0.06	<0.05	<0.05	<0.05	0.06	<0.05	0.11	<0.05	<0.05	<0.05	<0.05	<0.05	<0.10	<0.08	0.09	0.09	
MW18	19-Aug-14	<0.10	<0.10	0.13	0.26	<0.02	0.31	<0.10	0.11	na	0.26	<0.10	<0.6	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	0.21	0.51	0.48	
MW18	21-Aug-15	<0.05	<0.05	0.07	0.31	0.42	0.53	0.34	0.27	na	0.47	<0.05	1.03	<0.05	0.32	<0.05	<0.05	<0.10	<0.05	0.64	0.84	0.84	
MW18	18-Nov-15	<0.10 [1]	<0.10 [1]	0.09 [1]	0.31 [1]	0.37 [1]	0.63 [1]	0.33 [1]	0.42 [1]	na	0.44 [1]	0.13 [1]	0.93 [1]	<0.10 [1]	0.30 [1]	<0.10 [1]	<0.10 [1]	<0.10 [1]	<0.20 [1]	<0.10 [1]	0.64 [1]	0.76 [1]	
MW19	20-Jul-10	18.9	<0.15	7.41	12.3	11.2	14.5	6.37	5.23	0.99	12.5	1.93	31.8	11.7	6.34	5.72	5.62	11.34	24.1	43.9	24.8		
MW19	18-Oct-11	28.5	<0.05	84.4	270	202	274	93.1	162	<0.05	272	<0.05	572	26.7	93.5	<0.05	<0.05	<0.1	<0.05	394	482		
MW19	18-Jul-12	2.47	0.14	6.25	15.3	16.7	18.3	10.2	14.7	0.1	16.3	3.78	27	2.6	10.1	0.2	0.21	0.41	0.44	21	26		
MW19	20-Dec-12	0.51	<0.05	1.14	9.52	6.63	13.9	3.8	5.63	<0.05	9.52	1.37	10.8	0.51	4.07	0.14	0.17	0.31	0.28	6.44	8.69		
MW19	24-Jul-13	0.69	<0.05	1.51	6.27	5.4	8.73	2.85	3.29	<0.05	6.01	0.71	15.3	0.58	2.94	0.14	0.1	0.24	0.12	9.01	9.19		
MW19	26-May-14	0.12	<0.05	0.19	1.34	1.12	1.69	0.87	1.22	<0.5	1.53	0.18	3.22	<0.5	0.7	<0.5	<0.5	<0.1	<0.05	1.28	3.05		
MW19	19-Aug-14	2.58	0.21	4.6	22.3	20.3	25.5	14.4	12.7	na	18.3	3.49	76.5	2.19	15.2	0.14	<0.05	0.14	0.28	40.9	66.7		
MW19	14-Jan-15	0.59	<0.10	0.92	4.19	4.03	6.39	2.47	2.56	na	4.8	0.53	12.2	0.4	2.3	<0.10	<0.10	<0.20	<0.10	7.06	10.2		
MW19	21-Aug-15	0.1	<0.05	0.17	0.83	0.96	1.4	0.67	0.56	na	0.95	<0.05	2.54	0.07	0.62	<0.05	<0.05	<0.1	<0.05	1.1	2.11		
MW19	18-Nov-15	0.24 [1]	<0.10 [1]	0.53 [1]	1.90 [1]	2.02 [1]	2.66 [1]	1.24 [1]	2.21 [1]	na	2.06 [1]	0.24 [1]	5.15 [1]	0.20 [1]	1.29 [1]	<0.10 [1]	<0.10 [1]	<0.20 [1]	<0.10 [1]	2.71 [1]	4.20 [1]		
MW19	29-Nov-16	0.13	<0.05	0.27	1.55	1.84	2.15	1.28	1.15	na	1.49	0.35	4.31	<0.05	1.32	<0.05	<0.05	<0.1	<0.05	1.44	3.53		
MW19	18-Dec-17	0.05	<0.05	0.13	0.53	0.56	0.79	0.44	0.35	na	0.64	0.12	1.4	<0.05	0.4	<0.05	<0.05	<0.1	<0.05	0.57	1.16		
MW20	20-Jul-10	38.8	<0.05	11.4	2.54	1.79	2.34	0.99	0.84	3.6	2.48	<0.15	13.9	21.9	0.91	15.4	23.5	38.9	146	62.3	9.96		
MW20	24-Jul-13	<0.10 [1]	0.31	0.34	1.59	1.41	2.51	0.86	0.95	<0.10 [1]	1.67	<0.10 [1]	0.91	<0.10 [1]	0.77	<0.10 [1]	<0.10 [1]	<0.20 [1]	0.12	0.63	0.9		
MW20	26-May-14	<0.05	<0.05	0.02	0.11	0.07	0.12	0.07	0.09	<0.05	0.14	<0.05	0.09	<0.05	0.06	<0.05	<0.05	<0.10	0.21	0.11	0.08		
MW20	19-Aug-14	<0.15	0.59	0.7	3.9	3.21	5.85	0.92	2.1	na	3.36	0.43	5.93	<0.15	1.69	<0.15	<0.15	<0.30	<0.15	1.37	5.39		
MW20	14-Jan-15	<0.05	<0.05	0.01	0.08	0.07	0.12	0.06	<0.05	na	0.08	<0.05	0.14	<0.05	0.05	<0.05	<0.05	<0.10	0.21	0.13	0.14		
MW20	21-Aug-15	<0.05	<0.05	0.04	0.27	0.3	0.42	0.24	0.17	na	0.31	<0.05	0.48	<0.05	0.21	<0.05	<0.05	<0.10	0.07	0.19	0.43		
MW20	29-Nov-16	<0.05	<0.05	0.12	0.71	0.94	1.16	0.73	0.91	na	0.76	0.21	1.3	<0.05	0.72	<0.05	<0.05	<0.10	0.14	0.29	1.10		
MW21	20-Jul-10	<0.15	<0.15	<0.03	<0.03	<0.03	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.03	<0.15	<0.15	<0.15	<0.15	<0.1	<0.15	<0.15	<0.03		
MW21	24-Jul-13	<0.40 [1]	<0.40 [1]	0.3	1.18	0.87	1.29	0.49	0.71	<0.40 [1]	1.1	<0.40 [1]	2.54	<0.40 [1]	0.44	2.54	<0.40 [1]	>0.80 [1]	<0.40 [1]	0.92	2.4		

**Table 3:**  
**Groundwater Laboratory Analytical Results - Polycyclic Aromatic Hydrocarbons (PAHs)**  
**49 Iona St., Ottawa, ON**  
**MM-1027**

Sample ID	Date	Acenaphthene	Acenaphthylene	Anthracene	Benzolanthracene	Benzol[ghi]perylene	Benzol[bj]fluoranthene	Benzol[q]fluoranthene	1,1-Biphenyl	Chrysene	Dibenzol[a,h]anthracene	Fluoranthene	Fluorene	Indeno[1,2,3-cd]pyrene	1-Methylnaphthalene	2-Methylnaphthalene	Methylnaphthalene (1,2)	Naphthalene	Phenanthrene	Pyrene		
		MDL	0.05	0.05	0.01	0.01	0.05	0.05	0.05	0.05	0.05	0.01	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.01		
		Method Table 3 (2014)	600	1.8	2.4	4.7	0.81	0.75	0.2	0.4	1000	1	0.52	130	400	0.2	1800	1800	1800	1400	580	68
MW22	20-Dec-12	<0.05	0.17	0.15	0.53	0.61	0.84	0.41	0.39	<0.05	0.51	0.12	0.66	<0.05	0.41	<0.05	<0.05	<0.10	0.13	0.09	0.67	
MW22	24-Jul-13	<0.05	0.23	0.15	0.49	0.41	0.75	0.24	0.31	<0.05	0.42	<0.05	0.73	<0.05	0.22	<0.05	<0.05	<0.10	0.13	0.09	0.67	
MW22	26-May-14																					
MW22	19-Aug-14	<0.05	0.21	0.15	0.35	0.38	0.47	0.22	0.2	na	0.35	<0.05	0.86	<0.05	0.19	<0.05	<0.05	<0.10	<0.05	0.11	0.87	
MW22	14-Jan-15	<0.05	0.09	0.05	0.17	0.18	0.28	0.14	0.14	na	0.17	<0.05	0.29	<0.05	0.11	<0.05	<0.05	<0.10	0.1	0.05	0.29	
MW22	21-Aug-15	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	na	<0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.01	
MW22	18-Nov-15	<0.05	0.06	0.04	0.12	0.14	0.18	0.1	0.13	na	0.13	<0.05	0.18	<0.05	0.1	<0.05	<0.05	<0.10	<0.05	<0.05	0.18	
MW22	29-Nov-16	<0.05	0.05	<0.01	0.1	0.14	<0.05	0.1	<0.05	na	0.11	<0.05	0.2	<0.05	0.1	<0.05	<0.05	<0.10	<0.05	<0.05	0.19	
MW23	18-Jul-12	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.01	
MW23	20-Dec-12	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.01	
MW23	24-Jul-13	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.01	
MW23	26-May-14	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.01	
MW23	19-Aug-14	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	na	<0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.01	
MW23	20-Jan-15	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	na	<0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.01	
MW23	21-Aug-15	<1.00	<1.00	<0.20	<0.20	<0.20	<1.00	<1.00	<1.00	na	<1.00	<1.00	1.22	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	1.05	
MW23	18-Nov-15	<0.05	<0.05	0.03	0.06	0.08	0.14	0.09	0.14	na	0.09	<0.05	0.16	<0.05	0.09	<0.05	<0.05	<0.10	<0.05	0.08	0.14	
MW23	29-Nov-16	<0.05	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	na	<0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.01	
MW24	5-Aug-11	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	0.07	<0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.1	0.12	<0.05	<0.01	
MW24	18-Jul-12	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.01	
MW24	20-Dec-12	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.01	
MW24	24-Jul-13	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.01	
MW24	26-May-14	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.02	
MW24	19-Aug-14	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	na	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.01	
MW24	20-Jan-15	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	na	<0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.01	
MW24	21-Aug-15	<0.05	<0.05	0.01	0.01	0.01	<0.05	<0.05	<0.05	na	<0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.01	
MW24	18-Nov-15	<0.05	<0.05	0.02	0.06	0.07	0.006	0.09	<0.05	na	0.11	<0.05	0.2	<0.05	0.07	<0.05	<0.05	<0.10	<0.05	<0.05	0.16	
MW24	29-Nov-16	<0.05	<0.05	0.04	0.22	0.3	0.43	0.27	0.28	na	0.31	<0.05	0.79	<0.05	0.23	<0.05	<0.05	<0.10	<0.05	0.41	0.62	
MW25	5-Aug-11	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	0.07	<0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.1	1.41	<0.05	<0.01	
MW25	18-Jul-12	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.01	
MW25	24-Jul-13	<0.20 [1]	<0.20 [1]	<0.04 [1]	<0.04 [1]	<0.04 [1]	<0.20 [1]	<0.20 [1]	<0.20 [1]	<0.20 [1]	<0.20 [1]	<0.05	<0.05	<0.05	<0.05	<0.05	<0.20 [1]	<0.20 [1]	<0.20 [1]	<0.20 [1]	<0.04 [1]	
MW25	26-May-14	<0.05	<0.05	<0.01	0.06	0.02	0.06	<0.05	<0.05	<0.05	<0.05	0.06	<0.05	0.11	<0.05	<0.05	<0.05	<0.1	<0.05	0.08	0.09	
MW25	19-Aug-14	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	na	<0.05	<0.05	0.02	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.01	
MW25	20-Jan-15	<0.05	<0.05	0.01	0.1	0.07	0.15	0.06	0.05	na	0.1	<0.05	0.15	<0.05	0.05	<0.05	<0.05	<0.10	<0.05	0.11	0.11	
MW25	21-Aug-15	<0.05	<0.05	0.2	0.09	0.08	0.15	0.07	0.06	na	0.12	<0.05	0.22	<0.05	0.07	<0.05	<0.05	<0.10	<0.05	0.19	0.17	
MW25	18-Nov-15	<0.05	<0.05	0.02	0.06	0.07	0.006	0.09	<0.05	na	0.11	<0.05	0.2	<0.05	0.07	<0.05	<0.05	<0.10	<0.05	0.14	0.16	
MW25	29-Nov-16	<0.05	<0.05	0.04	0.22	0.3	0.43	0.27	0.28	na	0.31	<0.05	0.79	<0.05	0.23	<0.05	<0.05	<0.10	<0.05	0.41	0.62	
MW26	5-Aug-11	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	0.28	<0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	0.1	<0.15	0.9	0.14	<0.01
MW26	18-Jul-12	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.01	
MW26	20-Dec-12	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.01	
MW26	24-Jul-13	<0.05	<0.05	<0.01	0.11	0.09	0.17	<0.05	0.08	<0.05	0.12	<0.05	0.12	<0.05	0.15	<0.05	<0.05	<0.10	<0.05	0.09	0.14	
MW26	26-May-14	<0.05	<0.05	0.05	0.16	0.14	0.28	0.16	0.17	<0.05	0.24	<0.05	0.32	<0.05	0.12	<0.05	<0.05	<0.10	<0.05	0.18	0.28	
MW26	19-Aug-14	<0.05	<0.05	<0.01	0.43	0.27	0.63	0.21	0.38	na	0.48	<0.05	1.16	<0.05	0.19	<0.05	<0.05	<0.10	<0.05	0.72	0.93	
MW26	20-Jan-15	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	na	<0.05	<0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	0.05	
MW26</																						

**Table 3:**  
**Groundwater Laboratory Analytical Results - Polycyclic Aromatic Hydrocarbons (PAHs)**  
**49 Iona St., Ottawa, ON**  
**MM-1027**

Sample ID	Date	Acenaphthene	Acenaphthylene	Anthracene	Benzol[a]anthracene	Benzol[a]pyrene	Benzol[b]fluoranthene	Benzol[g,h,i]perylene	Benzol[k]fluoranthene	1,1-Biphenyl	Chrysene	Dibenzol[a,h]anthracene	Fluoranthene	Fluorene	Indeno[1,2,3-cd]pyrene	1-Methylnaphthalene	2-Methylnaphthalene	Methylnaphtalene (1&2)	Naphthalene	Phenanthrene	Pyrene	
		MDL	0.05	0.05	0.01	0.01	0.01	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05		
		MOE/CCL Table 3 (2014)	600	1.8	2.4	4.7	0.81	0.75	0.2	0.4	1000	1	0.52	130	400	0.2	1800	1800	1400	580	68	
MW27	19-Aug-14	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	na	<0.05	<0.05	0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.01
MW27	21-Aug-15	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	na	<0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.01
MW27	18-Nov-15	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	na	<0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.01
MW27	29-Nov-16	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	na	<0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.01
MW27	18-Dec-17	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	na	<0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.01

**Notes:**

**ppb** - All concentrations provided in parts per billion (micrograms per gram µg/L)

**na** - Not Analysed

"<" - Less than detection limits indicated

**Table 3 standards** - From the Ontario Ministry of Environment (MOE) Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act,  
July 2011, for institutional land use in a non-potable groundwater situation, coarse textured soils.

***BoldItalic*** - Indicates exceedance of applicable MOE standards.

[1] - Elevated Reporting Limits due to limited sample volume

[2] - Water sample included significant sediment amount that was included in extraction process. This is expected to result in reduced accuracy of the reported result.

## **APPENDIX A – ANALYTICAL LABORATORY REPORTS**

**Environmental Monitoring**

**Elmdale Public School**

**Ottawa, ON**

**MM1027**

**CM3 Environmental Inc.**  
*5710 Akins Road, Ottawa, Ontario, K2S 1B8*

## Certificate of Analysis

### CM3 Environmental Inc.

5710 Akins Road  
Ottawa, ON K2S 1B8  
Attn: Marc MacDonald

Client PO: Elmdale P.S.  
Project: MM1027  
Custody: 39690

Report Date: 27-Dec-2017  
Order Date: 19-Dec-2017

**Order #: 1751143**

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

Paracel ID	Client ID
1751143-01	MW13
1751143-02	MW10
1751143-03	MW27
1751143-04	MW11
1751143-05	MW6
1751143-06	MW15
1751143-07	MW7
1751143-08	MW3
1751143-09	MW2
1751143-10	MW8
1751143-11	MW19
1751143-12	MW9
1751143-13	MW16
1751143-14	MW14
1751143-15	MW1
1751143-16	MW21
1751143-17	MW5
1751143-18	MW22
1751143-19	MW20

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 any circumstances be liable to you in connection with this work.

Certificate of Analysis

Report Date: 27-Dec-2017

Client: CM3 Environmental Inc.

Order Date: 19-Dec-2017

Client PO: Elmdale P.S.

Project Description: MM1027

## Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
BTEX by P&T GC-MS	EPA 624 - P&T GC-MS	22-Dec-17	22-Dec-17
PHC F1	CWS Tier 1 - P&T GC-FID	21-Dec-17	22-Dec-17
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	21-Dec-17	21-Dec-17
REG 153: PAHs by GC-MS	EPA 625 - GC-MS, extraction	22-Dec-17	23-Dec-17

Certificate of Analysis  
**Client: CM3 Environmental Inc.**  
**Client PO: Elmdale P.S.**

Report Date: 27-Dec-2017  
 Order Date: 19-Dec-2017  
**Project Description: MM1027**

Client ID:	MW13	Sample Date:	MW10	MW27	MW11
Sample ID:	18-Dec-17	1751143-01	18-Dec-17	1751143-02	18-Dec-17
MDL/Units	Water	Water	Water	Water	Water

**Volatiles**

Benzene	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
Toluene	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
Toluene-d8	Surrogate	83.9%	83.9%	83.5%	85.0%

**Hydrocarbons**

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	634	<100	237	117
F4 PHCs (C34-C50)	100 ug/L	126	<100	<100	<100

**Semi-Volatiles**

Acenaphthene	0.05 ug/L	<0.05	<0.05	<0.05	<0.05
Acenaphthylene	0.05 ug/L	<0.05	<0.05	<0.05	<0.05
Anthracene	0.01 ug/L	<0.01	<0.01	<0.01	<0.01
Benzo [a] anthracene	0.01 ug/L	<0.01	<0.01	<0.01	<0.01
Benzo [a] pyrene	0.01 ug/L	<0.01	<0.01	<0.01	<0.01
Benzo [b] fluoranthene	0.05 ug/L	<0.05	<0.05	<0.05	<0.05
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	<0.05
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	<0.01
Fluorene	0.05 ug/L	<0.05	<0.05	<0.05	<0.05
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	0.08	0.11	<0.05	<0.05
Phenanthrene	0.05 ug/L	<0.05	<0.05	<0.05	<0.05
Pyrene	0.01 ug/L	<0.01	<0.01	<0.01	<0.01
2-Fluorobiphenyl	Surrogate	87.3%	104%	111%	104%
Terphenyl-d14	Surrogate	108%	125%	138%	122%

Certificate of Analysis  
 Client: CM3 Environmental Inc.  
 Client PO: Elmdale P.S.

Report Date: 27-Dec-2017  
 Order Date: 19-Dec-2017  
 Project Description: MM1027

	Client ID: Sample Date: Sample ID: MDL/Units	MW6 18-Dec-17 1751143-05 Water	MW15 18-Dec-17 1751143-06 Water	MW7 18-Dec-17 1751143-07 Water	MW3 18-Dec-17 1751143-08 Water
<b>Volatiles</b>					
Benzene	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
Toluene	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
Toluene-d8	Surrogate	82.8%	84.1%	83.4%	83.8%
<b>Hydrocarbons</b>					
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	162	<100	<100	566
F4 PHCs (C34-C50)	100 ug/L	<100	<100	<100	<100
<b>Semi-Volatiles</b>					
Acenaphthene	0.05 ug/L	<0.05	0.05	<0.05	<0.05
Acenaphthylene	0.05 ug/L	<0.05	<0.05	<0.05	0.07
Anthracene	0.01 ug/L	<0.01	0.08	<0.01	0.11
Benzo [a] anthracene	0.01 ug/L	<0.01	0.08	0.04	0.05
Benzo [a] pyrene	0.01 ug/L	<0.01	0.09	0.04	0.06
Benzo [b] fluoranthene	0.05 ug/L	<0.05	0.11	<0.05	0.07
Benzo [g,h,i] perylene	0.05 ug/L	<0.05	0.07	<0.05	0.05
Benzo [k] fluoranthene	0.05 ug/L	<0.05	0.10	<0.05	0.06
Chrysene	0.05 ug/L	<0.05	0.10	<0.05	0.06
Dibenzo [a,h] anthracene	0.05 ug/L	<0.05	<0.05	<0.05	<0.05
Fluoranthene	0.01 ug/L	<0.01	0.20	0.11	0.08
Fluorene	0.05 ug/L	<0.05	<0.05	<0.05	<0.05
Indeno [1,2,3-cd] pyrene	0.05 ug/L	<0.05	0.06	<0.05	<0.05
1-Methylnaphthalene	0.05 ug/L	<0.05	<0.05	<0.05	0.11
2-Methylnaphthalene	0.05 ug/L	<0.05	<0.05	<0.05	0.26
Methylnaphthalene (1&2)	0.10 ug/L	<0.10	<0.10	<0.10	0.26
Naphthalene	0.05 ug/L	<0.05	<0.05	<0.05	1.40
Phenanthrene	0.05 ug/L	<0.05	0.08	<0.05	0.11
Pyrene	0.01 ug/L	<0.01	0.18	0.09	0.08
2-Fluorobiphenyl	Surrogate	87.6%	83.1%	83.0%	92.8%
Terphenyl-d14	Surrogate	114%	108%	104%	117%

Certificate of Analysis  
**Client: CM3 Environmental Inc.**  
**Client PO: Elmdale P.S.**

Report Date: 27-Dec-2017  
 Order Date: 19-Dec-2017  
**Project Description: MM1027**

Client ID:	MW2	Sample Date:	MW8	MW19	MW9
Sample ID:	18-Dec-17	18-Dec-17	18-Dec-17	18-Dec-17	18-Dec-17
MDL/Units	1751143-09	1751143-10	1751143-11	1751143-12	1751143-12

**Volatiles**

Benzene	0.5 ug/L	<0.5	<0.5	-	<0.5
Ethylbenzene	0.5 ug/L	<0.5	<0.5	-	<0.5
Toluene	0.5 ug/L	<0.5	<0.5	-	<0.5
m,p-Xylenes	0.5 ug/L	<0.5	<0.5	-	<0.5
o-Xylene	0.5 ug/L	<0.5	<0.5	-	<0.5
Xylenes, total	0.5 ug/L	<0.5	<0.5	-	<0.5
Toluene-d8	Surrogate	85.6%	95.4%	-	83.8%

**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	569	433	-	295
F4 PHCs (C34-C50)	100 ug/L	<100	<100	-	<100

**Semi-Volatiles**

Acenaphthene	0.05 ug/L	0.11	<0.05	0.05	-
Acenaphthylene	0.05 ug/L	0.22	<0.05	<0.05	-
Anthracene	0.01 ug/L	0.14	<0.01	0.13	-
Benzo [a] anthracene	0.01 ug/L	0.21	<0.01	0.53	-
Benzo [a] pyrene	0.01 ug/L	0.24	<0.01	0.56	-
Benzo [b] fluoranthene	0.05 ug/L	0.08	<0.05	0.79	-
Benzo [g,h,i] perylene	0.05 ug/L	0.17	<0.05	0.44	-
Benzo [k] fluoranthene	0.05 ug/L	0.08	<0.05	0.35	-
Chrysene	0.05 ug/L	0.21	<0.05	0.64	-
Dibenzo [a,h] anthracene	0.05 ug/L	0.05	<0.05	0.12	-
Fluoranthene	0.01 ug/L	0.51	<0.01	1.40	-
Fluorene	0.05 ug/L	<0.05	<0.05	<0.05	-
Indeno [1,2,3-cd] pyrene	0.05 ug/L	0.16	<0.05	0.40	-
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	0.23	<0.05	<0.05	-
Phenanthrene	0.05 ug/L	0.11	<0.05	0.57	-
Pyrene	0.01 ug/L	0.50	<0.01	1.16	-
2-Fluorobiphenyl	Surrogate	100%	85.4%	105%	-
Terphenyl-d14	Surrogate	130%	80.2%	137%	-

Certificate of Analysis  
 Client: CM3 Environmental Inc.  
 Client PO: Elmdale P.S.

Report Date: 27-Dec-2017  
 Order Date: 19-Dec-2017  
 Project Description: MM1027

	<b>Client ID:</b> MW16	<b>Sample Date:</b> 18-Dec-17	<b>MW14</b>	<b>MW1</b>	<b>MW21</b>
	<b>Sample ID:</b> 1751143-13		<b>18-Dec-17</b>	<b>18-Dec-17</b>	<b>18-Dec-17</b>
	<b>MDL/Units</b>	Water	Water	Water	Water

**Volatiles**

Benzene	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
Toluene	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
Toluene-d8	Surrogate	84.5%	83.8%	85.5%	81.6%

**Hydrocarbons**

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	651	<100	426	<100
F4 PHCs (C34-C50)	100 ug/L	113	<100	<100	<100

	<b>Client ID:</b> MW5	<b>Sample Date:</b> 18-Dec-17	<b>MW22</b>	<b>MW20</b>	-
	<b>Sample ID:</b> 1751143-17		<b>18-Dec-17</b>	<b>18-Dec-17</b>	-
	<b>MDL/Units</b>	Water	Water	Water	-

**Volatiles**

Benzene	0.5 ug/L	<0.5	<0.5	<0.5	-
Ethylbenzene	0.5 ug/L	<0.5	<0.5	<0.5	-
Toluene	0.5 ug/L	<0.5	<0.5	<0.5	-
m,p-Xylenes	0.5 ug/L	<0.5	<0.5	<0.5	-
o-Xylene	0.5 ug/L	<0.5	<0.5	<0.5	-
Xylenes, total	0.5 ug/L	<0.5	<0.5	<0.5	-
Toluene-d8	Surrogate	85.1%	84.3%	82.8%	-

**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	220	<100	1220	-
F4 PHCs (C34-C50)	100 ug/L	<100	<100	299	-

Certificate of Analysis  
 Client: CM3 Environmental Inc.  
 Client PO: Elmdale P.S.

Report Date: 27-Dec-2017  
 Order Date: 19-Dec-2017  
 Project Description: MM1027

### Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD RPD	RPD Limit	Notes
<b>Hydrocarbons</b>									
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						
<b>Semi-Volatiles</b>									
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	17.2		ug/L		86.2		50-140		
Surrogate: Terphenyl-d14	23.3		ug/L		117		50-140		
<b>Volatiles</b>									
Benzene	ND	0.5	ug/L						
Ethylbenzene	ND	0.5	ug/L						
Toluene	ND	0.5	ug/L						
m,p-Xylenes	ND	0.5	ug/L						
o-Xylene	ND	0.5	ug/L						
Xylenes, total	ND	0.5	ug/L						
Surrogate: Toluene-d8	67.8		ug/L		84.8		50-140		

Certificate of Analysis  
 Client: CM3 Environmental Inc.  
 Client PO: Elmdale P.S.

Report Date: 27-Dec-2017  
 Order Date: 19-Dec-2017  
 Project Description: MM1027

### **Method Quality Control: Duplicate**

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
<b>Hydrocarbons</b>									
F1 PHCs (C6-C10)	ND	25	ug/L	ND				30	
<b>Volatiles</b>									
Benzene	ND	0.5	ug/L	ND				30	
Ethylbenzene	ND	0.5	ug/L	ND				30	
Toluene	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: Toluene-d8	67.2		ug/L		84.0	50-140			

Certificate of Analysis  
 Client: CM3 Environmental Inc.  
 Client PO: Elmdale P.S.

Report Date: 27-Dec-2017  
 Order Date: 19-Dec-2017  
 Project Description: MM1027

### Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
<b>Hydrocarbons</b>									
F1 PHCs (C6-C10)	2030	25	ug/L		102	68-117			
F2 PHCs (C10-C16)	1710	100	ug/L		95.3	60-140			
F3 PHCs (C16-C34)	3670	100	ug/L		98.6	60-140			
F4 PHCs (C34-C50)	2620	100	ug/L		106	60-140			
<b>Semi-Volatiles</b>									
Acenaphthene	5.26	0.05	ug/L		105	50-140			
Acenaphthylene	4.38	0.05	ug/L		87.7	50-140			
Anthracene	4.95	0.01	ug/L		98.9	50-140			
Benzo [a] anthracene	3.50	0.01	ug/L		70.0	50-140			
Benzo [a] pyrene	3.05	0.01	ug/L		61.0	50-140			
Benzo [b] fluoranthene	5.54	0.05	ug/L		111	50-140			
Benzo [g,h,i] perylene	4.14	0.05	ug/L		82.9	50-140			
Benzo [k] fluoranthene	5.33	0.05	ug/L		107	50-140			
Chrysene	4.55	0.05	ug/L		91.0	50-140			
Dibenzo [a,h] anthracene	4.71	0.05	ug/L		94.1	50-140			
Fluoranthene	4.68	0.01	ug/L		93.7	50-140			
Fluorene	4.87	0.05	ug/L		97.4	50-140			
Indeno [1,2,3-cd] pyrene	4.62	0.05	ug/L		92.4	50-140			
1-Methylnaphthalene	4.40	0.05	ug/L		88.1	50-140			
2-Methylnaphthalene	4.86	0.05	ug/L		97.3	50-140			
Naphthalene	4.99	0.05	ug/L		99.8	50-140			
Phenanthrene	4.54	0.05	ug/L		90.8	50-140			
Pyrene	4.72	0.01	ug/L		94.3	50-140			
Surrogate: 2-Fluorobiphenyl	20.9		ug/L		104	50-140			
<b>Volatiles</b>									
Benzene	34.8	0.5	ug/L		86.9	60-130			
Ethylbenzene	40.8	0.5	ug/L		102	60-130			
Toluene	40.3	0.5	ug/L		101	60-130			
m,p-Xylenes	80.6	0.5	ug/L		101	60-130			
o-Xylene	40.6	0.5	ug/L		101	60-130			

Certificate of Analysis  
**Client: CM3 Environmental Inc.**  
**Client PO: Elmdale P.S.**

Report Date: 27-Dec-2017  
Order Date: 19-Dec-2017  
**Project Description: MM1027**

**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.



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N<sup>o</sup> 39690

Page 1 of 2

Client Name: CM3	Project Reference: Elmdale P.S.	Turnaround Time:
Contact Name: Marc	Quote # OCDSB rates	<input type="checkbox"/> 1 Day <input type="checkbox"/> 3 Day
Address: 5710 Atkins Rd.	PO # Mm1027	<input type="checkbox"/> 2 Day <input checked="" type="checkbox"/> Regular
Telephone: 613 618 3554	Email Address: Marc @cm3environmental.com	Date Required: _____

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							
---	-------------------	--	--	--	--	--	--	--

Paracel Order Number:	Matrix	Air Volume	# of Containers	Sample Taken		DTEC	PAH	PCDF- PCDD-F	PCDF- PCDD-F
				Date	Time				
1 MW13	GW		4	Dec 18		X	X		
2 mw10						X	X		
3 mw27						X	X		
4 mw11						X	X		
5 mw6						X	X		
6 mw15						X	X		
7 mw7						X	X		
8 mw3						X	X		
9 mw2						X	X		
10 mw8						X	X		

Comments:

Method of Delivery: Walkin

Relinquished By (Sign):	Received by Driver/Depot:	Received at Lab:	Verified By:
Relinquished By (Print):	Date/Time:	Date/Time: Dec 19/17	Date/Time: Dec 19/17
Date/Time:	Temperature: _____ °C	Temperature: 17.5 °C	pH Verified [x] By: N/A 12:34



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No 39700

Page 2 of 2

Client Name: CM3	Project Reference: Elmdale P.S.	Turnaround Time:
Contact Name: Marc	Quote #: OCDSB rates	<input type="checkbox"/> 1 Day <input type="checkbox"/> 3 Day
Address: 576 Atkins Rd.	PO #: mm1027	<input type="checkbox"/> 2 Day <input checked="" type="checkbox"/> Regular
Telephone: 613 618 3554	Email Address: Marc@cnrenvironmental.com	Date Required:

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:  1751143	Matrix	Air Volume	# of Containers	Sample Taken		OTEX ONCE-FY PAH						
				Date	Time							
1 MW19	GW		4	Dec 18		X						
2 MW 9			3			X						
3 MW 16			3			X						
4 MW 14			3			X						
5 MW 1			3			X						
6 MW 21			3			X						
7 MW 5			3			X						
8 MW 22			3			X						
9 MW 20			3			X						
10												

Comments:	Method of Delivery:  Walkin
-----------	-----------------------------------

Relinquished By (Sign):	Received by Driver/Depot:	Received at Lab:  SCL	Verified By:  Rachel Subject
Relinquished By (Print):	Date/Time:	Date/Time:  Dec 19/17	Date/Time:  Dec 19/17
Date/Time:	Temperature: °C	Temperature: 17.5 °C 11.27a	pH Verified <input checked="" type="checkbox"/> By: N/A 12:34

## Certificate of Analysis

### CM3 Environmental Inc.

5710 Akins Road  
Ottawa, ON K2S 1B8  
Attn: Marc MacDonald

Client PO: Elmdale  
Project: MM1027  
Custody: 117462/117461/117460

Report Date: 16-Jul-2018  
Order Date: 10-Jul-2018

**Order #: 1828231**

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

Paracel ID	Client ID
1828231-01	MW1
1828231-02	MW2
1828231-03	MW3
1828231-04	MW5
1828231-05	MW6
1828231-06	MW7
1828231-07	MW8
1828231-08	MW9
1828231-09	MW10
1828231-10	MW11
1828231-11	MW13
1828231-12	MW14
1828231-13	MW15
1828231-14	MW16
1828231-15	MW17
1828231-16	MW18
1828231-17	MW19
1828231-18	MW20
1828231-19	MW21
1828231-20	MW22
1828231-21	MW23
1828231-22	MW24
1828231-23	MW25
1828231-24	MW26
1828231-25	MW27

Approved By:



Mark Foto, M.Sc.  
Lab Supervisor

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 any circumstances be liable to you in connection with this work.

Certificate of Analysis  
**Client: CM3 Environmental Inc.**  
**Client PO: Elmdale**

Report Date: 16-Jul-2018  
 Order Date: 10-Jul-2018  
**Project Description: MM1027**

## Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
BTEX by P&T GC-MS	EPA 624 - P&T GC-MS	13-Jul-18	14-Jul-18
PHC F1	CWS Tier 1 - P&T GC-FID	12-Jul-18	14-Jul-18
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	13-Jul-18	15-Jul-18

Certificate of Analysis  
**Client: CM3 Environmental Inc.**  
**Client PO: Elmdale**

Report Date: 16-Jul-2018

Order Date: 10-Jul-2018

**Project Description: MM1027**

Client ID:	MW1	MW2	MW3	MW5
Sample Date:	07/10/2018 09:00	07/10/2018 09:00	07/10/2018 09:00	07/10/2018 09:00
Sample ID:	1828231-01	1828231-02	1828231-03	1828231-04
MDL/Units	Water	Water	Water	Water

**Volatiles**

Benzene	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
Toluene	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
Toluene-d8	Surrogate	97.8%	98.1%	98.0%	98.7%

**Hydrocarbons**

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

Client ID:	MW6	Sample Date:	07/10/2018 09:00	MW7	07/10/2018 09:00	MW8	07/10/2018 09:00	MW9	07/10/2018 09:00		
Sample ID:	1828231-05	MDL/Units	Water	Sample ID:	1828231-06	MDL/Units	Water	Sample ID:	1828231-07	MDL/Units	Water

**Volatiles**

Benzene	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
Toluene	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
Toluene-d8	Surrogate	98.1%	98.8%	98.3%	97.1%

**Hydrocarbons**

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

Certificate of Analysis  
**Client: CM3 Environmental Inc.**  
**Client PO: Elmdale**

Report Date: 16-Jul-2018

Order Date: 10-Jul-2018

Project Description: MM1027

<b>Client ID:</b>	MW10	MW11	MW13	MW14
<b>Sample Date:</b>	07/10/2018 09:00	07/10/2018 09:00	07/10/2018 09:00	07/10/2018 09:00
<b>Sample ID:</b>	1828231-09	1828231-10	1828231-11	1828231-12
<b>MDL/Units</b>	Water	Water	Water	Water

**Volatiles**

Benzene	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
Toluene	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
Toluene-d8	Surrogate	98.2%	98.2%	98.4%	98.0%

**Hydrocarbons**

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	1050	<100
F4 PHCs (C34-C50)	100 ug/L	<100	<100	152	<100

<b>Client ID:</b>	MW15	MW16	MW17	MW18
<b>Sample Date:</b>	07/10/2018 09:00	07/10/2018 09:00	07/10/2018 09:00	07/10/2018 09:00
<b>Sample ID:</b>	1828231-13	1828231-14	1828231-15	1828231-16
<b>MDL/Units</b>	Water	Water	Water	Water

**Volatiles**

Benzene	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
Toluene	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
Toluene-d8	Surrogate	98.3%	98.6%	98.0%	98.2%

**Hydrocarbons**

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	275	<100
F4 PHCs (C34-C50)	100 ug/L	<100	<100	<100	<100

Certificate of Analysis  
**Client: CM3 Environmental Inc.**  
**Client PO: Elmdale**

Report Date: 16-Jul-2018

Order Date: 10-Jul-2018

**Project Description: MM1027**

Client ID:	MW19	Sample Date:	MW20	MW21	MW22
Sample ID:	07/10/2018 09:00	Sample ID:	07/10/2018 09:00	07/10/2018 09:00	07/10/2018 09:00
MDL/Units	1828231-17	MDL/Units	1828231-18	1828231-19	1828231-20

**Volatiles**

Benzene	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
Toluene	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
Toluene-d8	Surrogate	97.7%	98.0%	99.3%	98.2%

**Hydrocarbons**

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

Client ID:	MW23	Sample Date:	MW24	MW25	MW26
Sample Date:	07/10/2018 09:00	Sample ID:	07/10/2018 09:00	07/10/2018 09:00	07/10/2018 09:00
Sample ID:	1828231-21	MDL/Units	1828231-22	1828231-23	1828231-24

**Volatiles**

Benzene	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
Toluene	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
Toluene-d8	Surrogate	98.2%	98.2%	98.3%	98.1%

**Hydrocarbons**

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	1110	<100
F4 PHCs (C34-C50)	100 ug/L	<100	<100	275	<100

Certificate of Analysis  
**Client:** CM3 Environmental Inc.  
**Client PO:** Elmdale

Report Date: 16-Jul-2018

Order Date: 10-Jul-2018

**Project Description:** MM1027

<b>Client ID:</b>	MW27	-	-	-
<b>Sample Date:</b>	07/10/2018 09:00	-	-	-
<b>Sample ID:</b>	1828231-25	-	-	-
<b>MDL/Units</b>	Water	-	-	-

**Volatiles**

Benzene	0.5 ug/L	<0.5	-	-	-
Ethylbenzene	0.5 ug/L	<0.5	-	-	-
Toluene	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	-	-	-
Toluene-d8	Surrogate	98.4%	-	-	-

**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	-	-	-
F4 PHCs (C34-C50)	100 ug/L	<100	-	-	-

Certificate of Analysis  
 Client: CM3 Environmental Inc.  
 Client PO: Elmdale

Report Date: 16-Jul-2018  
 Order Date: 10-Jul-2018  
 Project Description: MM1027

### Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
<b>Hydrocarbons</b>									
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						
<b>Volatiles</b>									
Benzene	ND	0.5	ug/L						
Ethylbenzene	ND	0.5	ug/L						
Toluene	ND	0.5	ug/L						
m,p-Xylenes	ND	0.5	ug/L						
o-Xylene	ND	0.5	ug/L						
Xylenes, total	ND	0.5	ug/L						
Surrogate: Toluene-d8	76.4		ug/L		95.4		50-140		

Certificate of Analysis  
 Client: CM3 Environmental Inc.  
 Client PO: Elmdale

Report Date: 16-Jul-2018  
 Order Date: 10-Jul-2018  
 Project Description: MM1027

### **Method Quality Control: Duplicate**

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
<b>Hydrocarbons</b>									
F1 PHCs (C6-C10)	ND	25	ug/L	ND				30	
<b>Volatiles</b>									
Benzene	ND	0.5	ug/L	ND				30	
Ethylbenzene	ND	0.5	ug/L	ND				30	
Toluene	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: Toluene-d8	78.2		ug/L		97.8	50-140			

Certificate of Analysis  
 Client: CM3 Environmental Inc.  
 Client PO: Elmdale

Report Date: 16-Jul-2018  
 Order Date: 10-Jul-2018  
 Project Description: MM1027

### Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
<b>Hydrocarbons</b>									
F1 PHCs (C6-C10)	1960	25	ug/L		98.0	68-117			
F2 PHCs (C10-C16)	1340	100	ug/L		84.0	60-140			
F3 PHCs (C16-C34)	3780	100	ug/L		96.4	60-140			
F4 PHCs (C34-C50)	2850	100	ug/L		115	60-140			
<b>Volatiles</b>									
Benzene	37.9	0.5	ug/L		94.8	60-130			
Ethylbenzene	40.5	0.5	ug/L		101	60-130			
Toluene	38.2	0.5	ug/L		95.5	60-130			
m,p-Xylenes	81.2	0.5	ug/L		101	60-130			
o-Xylene	39.7	0.5	ug/L		99.3	60-130			
<i>Surrogate: Toluene-d8</i>	<i>70.4</i>		<i>ug/L</i>		<i>88.1</i>	<i>50-140</i>			

Certificate of Analysis  
**Client: CM3 Environmental Inc.**  
**Client PO: Elmdale**

Report Date: 16-Jul-2018  
Order Date: 10-Jul-2018  
**Project Description: MM1027**

**Qualifier Notes:**

***Login Qualifiers :***

Received at temperature > 25C

*Applies to samples: MW1, MW2, MW3, MW5, MW6, MW7, MW8, MW9, MW10, MW11, MW13, MW14, MW15, MW16, MW17, MW18, MW19, MW20, MW21, MW22, MW23, MW24, MW25, MW26, MW27*

**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 ID: 1828231



LABORATORIES LTD.

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 117462

Page 1 of 3

**Turnaround Time:**

- 1 Day       3 Day  
 2 Day       Regular  
 Date Required: \_\_\_\_\_

Client Name: CM3	Project Reference: Elmdate
Contact Name: Morc	Quote #: OCDSB 15-U61
Address: 57 Ho Atkins Rd.	PO #: MM1627
Telephone: 613 804 1654	Email Address: Morc@cm3environmental.com
Criteria: <input checked="" type="checkbox"/> O. Reg. 153/04 (As Amended) Table 2 <input type="checkbox"/> RSC Filing <input type="checkbox"/> O. Reg. 558/00 <input type="checkbox"/> PWQO <input type="checkbox"/> CCME <input type="checkbox"/> SUB (Storm) <input type="checkbox"/> SUB (Sanitary) Municipality: <input type="checkbox"/> 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:				Sample Taken											
Sample ID/Location Name				Matrix	Air Volume	# of Containers	Date	Time	PHCs F1-F4+BTX	VOGs	PAHs	Metals by ICP	Hg	Cr VI	B (HWS)
1	Mw1	GW	3	July 10/18			X								
2	Mw2														
3	Mw3														
4	Mw5														
5	Mw6														
6	Mw7														
7	Mw8														
8	Mw9														
9	Mw10														
10	Mw11			↓	↓	↓	↓	↓							

Comments:

Method of Delivery:

Relinquished By (Sign):	Received by Driver/Depot:	Received at Lab:	Verified By:
Relinquished By (Print): Spencer Cochrane	Date/Time:	Date/Time: July 10/18	Date/Time: 10/18 4:18
Date/Time: July 10 2018	Temperature: °C	Temperature: 25.4°C 2.36p	Verified By: NA



Paracel ID: 1828231



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Chain of Custody

(Lab Use Only)

No 117461

Page 2 of 3

Client Name: CM3	Project Reference: Elm Vale	Turnaround Time:
Contact Name: Marc	Quote # OCDSB 15-461	<input type="checkbox"/> 1 Day <input type="checkbox"/> 3 Day
Address: 5710 Atkins Rd.	PO # MM 1027	<input type="checkbox"/> 2 Day <input checked="" type="checkbox"/> Regular
Telephone: 613 804 1654	Email Address: Marc.DCM3@envirocanada.com	Date Required: _____

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															
Paracel Order Number:	Matrix	Air Volume	# of Containers	Sample Taken															
				Date	Time	PFBCS F1-F4+IBTEX		VOCs	PAHs	Metals by ICP		Hg	CxVI	B (HWS)					
1 Mw13	GW		3	July 10/18		X													
2 Mw14																			
3 Mw15																			
4 Mw16																			
5 Mw17																			
6 Mw18																			
7 Mw19																			
8 Mw20																			
9 Mw21																			
10 Mw22																			

Comments:

Relinquished By (Sign): <i>Spencer Cochone</i>	Received by Driver/Depot:	Received at Lab: <i>SCD</i>	Verified By: <i>Walt</i>
Relinquished By (Print): Spencer Cochone	Date/Time:	Date/Time: <i>July 10/18</i>	Date/Time: <i>10/11/18 4:18</i>
Date/Time: <i>July 10 2018</i>	Temperature: °C	Temperature: <i>25.9 °C</i>	Verified By: <i>NA</i>



Paracel ID: 1828231



Head Office  
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Ottawa, Ontario K1G 4J8  
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e: paracel@paracellabs.com

Chain of Custody

(Lab Use Only)

No 117460

Page 3 of 3

Turnaround Time:

- 1 Day       3 Day  
 2 Day       Regular  
 Date Required:

Client Name:	CM3	Project Reference:	Elm Dale
Contact Name:	Marc	Quote #	OCDSB 15-461
Address:	5710 Akins Dr.	PO #	MMB27
Telephone:	613 804 1654	Email Address:	Marc@CM3environmental.com
Criteria: <input checked="" type="checkbox"/> O. Reg. 153/04 (As Amended) Table 2 <input type="checkbox"/> RSC Filing <input type="checkbox"/> O. Reg. 558/00 <input type="checkbox"/> PWQO <input type="checkbox"/> CCME <input type="checkbox"/> SUB (Storm) <input type="checkbox"/> SUB (Sanitary) Municipality:		<input type="checkbox"/> Other:	

				Required Analyses									
				Sample Taken									
				Date	Time	PHCs F1-F4+BTEN	VOCs	PAHs	Metals by ICP	Hg	CrVI	B (HWS)	
Paracel Order Number:													
1	MW23	GW	3	July 10/18		X							
2	MW24		/			/							
3	MW25		/										
4	MW26		/										
5	MW27		↓			↓							
6													
7													
8													
9													
10													

Comments:

Method of Delivery:

Walking

Relinquished By (Sign): <i>Spencer Cachane</i>	Received by Driver/Depot: <i>SC</i>	Received at: <i>Office</i>	Verified By: <i>lukas</i>
Relinquished By (Print): Spencer Cachane	Date/Time: July 10 2018	Date/Time: July 10 2018	Date/Time: 10/7/18 4:18

Chain of Custody (Env) - Rev 0.7 Feb. 2016