



## Phase Two Environmental Site Assessment

770 Somerset Street West and  
13 Lebreton Street North

Ottawa, Ontario

Revision No. 1

Prepared For: DCR Phoenix Group

COMMUNITIES  
TRANSPORTATION  
BUILDINGS  
INFRASTRUCTURE



May 2015

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May 11, 2015  
14-12815-001-PH2

Mr. Michael Boucher  
Manager of Planning  
DCR Phoenix Group  
18 Bentley Avenue,  
Ottawa, Ontario K2E 6T8

Dear Mr. Boucher,

**Subject: Phase Two Environmental Site Assessment  
770 Somerset Street West and 13 Lebreton Street North,  
Ottawa, Ontario.**

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We are pleased to submit this report for the Phase Two Environmental Site Assessment (ESA) of a 0.16 ha property covering 770 Somerset Street West and 13 Lebreton Street North in Ottawa, Ontario.

The report incorporates the findings of the Phase One ESA and the results of soil and groundwater investigations at the property that were conducted from 2012 to 2014, including a final groundwater sampling event in December 2014. Soil and groundwater impacts have been identified as presented in the report and remediation and/or a risk assessment will be required prior to filing a Record of Site Condition.

If you have any questions or comments, please contact the undersigned.

Yours truly,

**MMM GROUP LIMITED**



Carolyn Adams, P.Eng.  
Manager  
Environmental Management

<https://ecollaboration.mmm.ca/livelinkdav/nodes/5791410/SomersetP2ESAcvrltrFinal.docx>



## EXECUTIVE SUMMARY

A Phase Two Environmental Site Assessment (ESA) was conducted for a parking lot and residential building located at 770 Somerset Street West and 13 Lebreton Street North in Ottawa, Ontario (the “Subject Property”). It is planned that the Subject Property will be developed for mixed land uses including commercial and residential uses. This Phase Two ESA was requested by the client to assist in site development plan approvals and to support filing a Record of Site Condition (RSC).

The Subject Property is at the southeast corner of Somerset Street West and Lebreton Street North. The Subject Property is comprised of a single parcel of land of approximately 0.16 hectares for which the legal description is: Part of Lots 26 and 31, Plan 4908, as in NS185691; Ottawa/Nepean. Two property information numbers (PINs) apply to the Subject Property: 04109-0235 and 04109-0245.

The north part of the Subject Property has been used as a gasoline and auto service station for over 80 years and this past use has included potentially contaminating activities (PCAs) that have resulted in areas of potential environmental concern (APECs) on the site. The Phase Two ESA was developed and implemented to assess the identified areas of concern through sampling of soil and groundwater for the contaminants of potential concern.

Based on available environmental reports, remediation was conducted at the time of the decommissioning of the gas station. However, when soil quality was compared to standards revised by the Ontario Ministry of the Environment (MOE) in 2011, contaminants are present in the fill material. The contaminants of concern identified in soil through the sampling and analysis program include EC, SAR, lead, mercury, zinc and petroleum hydrocarbon compounds (PHCs) in the F3 and F4 ranges. Although the concentrations of these contaminants exceed the MOE generic standards, they are present at relatively low concentrations. None of these contaminants was measured in groundwater at concentrations that exceed the MOE standard. It is concluded that contaminants in soil do not present a potential for migration from the Subject Property. It is recommended that impacts in the soil be removed as part of the construction for the redevelopment of the Subject Property.

The groundwater across the Subject Property has been impacted by the historical and on-going use of salt for ice control, both onsite and offsite along Somerset Street West and LeBreton Street North. Per section 48(3) of O. Reg. 153/04, the concentrations of sodium and chloride are deemed not to exceed the Table 3 Standard, as the offsite application of road salt has contributed significantly to elevated levels of sodium and chloride on the Subject Property.

Exceedances of silver were present in seven monitoring wells. These exceedances cannot be attributed to any known land uses in the study area. We recommend a risk assessment to consider whether the concentrations of silver present a hazard for the future users of the developed site.

The removal of contaminated soil and a risk assessment to assess the groundwater contamination will be required prior to filing a RSC. These activities can be conducted during the site planning stages and should not delay planning approvals.

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## 1.0 INTRODUCTION

### 1.1 Background

MMM Group Limited (MMM) was retained by DCR Phoenix Group (DCR) to conduct a Phase Two Environmental Site Assessment (ESA) for a parking lot located at 770 Somerset Street West and a residential building at 13 Lebreton Street North, in Ottawa, Ontario (the “Subject Property”). For the purpose of this report, the Subject Property is the Phase Two Property as defined under Ontario Regulation 153/04, as amended. The Subject Property location is shown in Figure 1.

We understand that DCR Phoenix Group is planning to develop the Subject Property for mixed land uses including commercial and residential uses. This Phase Two ESA was requested by the client to assist in site development plan approvals and to support filing a Record of Site Condition (RSC).

### 1.2 Site Description

The Subject Property is at the southeast corner of Somerset Street West and Lebreton Street North with approximately 75 m of frontage on these two streets. Bell Street North is approximately 50 m to the east and Eccles Street is approximately 65 m to the south. The boundary of the Subject Property is shown on Figure 2.

The Subject Property is comprised of a single parcel of land of approximately 0.16 hectares for which the legal description is: Part of Lots 26 and 31, Plan 4908, as in NS185691; Ottawa/Nepean. The property information numbers (PINs) for the Subject Property are 04109-0235 and 04109-0245. A legal survey is included in Appendix A.

The Subject Property has two municipal addresses: 770 Somerset Street West for the north part and 13 Lebreton Street North for the south part. The NAD 83, Zone 18 UTM coordinates for the Subject Property are 444525 E and 5025740 N.


### 1.3 Property Ownership

The Subject Property is owned by the numbered company: 442915 Ontario Ltd.. Ken Yip of this company is working in partnership for the development of the lands with DCR. Authorization to proceed with the work was granted by Mr. Michael Boucher of DCR on October 17, 2012 in the form of a sign back proposal agreement. This report was updated to incorporate 13 Lebreton Street North, based on a signback agreement from Mr. Boucher dated September 18, 2013. This report replaces any previously submitted Phase Two ESA reports.

Mr. Boucher is located at the Ottawa offices of DCR at 18 Bentley Avenue and can be contacted by email at [mboucher@phoenixhomes.ca](mailto:mboucher@phoenixhomes.ca).

### 1.4 Current and Proposed Future Uses

The Subject Property was first developed in the late 1800s (south part) and early 1900s (north part) and included two residential buildings that appear to have housed multiple tenants. The



north part of the Subject Property has been used as a gas station and garage since the early 1930s. The residential use of the south part of the Subject Property has not changed since first development. Underground storage tanks (USTs) were initially located at the northwest corner of the Subject Property and were moved to the northeast corner sometime after 1956. The USTs and associated gas station buildings were decommissioned and removed from the Subject Property in 2000.

The north part of the Subject Property has been used as a parking lot since the gas station was decommissioned.

The proposed future use of the Subject Property will be for a residential condominium with possible commercial uses at grade. The change in land use from a gas station to residential use results in the mandatory filing of a RSC under Ontario Regulation 153/04 prior to the issuance of a building permit.

## **1.5 Applicable Site Condition Standard**

Generic site condition standards established by the Ministry of the Environment (MOE) in their document: *Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act* (April 2011) (the “Standard”) were used to assess soil and groundwater quality at the Subject Property. The Subject Property is not a sensitive site as defined in Ontario Regulation 153/04 and the proposed development will be serviced for water and sewage through the City of Ottawa, which obtains drinking water for this area of the City from the Ottawa River. Standards established for non-potable groundwater conditions for residential, parkland and institutional (RPI) land uses, with coarse-textured soil were considered to apply to the site.

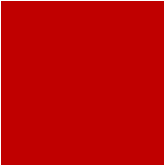
The municipality was advised of the use of non-potable groundwater conditions for the Subject Property by letter dated April 23, 2014, with an acceptance received April 25, 2014 by e-mail (see Appendix A-1). Notification will need to be repeated within six months of filing a RSC.

## **2.0 BACKGROUND INFORMATION**

### **2.1 Physical Setting**

A review of topographic mapping for the Subject Property in the Phase One ESA, indicated that the area is in an urban setting and the ground surface elevation is approximately 85 m above mean sea level (amsl). There is a grade difference of approximately 2.5 m between the east and west limits of the north part of the Subject Property, with the west limit being at a lower elevation. There is a retaining wall along the southern boundary of 770 Somerset Street West which is supporting the higher elevation of the north part of the Subject Property as compared to 13 Lebreton Street North (Photograph 1).

The area is gently sloped down to the northwest towards the Ottawa River, approximately 1.1 km northwest and Dow's Lake is approximately 1.4 km south. The Rideau Canal links Dow's Lake to the Ottawa River in a meandering path to the south and east of the Subject Property at distances exceeding 2 km.



Regional groundwater is generally expected to flow north towards the Ottawa River. It should be noted that local groundwater flow may be influenced by underground utilities (i.e., service trenches), structures and bedrock topography. For example, the gravel pack used around utilities, such as storm sewers, can act as interceptors and redirect groundwater flow along the direction of the pipe.

The area is fully serviced for water and sewage, with potable water obtained municipally from the Ottawa River. No surface water is located on the Subject Property.

The Subject Property is within the Ottawa Valley Clay Plains physiographic region of Southern Ontario. This region primarily consists of clay plains interrupted with ridges of rock or sand (Chapman, L.J. and Putman, D.F. 2007). The native surficial geology is indicated to be sandy silt to silty sand overlying paleozoic bedrock, which is not far below ground surface at the Subject Property (Ontario Geological Survey, 2010). Given the urban setting of the area, much of the near surface overburden is interpreted to have been modified as part of urbanization. While the overall permeability (hydraulic conductivity) of the native overburden deposits are interpreted to be low to moderate, higher permeability overburden sediments are interpreted to be present at the Subject Property where granular backfill has been placed, particularly in former UST locations and in utility corridors and this may have an influence on groundwater flow. Bedrock in the area including the Subject Property consists of nodular to black laminated limestone of the Collingwood formation (Armstrong, D.K. and Dodge, J.E.P. 2007). The thickness of overburden deposits in the area is generally indicated to range from 0 to 10 m.

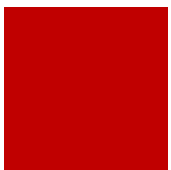
## 2.2 Past Investigations

The following environmental reports were available for the north part of the Subject Property and were reviewed as part of the Phase One ESA:

- ◆ *Phase I and Phase II Environmental Site Assessment, 770 Somerset Street West, Ottawa, Ontario.* Jacques Whitford Environment Limited. June 13, 2000.
- ◆ *Petroleum Hydrocarbon Impacted Soil Removal, 770 Somerset Street West, Ottawa, Ontario.* Jacques Whitford Environment Limited. April 9, 2001

A summary of the reports is provided below:

- ◆ The north part of the Subject Property has historically been used as an automotive repair shop and gasoline retail outlet. Seven underground storage tanks (USTs) were identified through historical records including a 1956 FIP along with a hydraulic hoist and an oil/water separator. Five of the USTs were removed from the Subject Property in 1997 under the supervision of Jacques Whitford Environmental Limited and the 2000 ESA report indicates that 203 tonnes of petroleum hydrocarbon impacted soil was excavated from the pump island area and was disposed of under the supervision of the previous owner (Triangle Pump Service).
- ◆ The Phase II ESA consisted of nine boreholes (three equipped with monitoring wells) and was completed in 2000 to investigate potentially contaminating activities (PCAs) identified in the Phase I ESA. Soil and groundwater samples were submitted for analysis of benzene, toluene, ethylbenzene and xylene (BTEX) and total petroleum hydrocarbon (TPH) analysis.
- ◆ The results of analysis of selected soil and groundwater samples were compared to the MOE Table B criteria for a commercial/industrial land use from the *Guideline for Use at*



*Contaminated Sites in Ontario*, revised 1997. The report indicated that the concentration of all analysed parameters were either below detection limits, or present at concentrations that satisfy the Table B criteria with the exception of the xylenes concentration in the soil sample submitted from MW00-3. Elevated levels of TPH (gas/diesel) were measured in the groundwater sample from MW00-3; however, at the time this Phase II ESA was completed there were no standards established in the MOE Guideline for comparison.

- ◆ It was recommended that soil containing concentrations of xylenes greater than the applicable site condition standard be removed from the Subject Property. In addition, it was recommended that heavily stained surface gravel located throughout the parking lot be removed.
- ◆ In April 2001, an area of approximately 25 m<sup>2</sup> was excavated to a depth of approximately 4 m below ground surface (bgs) to remove petroleum impacted soil in the vicinity of MW00-3. Approximately 84 tonnes of petroleum impacted soil (i.e., less than half the excavated soil) was removed from the Subject Property and disposed of at a local licensed landfill facility. Verification samples collected from the walls of the excavation had concentrations of contaminants that were less than the applicable site condition standards. The remaining excavated soil was deemed to be clean, based on field screening measurements and was used as backfill material.

In addition, as part of the development planning and design, a geotechnical engineering report (*Phoenix Homes Geotechnical Investigation Final*, prepared by exp Services Inc. and dated January 29, 2013) was prepared for the Subject Property. The geotechnical investigation was conducted to establish a geotechnical and groundwater profile of the Subject Property. The information from the report was used to assess physical groundwater conditions used by MMM in the interpretation of the environmental condition of the Subject Property.

## 2.3 Potential Contaminants of Concern

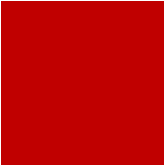
Past soil sampling identified impacts from petroleum hydrocarbon compounds (PHCs) in soil. Based on the known history of the Subject Property, additional potential contaminants of concern related to the PCAs include metals, inorganics (chloride), volatile organic compounds (VOCs), polychlorinated biphenyls (PCBs) and polycyclic aromatic hydrocarbons (PAHs). The Phase Two ESA was designed to assess the validity of past soil and groundwater data as well as to confirm the presence of the additional contaminants of potential concern.

## 3.0 SCOPE OF THE INVESTIGATION

### 3.1 Overview of Site Investigation

The scope of work for the 2012 Phase Two ESA was based on a proposal submitted by MMM dated to DCR on September 26, 2012. Additional site data was obtained for 13 Lebreton Street North in a supplemental work program that was described in a proposal dated September 18, 2013 and investigation of the deeper bedrock was based on a proposal dated September 12, 2014. Previous investigations provided an initial information base for the Phase Two ESA property; however, current data were required to meet the requirements of Ontario Regulation 153/04. The tasks completed for the Phase Two ESA included:



- 
- ◆ Preparation of sampling and analysis plans for the investigations.
  - ◆ Drilling and sampling of eight investigation boreholes under the supervision of Strata Soil Sampling, a qualified environmental driller, each completed as a monitoring well. Soil sampling was conducted on November 8 and 9, 2012 and groundwater monitoring and sampling was conducted November 15 and 16, 2012.
  - ◆ Additional drilling was conducted from October 23 through 25, 2013 with additional groundwater sampling conducted on October 28 and 29, 2013 and November 6, 2013.
  - ◆ Groundwater sampling was conducted at all wells on August 7 and 8, 2014.
  - ◆ Additional drilling was required based on these sampling results. Drilling and sampling of one additional well was carried out on October 8 and 9, 2014, and December 3, 2014.
  - ◆ Submitting soil and groundwater samples for the analysis of contaminants of potential concern, including quality control duplicates and trip blanks.
  - ◆ Comparing results of analysis to generic soil and groundwater standards.

### **3.2 Media Investigated**

Both soil and groundwater quality at the Subject Property was investigated as part of this Phase Two ESA. No sediment is present on the Subject Property.

The soil quality was assessed through the recovery of soil samples during the drilling of 11 boreholes on the Subject Property. Soil samples were recovered at regular depth intervals, to allow the characterization of physical soil properties, as documented in the field logs. Soil characteristics were not logged during the drilling of the deep bedrock wells, as these were considered to be in the same stratigraphy as the adjacent shallow wells.

The groundwater quality was assessed in seven groundwater monitoring wells. Four wells were observed to be dry at the time of sampling. Groundwater from MW-5C was recovered using a bailer, while groundwater from the remaining wells was recovered using a low-flow sampling protocol, due to the anticipated slow recovery of the wells. Water samples were collected in laboratory prepared bottles and were submitted to an accredited laboratory for analysis of the contaminants of potential concern.

### **3.3 Phase One Conceptual Site Model**

The Subject Property was used as an automotive repair centre and gasoline retail outlet from the 1930s to 1997. The Phase One Conceptual Site Model is summarized as follows:

- ◆ A single residential structure and small parking lot kiosk are on the Subject Property;
- ◆ No water bodies are within the study area;
- ◆ No areas of natural significance are in the study area;
- ◆ The extent of the removal of former underground utilities was not recorded in previous reports. It is possible that abandoned conduits remain on the Subject Property.
- ◆ No drinking water wells are in the study area;

- ◆ Surrounding land uses (Figure 2) include residential uses to the north, east, south and west. Immediately adjacent to the Subject Property are Somerset Street West (to the north) and Lebreton Street North (to the west).
- ◆ Site soil conditions (silty sand to sand and gravel) provide moderate to high permeability for contaminant migration;
- ◆ Groundwater is approximately 3.3 to 3.7 m below ground surface, based on field measurements during previous investigations;
- ◆ The local topography is gently sloped down to the northwest towards the Ottawa River approximately 1.1 km from the Subject Property.
- ◆ Regional groundwater is generally expected to flow north towards the Ottawa River. It should be noted that local groundwater flow may be influenced by underground utilities (i.e., service trenches) and building structures.
- ◆ Bedrock within the phase one study area consists of nodular to black laminated limestone of the Collingwood formation with a drift thickness estimated to be between 0 and 10 m deep. The surficial geology within the phase one study area is comprised of sandy silt to silty sand rising to paleozoic bedrock near the surface. Based on site investigations however, site geology consists of silty sand and gravel, which would have a moderate to high permeability.

### 3.4 Deviations From Sampling And Analysis Plan

The sampling and analysis plans prepared in advance of the soil and groundwater investigations are included in Appendix A-1. The intent of the plans was followed during the investigations to ensure that soil and groundwater quality was assessed in the areas of potential environmental concern (APECs) on the Subject Property. Minor deviations to the plan were required based on field conditions, as identified in the following:

- ◆ Boreholes at four locations were advanced approximately 0.5 m into the surface bedrock, to improve the groundwater recovery potential of the wells. The well screens were located to straddle the overburden and weathered bedrock interface.
- ◆ The field screening results did not indicate any gross contamination in soil samples and the anticipated sampling program was not completely required. A sample for analysis of metals and inorganics was not submitted from MW6 and only one sample was submitted for PHCs or VOCs instead of the two planned samples at MW1, MW4, MW5, MW7 and MW8. Based on the consistency of results from the actual sampling program, the reduction is not considered to adversely affect the interpretation of soil and groundwater quality at the Subject Property.
- ◆ The soil sample volume submitted for analysis of VOCs in 2012 was smaller than required by the laboratory. This resulted in elevated detection limits for some VOC parameters. The effect of this is discussed in more detail in Section 4. Subsequent sampling in 2013 provided sufficient sample.
- ◆ A field duplicate was not submitted for analysis of PAHs.
- ◆ The initial sample from MW-7 SS1 was not submitted for analysis of metals and inorganics, however DUP1 was submitted for this analysis. For the purpose of this report, the sample identified by the laboratory as DUP1 is referred to as MW-7 SS1.

- ◆ The number of duplicate samples submitted was consistent with at least one for every 10% although for metals and inorganics, a duplicate was not submitted for each sampling day.

### **3.5 Impediments**

There were no impediments that prevented completion of the original defined scope of investigation.

## **4.0 INVESTIGATION METHOD**

### **4.1 General**

The soil and groundwater quality at the Subject Property was investigated at the locations shown on Figure 2 through the advancement of boreholes and the installation of groundwater monitoring wells. Investigation methods followed Standard Operating Procedures prepared by MMM for the conduct of environmental investigations. The investigation methods are described in the following sections.

The boreholes were located to intersect the identified APECs and to provide spatial distribution across the Subject Property. This judgemental approach to sampling location is considered sufficient for the identification of areas of contamination on the Subject Property and identification of maximum concentrations of contaminants in the media investigated.

### **4.2 Drilling and Excavating**

The drilling was conducted by Strata Soil Sampling Inc., under the direction of MMM on November 8 and 9, 2012, October 23 to 25, 2013, and October 8, 2014. The investigation program in 2012 focused on overburden geology within 4.0 m of the ground surface. In 2013 and 2014, the groundwater conditions in bedrock were assessed through deeper wells. The boreholes were advanced using direct push methods with modified Geoprobe® tooling and air rotary bedrock drilling capabilities. Of the boreholes that were drilled, two were stopped at refusal on top of the inferred bedrock surface and nine of the boreholes were further advanced into weathered bedrock from 0.15 m to 0.46 m using the air rotary capabilities. Three wells were installed deep into the bedrock, to assess hydrogeological conditions that may be associated with construction dewatering and to further assess the environmental quality of groundwater. Continuous soil samples were collected from the ground surface to bedrock using plastic dual tube liner inserted into an outer rod to prevent cross-contamination of the recovered soil samples. A groundwater monitoring well was completed at each location.

Two test pits were advanced to assess geotechnical conditions of the soil at the southeast property boundary. Although MMM was present for the test pit excavations, no samples were recovered nor was soil logged.

### **4.3 Soil: Sampling**

Soil samples were collected from the continuous cores that were retrieved during drilling. Each core sample was approximately 1.2 m long and three cores were collected from each borehole, as follows:

- ◆ SS-1 from 0 to 1.2 m bgs
- ◆ SS-2 from 1.2 to 2.4 m bgs
- ◆ SS-3 from 2.4 to 3.6 m bgs or bedrock refusal.

Site geological conditions were observed in the soil samples and recorded to a field log (Appendix A-2) by a MMM technician indicating the colour, odour, texture, soil type and moisture. Based on a review of the finalized field logs, the soil generally consisted of sand, gravely sand or sand and gravel over limestone bedrock. The sand generally appeared to be reworked fill; however, deeper portions of the overburden in MW-1, MW-2 and MW-9B are interpreted to be native soil.

Soil samples were recovered from the cut-open cores and placed in labeled polyethylene bags for screening. The samples were screened within 30 minutes of sampling and then any sample remaining after jarring was placed in a cooler. For screening, a portion of each sample was maintained in an undisturbed condition and the balance of the sample was broken up to release soil vapours. The vapour readings were measured as described in Section 4.4 and selected samples were jarred in laboratory prepared bottles for submission for chemical analysis (Table 1). For samples considered for VOC or BTEX-F1 analysis, a core was recovered from the undisturbed portion of the bag and placed in a laboratory prepared vial containing a measured amount of methanol. Efforts were made to avoid splashing the methanol during sample placement.

#### 4.4 Field Screening Measurements

Subsets of the 1.2 m long core were recovered for screening using a (Mini-Rae 3000 photoionization detector (PID) and RKI Eagle combustible gas indicator (CGI). Results of field screening are included in the field logs and for those samples submitted to the laboratory, data are included Table 1.

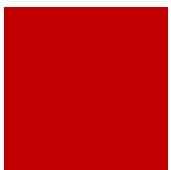
The PID detects total organic vapours that emit below an ionization potential of 10.7 eV and includes a range of VOCs such as solvents and fuels. The PID will not detect contaminants with higher ionization potentials, such as dichloromethane and tetrachloroethylene. The PID provides an indication of organic contamination in soil but does not measure concentrations of individual contaminants.

The CGI detects combustible vapours such as those associated with fuels. This instrument measures a concentration of total combustible gas, calibrated to hexane. As with the PID, it provides an indication of contamination but not chemical specific concentrations. The instrument provides measurement at low concentrations in the parts per million range and for higher concentrations, the units are presented as a percentage of the lower explosive limit.

The accuracy and precision of both instruments will depend on soil characteristics, site conditions and weather, which can be difficult to quantify. The instruments are considered to be accurate and precise indicators of gross contamination in soil vapour. Both instruments were obtained from Pine Environmental for this project. The instruments are calibrated by Pine on a regular basis, including prior to the use on this project, to ensure consistent results. Site calibration was conducted using a test gas and this was conducted at the beginning of each day.

**Table 1: Summary of Field Measurements and Sample Analysis**

Sample ID	Sample Depth (m bgs)	Field Vapour Readings <sup>1</sup>	Metals and Inorganics	PHCs and VOCs	PAHs	PCBs
MW-1-SS1	0 to 1.2	6.5/350	X			
MW-1-SS2	1.2 to 2.7	0.5/360	X			
MW-1-SS3	2.7 to 3.8	0.4/360		X		
MW-2-SS1	0 to 1.2	13/330			X	
MW-2-SS2	1.2 to 2.7	226.8/330	X	X <sup>2</sup>		
MW-2-SS3	2.7 to 3.9	31.7/330		X		
MW-3-SS1	0 to 1.2	11.8/300	X			
MW-3-SS2	1.2 to 2.7	5/300	X			
MW-3-SS3	2.7 to 3.8	6.1/300		X		
MW-4-SS2	1.2 to 2.7	11.8/250	X	X		
MW-5-SS1	0 to 1.2	8/280	X <sup>2</sup>			
MW-5-SS2	1.2 to 2.7	12.1/280			X	
MW-5-SS3	2.7 to 4.1	9.5/280		X <sup>4</sup>		
MW-6-SS2	1.2 to 2.7	18.7/340		X		
MW-6-SS3	2.7 to 4.1	31.0/330		X <sup>2</sup>		
MW-7-SS1	0 to 1.2	1/240	X <sup>3</sup>			
MW-7-SS2	1.2 to 2.7	0.6/240	X			
MW-7-SS3	2.7 to 4.0	2.5/240	X	X <sup>4</sup>		X
MW-8-SS2	1.2 to 2.7	58.3/250		X		
MW-8-SS3	2.7 to 4.1	37.7/250		X		X <sup>2</sup>
MW-9B-SS2	1.2 to 2.7	26.2/100	X <sup>2</sup>	X <sup>2</sup>	X	
MW-9B-SS3	2.7 to 4.1	3.3/110		X		
MW-10-SS2	1.2 to 2.7	0/0	X	X	X	
MW-11-SS2	1.2 to 2.7	0.3/130	X	X	X <sup>5</sup>	
Notes: 1. Field vapour readings are reported in parts per million (ppm) for total organic vapours using a PID and total combustible vapours using a CGI. CGI background in ambient air ranged from 240 to 350 ppm. 2. Duplicate sample, identified to the laboratory as DUP1 or DUP2 was submitted for this analysis. 3. Sample identified as DUP1 was submitted for this analysis; however, the original sample was not submitted. For the report, the sample identification is considered MW-7 SS1. 4. Sample submitted for PHCs in the F1 to F4 fraction and BTEX. Other VOCs not included in this analysis. 5. Sample for PAH analysis from MW-11 was labelled MW11A-2.						



A total of 24 soil samples were collected in bags for screening, which was conducted within 30 minutes of collection. The vapours in recovered soil were generally at the background levels for the instruments, however, the samples with the higher vapour readings, particularly if these coincided with the water table, were selected for analysis of PHCs or VOCs.

#### **4.5 Ground Water: Monitoring Well Installation**

As indicated in Section 4.2, each borehole was completed as a monitoring well, constructed as follows:

- ◆ 0.051 m diameter well screens and PVC riser pipe.
- ◆ The screened interval was 1.52 m long with a No. 10 slot size screen.
- ◆ Sand pack, consisting of No. 2 silica sand, was placed around the well screen to the outer diameter of 0.1 m and the sand pack was extended to 0.3 m above the top of the screen.
- ◆ A bentonite seal was then placed around the PVC riser pipe up to within 0.6 m of the ground surface.
- ◆ The monitoring wells were completed with flush-mount covers grouted into place.

The monitoring wells were completed in accordance with Ontario Regulation 903, as amended. Groundwater levels were observed in the monitoring wells upon completion and were measured upon return site visits.

#### **4.6 Ground Water: Field Measurement of Water Quality Parameters**

Manual groundwater levels were collected for the initial and supplemental programs as follows: November 9, 2012 immediately after completion of drilling; November 16, 2012 prior to groundwater sampling (Table 2); October 25, 2013 after completion of the supplemental drilling; October 29, 2013 during sampling; August 7 and 8, 2014, during sampling; and November 11, 20, and 26, 2014, during sampling. At the initial monitoring event, MW-3, MW-4, MW-6, MW-7, and MW-8 were observed to be dry. Groundwater was observed to have infiltrated well MW4 but the other four wells remained dry during the November 16, 2013 monitoring event. Groundwater was present in the wells installed in 2013 and 2014.

The groundwater quality was evaluated for pH, temperature and electrical conductivity from purged water collected in a clean bucket or flow cell at the time of sampling. During the 2012 and 2013 sampling events, measurements were taken using a Hanna Instruments portable pH, temperature, total dissolved solids and electrical conductivity meter (Model HI99300) capable of measuring the three parameters. During the 2014 sampling events, measurements were taken using a Horiba U-50 Multi-parameter Water Quality Meter. Based on the lack of impacts in soil, field measurement for parameters more typically associated with petroleum and organic contamination were not considered necessary.



**Table 2: Well Installation and Monitoring Details**

Monitoring Well	Ground Elevation (m asl)	Screened Interval (m asl)	Water Level		Volume Purged (L)	Field Chemistry (after purging) <sup>4</sup>		
			A	B		pH	Electrical Conductivity (mS/cm)	Temperature (°C)
MW-1	74.63	72.30 to 70.78	--	71.32	2.0	8.16	19.4	22.2
MW-2	75.33	72.95 to 71.43	71.83	71.75	1.0	7.58	22.5	19.70
MW-3	74.96	72.67 to 71.15	Dry	Dry	Dry	--	--	--
MW-4	73.54	72.17 to 70.65	70.81	70.70	0.5	--	--	--
MW-5A	74.60	65.57 to 62.52	70.93	70.92	51	7.47	0.009	24.50
MW-5B	74.66	72.07 to 70.55	70.97	70.89	0.5	6.96	7.5	22.59
MW-5C	74.63 <sup>3</sup>	56.34 to 54.82	--	--	--	--	--	--
MW-6	75.55	72.96 to 71.44	--	Dry	Dry	--	--	--
MW-7	75.97	73.53 to 72.01	Dry	Dry	Dry	--	--	--
MW-8	75.98	73.39 to 71.87	72.10	72.09	Dry	--	--	--
MW-9A	75.84	66.39 to 63.34	70.70	70.57	43	7.31	5.44	17.14
MW-9B	73.67	71.84 to 70.31	71.00	70.92	2.0	--	--	--
MW-10	72.58	69.53 to 66.48	70.11	70.07	6	7.60	4.58	18.94
MW-11	73.77	70.72 to 67.67	71.07	71.07	8	--	--	--

**Notes:**

1. Groundwater elevation measured as October 2013 (A) and August 2014 (B). Water levels measured on these days are considered representative of the groundwater conditions on the site.
2. '--' indicates well could not be accessed or dry condition didn't allow monitoring.
3. MW-5C was not surveyed, however it is located within 1 m of MW-5A and MW-5B; therefore, the ground elevation at MW-5C has been approximated using the geometric mean of the ground elevation at MW-5A and MW-5B.
4. Field chemistry recorded during August 2014 monitoring.

## 4.7 Ground Water: Sampling

The drilling method used for the installation of the wells did not introduce drilling fluids into the subsurface. Municipal water was used for the drilling of one of the deeper bedrock wells, identified as MW-9A. Therefore, well development consisted of purging groundwater to remove standing water and fine-grained material from the well and associated sand pack. For this project, wells were purged to remove three times the volume of water in the well, or to dryness.

Groundwater samples were collected from the monitoring locations which contained water on November 16 and 17, 2012, October 28, 2013, and August 7 and 8, 2014. As MW-5C was installed after the previous ten wells, it was purged and sampled on October 9, 2014 and December 3, 2014. Purging was generally conducted the day prior to sampling to allow groundwater to recover sufficiently. Based on most recent monitoring, depth to groundwater ranged from 2.5 m bgs to 19.8 m bgs. After purging the wells, groundwater was allowed to recover into the well prior to sampling using a low-flow peristaltic pump.

Groundwater samples were collected in laboratory prepared jars and submitted for analysis of contaminants of concern, as identified in Section 4.9.

## 4.8 Sediment: Sampling

No sediment sampling was conducted as part of the investigation.

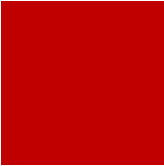
## 4.9 Analytical Testing

Soil samples were submitted for analysis for the contaminants of concern at the Subject Property, including:

- ◆ Metals and inorganic parameters (13 samples from ten boreholes plus two duplicates);
- ◆ PHC fractions F1 to F4 including BTEX (15 samples from 11 boreholes plus two duplicates) and gravimetric analysis was conducted for two samples where the baseline was not reached;
- ◆ VOCs (13 samples from nine boreholes plus three duplicates);
- ◆ PAHs (five samples);
- ◆ PCBs (two samples plus one duplicate); and
- ◆ Grain size through sieve analysis (three samples).

Groundwater samples were submitted for analysis of:

- ◆ Metals and inorganics, although sufficient sample volumes for mercury and chromium VI were not obtained from MW-1 and MW-5B during the 2012 sampling, and from MW-5C during the 2014 sampling (9 samples plus 3 duplicates during the 2012/2013 sampling, 9 samples plus 1 duplicate during the August 2014 sampling, and 1 sample with duplicate during the December 2014 sampling);
- ◆ VOCs (10 samples plus 3 duplicates and 3 trip blanks);
- ◆ PHC fractions F1 to F4 including BTEX (12 samples plus 5 duplicates); and
- ◆ PCBs at MW-5A and MW-5B only.



In 2012 and 2014, samples were submitted to Maxxam Analytics (Maxxam), in Mississauga, Ontario for chemical analysis. Maxxam has been accredited by the Standards Council of Canada (SCC) for the requested soil and groundwater analyses. In 2013, samples were submitted to Exova Group Limited (Exova) in Mississauga, Ontario for chemical analysis. Exova is accredited by Canadian Association for Laboratory Accreditation (CALA) for the required soil and groundwater analyses. Samples for analysis of grain size were submitted to Peto McCallum Limited (PML).

Analytical results were compared to MOE Table 3 of the Standard for coarse grained soils, noting that soils at the site consisted primarily of sand to gravelly sand fill, as well as silty gravelly sand. The assumed size distribution was supported by grain size analysis reported by PML of three samples (MW-2 SS2, MW-3 SS2 and SS3), as indicated in Section 5.4. Based on the City of Ottawa obtaining drinking water from the Ottawa River, non-potable groundwater conditions were assumed to apply (Appendix A-1).

#### **4.10 Residue Management Procedures**

Soil cuttings from drilling operations were collected and contained in drums for removal offsite in association with the development excavation. Minimal volumes of purge water were generated (less than 10 L total at each event) and this water did not show evidence (visual or odour) of impacts and was disposed on the ground at the Subject Property.

Equipment wash fluids were contained and removed by the driller as part of their scope of work.

As the management of residues did not require any permits or approvals, an appendix with this information is not included in this report.

#### **4.11 Elevation Surveying**

The elevation of the monitoring wells (ground elevation and top of pipe elevation) was surveyed on November 9, 2012 and on October 25, 2013. This survey data is provided in Table 2.

#### **4.12 Quality Assurance and Quality Control Measures**

Quality assurance and quality control of the soil and groundwater samples was monitored and maintained in a number of ways:

- ◆ This field investigation was completed under MMM standard operating procedures (SOPs) for soil and groundwater sampling. Deviations from the SOPs are documented and referenced in this report.
- ◆ Samples were given unique identifications as they were collected, identifying the project number, date, sample location and depth. The sample numbers were recorded in field notes for each location.
- ◆ Sample containers provided by the laboratory were used and laboratory requirements for sample size, container type, preservatives and filtering were followed.
- ◆ Non-disposable sampling equipment was cleaned using Alconox and distilled water following each use.

- ◆ A chain-of-custody form was filled out for the samples prior to submitting the samples to the laboratory. The chain-of-custody documented sample movement from collection to receipt at the laboratory and provided sample identification, requested analysis and conditions of samples upon arrival at the laboratory (e.g., temperature, container status, etc.).
- ◆ Soil samples were randomly selected by the MMM field staff for duplicate testing. For most of the requested analyses, one or two duplicate samples were submitted for analysis, representing either one sample for every ten samples submitted or in the case of VOC analysis, one soil sample duplicate was submitted for each sampling day. A duplicate was not submitted for PAH analysis.
- ◆ For analysis of groundwater for VOCs, a trip blank was submitted for analysis for the one sampling event.
- ◆ Field monitoring equipment was calibrated according to industry requirements prior to the site visit including onsite calibration.
- ◆ Samples were randomly selected by the laboratory for Quality Assurance checks. Generally, one sample for every ten samples submitted is checked. For each parameter, there is an acceptable upper and lower limit for the measured concentration of the parameter. Measured concentrations of analysed samples must fall within the upper and lower acceptable limits in order for the sample to be valid. If a result exceeds the upper or lower acceptable limits, the sample must be re-analysed.

## 5.0 REVIEW AND EVALUATION

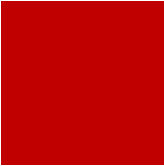
### 5.1 Geology

As noted in Section 2.1, the native surficial geology near the Subject Property is indicated to be sandy silt to silty sand overlying paleozoic bedrock, which is not far below ground surface (Ontario Geological Survey, 2010). It is interpreted that the near-surface overburden geology in the area has been greatly modified through urbanization, including construction of roads, buildings, and underground utilities, all of which has involved excavation of native soils and replacement with backfilled materials. At the Subject Property, evidence of backfill was encountered in each borehole, with interpreted native soil observed at depth in only three boreholes. This is shown in the cross-section of the Subject Property included as Figures 3A, 3B and 3C.

The overburden and bedrock groundwater bearing units were investigated in this ESA. The overburden unit was considered to be an unconfined aquifer and to be present in the overburden soils and the upper weathered layer of bedrock, consisting of approximately 0.4 m. The thickness of the overburden unit ranged from approximately 2.5 to 4.0 m.

Bedrock in the area including the Subject Property consists of nodular to black laminated limestone of the Collingwood formation (Armstrong, D.K. and Dodge, J.E.P. 2007), which is also interpreted to have moderate hydraulic conductivity, and higher hydraulic conductivity near the bedrock-overburden interface where it is fractured and weathered. The hydraulic properties of the bedrock were investigated within the upper 7 m of the layer.

As noted in Section 4.3, geological conditions at the Subject Property consisted of well graded sand, gravely sand or sand and gravel over limestone bedrock. The sand generally appeared to



be reworked fill, with loose to firm density, however deeper portions of the overburden at MW-1, MW-2 and MW-9B (below 1.52 m bgs) are interpreted as native deposits. Within the overburden, particularly the upper 2 m, asphalt and concrete fragments were occasionally observed within the sand/sand and gravel fill. Although not well captured in the soil cores, the uppermost 0.30 m of the overburden profile is interpreted to consist of asphalt and subgrade pavement structure. Only one interval of finer grained materials (MW-1, 2.43 to 3.04 m bgs) was observed in this investigation.

The topography of the Subject Property (Figures 3A, 3B and 3C) is sloping from east to west and the residential property, south of the retaining wall is approximately 2 m lower. It is noted that most of the slope is west of MW-6, and east of MW-6 the ground is higher but relatively flat. The southwest corner at MW-4 is at the lowest elevation is approximately 2.5 m lower than MW-8, at the south-east corner of the Subject Property, where the highest ground was observed.

The depth to bedrock observed in this investigation ranged from m to x m below ground surface. The surface of the top of bedrock, as determined in this investigation, slopes down to the west-southwest, whereby the top of bedrock at the lowest measured point at MW-4 is 1.81 m lower than the top of bedrock at the highest measured point at MW-3. The topography of the bedrock surface generally reflects that of the ground surface, however the bedrock slope is interpreted to be more uniform based on the measurements made during this investigation.

## **5.2 Ground Water: Elevations and Flow Direction**

After monitoring well installation on November 9, 2012, only the three monitoring wells furthest west (MW-1, MW-2, and MW-5) contained groundwater. Groundwater was observed in MW-4 on November 16, 2012. The 2013 monitoring events noted that water had also infiltrated into MW-8. The wells installed in 2013 yielded groundwater that was monitored and sampled. Table 3 provides additional monitoring well details, as well as groundwater hydraulic monitoring results at the Subject Property.

Seasonal variations in groundwater elevations are likely to occur, with higher elevations in the spring and lower elevations in the fall. Changes in the groundwater elevation are not expected to affect the distribution of contaminants in the soil and groundwater.

The interpreted groundwater flow direction, based on the most recent monitoring, is to the southwest, with an average horizontal groundwater flow gradient of 0.04. It is noted that the top of weathered bedrock at the eastern portion of the Subject Property is higher than the highest groundwater level observed (MW-3, 97.22 m above datum), indicating that the water table (shallow groundwater piezometric surface) was entirely within the bedrock under the eastern portion of the Subject Property at the time of monitoring. At the western portion of the Subject Property, water level measurements indicate that the saturated portion of overburden is less than 0.5 m above the top of bedrock.

It is, therefore, interpreted that bedrock topography is strongly influencing groundwater flow at the Subject Property. Shallow groundwater likely follows bedrock valleys and/or utility corridors, and ultimately discharges to the Ottawa River, although shallow groundwater may also flow into or out of the bedrock aquifer, depending on where highly weathered bedrock, with preferred groundwater flow pathways, may be present. Based on the available data, the interpreted groundwater flow is shown on Figure 4.

### 5.3 Ground Water: Hydraulic Gradients

The 2013 and 2014 investigation installed monitoring wells into bedrock at locations to form two well nests. This allowed for the measurement of vertical hydraulic gradients. It is interpreted that vertical hydraulic gradients are downward, based on the fact that the Subject Property is in an area of relatively higher ground. The difference in the measured depth to groundwater at the nested wells (MW-5 and MW-9) was between 0.03 and 0.35 m.

**Table 3: Groundwater Monitoring and Surveying Results**

Monitoring Well ID	Ground Surface Elevation (m asl)	Top of Riser Elevation (m asl)	Screened Interval (m asl)	Top of Bedrock (m asl)	Depth to Groundwater Oct 2013 (m below Top of Riser)	Elevation of Groundwater Oct 2013 (m asl)
MW1	74.63	74.53	72.30 to 70.78	70.78	No access	-
MW2	75.33	75.23	72.95 to 71.43	71.78	3.50	71.83
MW3	74.96	74.86	72.67 to 71.15	71.46	Dry	-
MW-4	73.54	73.44	72.17 to 70.65	70.65	2.73	70.81
MW-5A	74.60	74.52	65.57 to 62.52	70.33	3.67	70.93
MW-5B	74.66	74.56	72.07 to 70.55	70.70	3.69	70.97
MW-5C	74.63	74.54	56.34 to 54.82	70.67	--	--
MW-6	75.55	75.45	72.96 to 71.44	71.64	No access	-
MW-7	75.97	75.87	73.53 to 72.01	72.47	Dry	-
MW-8	75.98	75.88	73.39 to 71.87	72.27	3.88	72.10
MW-9A	75.84	75.80	66.39 to 63.34	70.04	5.13	70.71
MW-9B	73.67	73.60	71.84 to 70.31	70.43	2.67	71.00
MW-10	72.58	72.52	69.53 to 66.48	70.14	2.47	70.11
MW-11	73.77	73.68	70.72 to 67.67	71.94	2.7	71.07

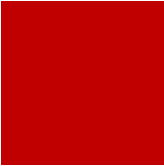
### 5.4 Soil Texture

The results of grain size analysis are presented in Appendix A-3. Based on the grain size curves, majority of overburden materials at the Subject Property consist of well graded sand to sand and gravel backfill, with a small area of deeper sediments, also primarily sand, and interpreted as native deposits.

### 5.5 Soil: Field Screening

CGI and PID readings are included for most locations in Table 1 and for all samples on the borehole logs in Appendix A-2. The purpose of the screening was to evaluate whether





combustible (e.g., petroleum) or volatile (e.g., solvents) compounds may be present in the recovered samples. CGI readings for the soil samples were between 240 to 360 ppm. However, it was noted that background concentrations in ambient air were generally between 320 and 360 ppm. PID readings for the soil samples were between 0 to 227 ppm with background concentrations in ambient air being 0 ppm.

The readings obtained during field monitoring indicate that vapour concentrations are relatively low at most locations but did indicate potential contamination at some locations. In general the PID readings do not represent gross organic contamination. This was consistent with visual and olfactory observations. During the 2012 investigation, a sample representing the highest CGI and/or PID readings was submitted for PHC and/or VOC analysis at each monitoring well location.

## 5.6 Soil Quality

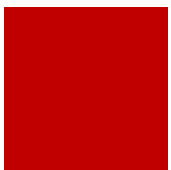
The analytical soil results from the Phase Two ESA are provided in Table 4 (metals and inorganic parameters), Table 5 (PAHs), Table 6 (PHCs), Table 7 (VOCs) and Table 8 (PCBs). The distribution of contaminants in soil is shown in Figure 5A (metals and inorganics) and 5B (PHCs).

Comparison of analytical results of this investigation to the MOE 2011 Table 3 RPI Standard for coarse-textured soils identified lead, mercury, zinc, pH, electrical conductivity (EC), sodium adsorption ratio (SAR) and the F3 and F4 fractions of PHC impacts at concentrations exceeding the Standard. Although PAHs and VOCs were detected in some samples, the concentrations were well below the MOE Table 3 standards and were not indicative of impacts. No PCBs were detected in the submitted soil samples.

The pH value of 9.06 in sample SS2 collected from MW-8 exceeded the acceptable upper range of 9.0 identified in the applicable MOE standards. The sample depth was from 1.2 m to 2.4 m, and provided the soil was recovered from below 1.5 m, then the pH is acceptable within MOE standards. Because of the minor exceedance, the depth of the sample and low frequency (i.e., one sample), it is concluded that this exceedance is not indicative of a sensitivity of the Subject Property.

For the metals in soil, the concentration of lead exceeded at MW-1 SS1, MW-5 SS1 and MW-7 SS2. The SS1 samples were recovered from surface to 1.2 m, and the SS2 samples were recovered from 1.2 m to approximately 2.4 m below grade. The concentration of mercury exceeded the MOE standard at two of these locations (MW-5 and MW-7) and the concentration of zinc exceeded the MOE standard at MW-5 only. The concentrations of these contaminants exceed the standards by a relatively small amount; however, because of the concentration of lead in the samples, the material will require management as waste once removed from the site during construction. Based on the history of the Subject Property, it is assumed that the metal contaminants in the fill are associated with the source of the fill. These metals are common in fills from urban areas and are not expected to be indicative of an onsite source. Deeper samples were not submitted for analysis of these metals and therefore it is assumed that contaminants extend vertically to bedrock.

Values of EC and SAR were elevated at six of the ten sampling locations (Table 4) (note samples were not submitted from MW-6 for inorganic parameters). These parameters are associated with the use of salt (sodium chloride) for ice management and elevated values are



expected at a site adjacent to a major urban street and used for a parking lot or residential driveway. Although the values for these two parameters exceed the Standards for residential land use, they are acceptable for commercial or industrial land uses and the values in soil are generally low, compared to the concentrations of sodium and chloride in groundwater (see Section 5.7). It is possible that the remediation of the property in 2000 removed much of the EC and SAR in the soil and the concentrations measured in this investigation are representative of loadings on the site since 2000.

For PHC F3 and F4 fractions, impacts were identified at a single sampling location (MW-8 SS2). MW-8 is located near the former waste oil UST and therefore the measured concentrations may be indicative of residual impacts not removed during remediation. These concentrations represent material that will require management as waste at the time of redevelopment. Results of analysis for MW-8 SS3 indicate that impacts do not extend deeper than 2.7 m bgs.

The concentrations of contaminants in the soil were not measured in the groundwater and do not appear to be a source of contaminant loading. Nor do the concentrations identified through this investigation suggest the presence of non-aqueous phase liquids. The contaminants identified in the soil are unlikely to transform significantly through biological or chemical reactions.

The concentrations of the contaminants of concern (lead, mercury, zinc, EC, SAR and PHCs (F3 to F4)) in the other samples analysed from the Subject Property are significantly less than the applicable MOE standards. Based on available data, the impacts are limited to the south and west boundaries of the Subject Property. It may be possible to segregate the impacted soil at the time of redevelopment; however, additional sampling would be required to support the segregation.

## 5.7 Ground Water Quality

Groundwater analytical results from the Phase Two ESA investigation are provided in Table 9 (metals), Table 10 (PHCs), Table 11 (VOCs) and Table 12 (PCBs). Ten of the monitoring wells intersected groundwater from the Subject Property. Five of these wells (MW-1, MW-4, MW-9B, MW-10 and MW-11) were installed in the soil overburden and two of the wells (MW-2 and MW-5B) were set 0.15 m to 0.35 m into the limestone bedrock. Three wells (MW-5A, MW-5C, and MW-9A) were cored into the bedrock. The groundwater elevation on the east portion is expected to be deeper than the surface of bedrock and may be influenced by the building drainage system to the east.

Groundwater recovered from the monitoring wells for analysis of metal parameters was filtered using in-line filters, according to MOE and laboratory protocols. As MW-5C was sampled using a bailer, field filtering was not possible. The groundwater recovered from this well was filtered by the lab for the analysis of metal parameters. Although a low flow sampling method was used to reduce suspended solids in the samples, some turbidity was evident in samples.

Comparison of analytical results from the 2012 and 2013 sampling to the MOE 2011 Table 3 non-potable groundwater standard identified the concentration of silver as exceeding the standard at a single location and sodium and chloride concentrations exceeding the standard at four and seven sampled locations, respectively. The analytical results from the 2014 sampling identified exceedances for silver at four locations, sodium at seven locations, and chloride at

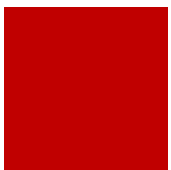
nine locations. The distribution of contaminants in groundwater is shown in Figure 5C. Table 13 shows the distribution of sodium and chloride on the Subject Property for sampling events in 2012/2013 and in 2014.

The concentrations of sodium and chloride in groundwater are likely a result of the use of road salt both on Somerset Street West immediately to the north and on the site used for parking. The concentrations of sodium and chloride were elevated on the residential property also, but at generally lower concentrations than those observed on the parking lot site. The highest concentrations of sodium and chloride are located in wells adjacent to Somerset Street West (MW2 and MW4). For the residential property, concentrations were higher in MW10, which is adjacent to Lebreton Street, compared to MW11, which is not directly adjacent to the roadway. Cross-section C (Figure 3C) shows that concentrations of sodium and chloride are decreasing with increasing distance from Somerset Street. The evidence presented above suggests that the use of the Subject Property for parking is not the sole contributor to the elevated sodium and chloride concentrations, and that the use of salt on the adjacent road contributed significantly to contamination onsite. Under Paragraph 48 of O. Reg. 153/04, sodium and chloride have resulted from the use of a substance on a highway for control of ice and the applicable SCS are deemed not to have been exceeded.

**Table 13: Distribution of Sodium and Chloride in Groundwater**

Monitoring Well ID	Units	Concentration of Sodium		Concentration of Chloride	
		2012/2013	2014	2012/2013	2014
MW1	ug/L	4,300,000	3,700,000	7,350,000	5,700,000
MW2	ug/L	2,100,000	2,600,000	2,600,000	9,300,000
MW3	ug/L	Not sampled	Not sampled	Not sampled	Not sampled
MW4	ug/L	3,200,000	5,600,000	4,900,000	10,000,000
MW5A	ug/L	Not sampled	3,850,000	Not sampled	6,350,000
MW5B	ug/L	3,200,000	3,400,000	4,600,000	5,900,000
MW5C	ug/L	Not sampled	4,000,000	Not sampled	6,800,000
MW6	ug/L	Not sampled	Not sampled	Not sampled	Not sampled
MW7	ug/L	Not sampled	Not sampled	Not sampled	Not sampled
MW8	ug/L	Not sampled	Not sampled	Not sampled	Not sampled
MW9A	ug/L	338,500	800,000	631,500	1,500,000
MW9B	ug/L	3,525,000	5,465,000	3,400,000	5,800,000
MW10	ug/L	2,110,000	3,720,000	2,300,000	3,900,000
MW11	ug/L	1,540,000	2,544,000	2,100,000	3,400,000

Based on the relatively low values of EC and SAR in the soil, compared to the elevated concentrations of sodium and chloride in the groundwater, it is unlikely that the groundwater contamination is contributing to soil contamination to any significant degree. The concentrations will vary seasonally, with the use of salt and the infiltration of surface melt into the subsurface.



Neither silver, nor sodium and chloride would be influenced by chemical or biological activity within the subsurface. These contaminants are not associated with non-aqueous phase liquids.

During the 2013 groundwater sampling event, PHCs in the F3 range were measured at MW-9B and chloroform was measured in MW-9A. Because the F3 fraction is associated with heavier oils, it was not considered a likely contaminant in groundwater from a decommissioned gas station. The chloroform was considered to be associated with the use of municipal water that was required for bedrock coring at MW-9A. Both wells were resampled in November 2013. The chloroform concentration was reduced to below detection limits, supporting the conclusion that it was related to the introduction of municipal water during drilling. The results for sampling at MW-9B were inconclusive again during the second sampling event. Additional sampling was conducted on December 13, 2013 to assess the contaminant characteristics. PHCs were sampled in groundwater recovered from MW-9B where previously inconclusive results had measured F3 in one of two duplicate samples and from MW-10 where F3 was measured in a single sample (at a concentration less than the standard). Duplicate samples were recovered from each well. The results of this sampling indicated acceptable reproducibility between duplicate samples and the concentration of F3 and other parameters were less than the standard values.

Silver is considered the only contaminant of concern in the groundwater at the Subject Property.

## **5.8 Sediment Quality**

Evaluation of sediment quality was not within the scope of this investigation.

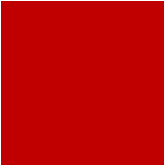
## **5.9 Quality Assurance and Quality Control Results**

The soil and groundwater samples were collected according to standard procedures, however smaller than recommended volumes were recovered in the VOC vials during the 2012 investigation. This resulted in elevated reporting limits compared to MOE standards. Most of the chemicals with elevated reporting limits are not contaminants of concern at the Subject Property; however some of the chlorinated solvents may have been used in the former service station operations. Chlorinated solvents used in commercial and industrial applications typically occur in a mixture and for some of these chemicals, the detection limits were equal to or less than the MOE standard values. The sampling conducted in 2013 recovered sufficient sample for undiluted VOC analysis, and no VOCs were detected. It is concluded that the elevated reporting limits from the 2012 investigation are not indicative of the presence of contaminants in the soil at the Subject Property.

Sample preservation, storage and hold times were within requirements of the regulation.

The certificates of analysis included in Appendix A-3 are in compliance with the regulation and represent the complete packages received from Maxxam and Exova. Where sample identifications were changed from field recording to this report to facilitate report clarification, a note was made in the appropriate reporting section.

Duplicate soil and groundwater samples were recovered during the investigation, as documented in Section 4.9. The soil and groundwater sample duplicates submitted for analysis of PHCs, PAHs, PCBs and VOCs did not have sufficient measurable concentrations of the



analyzed parameters and therefore accuracy and reproducibility could not be calculated. For the metals analysis, the relative percent difference (RPD) could be calculated for those parameters for which the measured concentration was more than three times the laboratory reporting limit. These are summarized in Table 14 (soil) and Table 15 (groundwater).

For the 2012 investigation, the RPD for two parameters, boron (hot water soluble) and mercury exceeded the laboratory acceptance value. For boron, the RPD was 0.42 compared to an acceptance level of 0.4. The measured concentrations were relatively low and small changes in concentrations can result in a large RPD. The larger than acceptable difference does not change the conclusion that boron is not a contaminant of concern.

For mercury, the calculated RPD was 0.53 compared to an acceptance level of 0.3. The concentration of mercury in the initial sample was less than the standard and that in the duplicate exceeded the standard. Mercury was measured in four other samples, with an exceedance noted at one of these locations (MW-7 SS2). Based on the duplicate analysis, the value of 0.22 ug/g measured at MW-8 SS2 may also be indicative of a concentration exceeding the standard of 0.27 ug/g. The mercury appears to be associated with elevated values of lead and may be a residue from the source site of the fill at the Subject Property. It is therefore concluded the mercury should be considered as exceeding at MW-7 SS2.

For the 2013 investigation, the concentrations of many of the measured parameters in the duplicate samples did not correlate well. However, the maximum concentrations of the duplicate pair were at least one third of the applicable standard and the variability would not affect the conclusion that soil concentrations did not exceed the applicable standards. The data for the other two boreholes also indicated low concentrations, supporting the conclusion that soil concentrations at the site did not exceed the applicable standards.

For groundwater, a field duplicates were submitted for the analysed parameters and a trip blank was submitted for analysis of VOCs for each sampling event. For most metals, PHCs and VOCs, contaminants were not present at measurable concentrations and therefore RPDs could not be calculated. Where metals were present at sufficient concentrations (e.g., three times higher than the reporting limit), the RPDs (Table 15) ranged from 0 to 0.23, showing good reproducibility.

In the 2013 sampling program, the value for F3 measured at MW-9B did not correlate with the duplicate sample. The concentration of the initial sample was higher than the standard and the concentration of the duplicate was lower than the standard. Groundwater was resampled in November 2013, with similar, unacceptable results. Groundwater was resampled again in December 2013 at wells MW-9B and MW-10, two wells where F3 had been measured in previous events. The results were reproducible and confirmed that F3 did not exceed the groundwater standard.

The results of quality assurance checks completed through Maxxam, Exova and MMM indicate that there are minor variances in the results of analysis, however, these variances do not affect the conclusions of the absence or presence of contamination when average values are used for comparison to MOE standards.

Based on the results of the quality assurance checks, the data presented in this Phase Two ESA meet the data quality objectives of interpreting the representative concentrations of contaminants at the Subject Property and are considered to be acceptable for characterization of the environmental quality of the Subject Property.

## 5.10 Phase Two Conceptual Site Model

The Phase One ESA CSM presented in Section 3.3 provides a description and assessment of areas where PCAs have occurred, areas of potential environmental concern and subsurface structures or utilities that may affect contaminant distribution and transport. This Phase Two CSM provides updated information based on the information and activities as documented in this report.

### Potentially Contaminating Activities and Areas of Potential Environmental Concern

The Phase One ESA completed by MMM identified PCAs on the Subject Property, such as the import and placement of fill material of unknown origin and quality, the former operation of a commercial gas station and vehicle service centre, including underground storage tanks and hoists, and application of de-icing materials during the winter months. An offsite PCA was also identified as the use of salt to control ice and snow on Somerset Street. The Phase Two ESA SAP was developed to investigate the potential environmental concerns identified in the Phase One ESA CSM and included a requirement to sample for contaminants of potential concern that included metals, inorganic parameters, PAHs, PHCs, VOCs and PCBs. Based on the identification of the PCAs, the APECs summarized in Table 16 were identified and investigated on the Subject Property. The location of each APEC is illustrated on Figure 2.

### Subsurface Structures and Utilities

As discussed in Section 3.3, the utilities that were part of the former gasoline station operations were likely removed during decommissioning of the site, however some utilities may have been abandoned in place. The residence at 13 Lebreton Street North is serviced for natural gas heating, electricity, and possibly cable. These utilities are in the shallow soil at the west and north limits of the residential property. It is interpreted that the near-surface overburden geology in the area, both at the Subject Property and on adjacent lands, has been greatly modified through urbanization, including construction of roads, buildings, and underground utilities, all of which has involved excavation of native soils and replacement with backfilled materials.

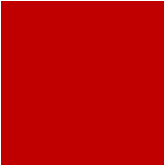
The presence of former and existing utility trenches is not expected to affect the contaminant distribution, because of the reworked nature of soil on the Subject Property.

### Physical Setting

Data collected during the Phase Two ESA support the following assessment which comprises the Phase Two ESA CSM for the Subject Property:

- ◆ Surrounding land uses (Figures 1 and 2) include mixed residential, commercial and institutional uses, including residential to the east, commercial to the north and west and a church to the south. Somerset Street West bounds the site to the north and Lebreton Street North bounds the site to the west.
- ◆ No water bodies or drinking water wells are within the study area.
- ◆ Sections 43 and 43.1 of Ontario Regulation 153/04 do not apply to the Subject Property, as it is neither an environmentally sensitive area nor a shallow soil property.
- ◆ Based on data obtained in this site investigation, limestone bedrock of the Collingwood formation ranged from approximately 1.83 to 3.96 m bgs. Overburden soil (Figures 3A, 3B and 3C) consisted of well graded sand, gravely sand or sand and gravel that generally





appeared to be reworked fill, with loose to firm density. Sand interpreted to be native deposits was observed in three boreholes at approximately 1.5 m bgs.

- ◆ Site soil conditions provide moderate to high permeability for contaminant migration.
- ◆ Groundwater was encountered between 2.5 and 3.88 m bgs in the overburden aquifer and at 5 m bgs in the bedrock aquifer.
- ◆ Groundwater monitored in the bedrock was only slightly lower in elevation than the corresponding overburden groundwater, with a vertical gradient ranging from 0.03 to 0.35 m. The horizontal gradient was calculated to be 0.04.
- ◆ Bedrock topography (Figure 6) is suspected of strongly influencing groundwater flow (Figure 4) at the Subject Property. Shallow groundwater likely follows bedrock valleys and/or utility corridors, and ultimately discharges to the Ottawa River, although shallow groundwater may also flow into or out of the bedrock aquifer, depending on where highly weathered bedrock, with preferred groundwater flow pathways, may be present. Based on available site data, groundwater flow is to the southwest. Hydraulic conductivity was not measured at the Subject Property but based on grain size analysis the calculated hydraulic conductivity by the Hazen approximation ranges from  $3.8 \times 10^{-5}$  m/s to  $3.0 \times 10^{-4}$  m/s (Freeze and Cherry, 1979).
- ◆ Groundwater in the Subject Property is non-potable.
- ◆ The limestone bedrock is expected to reduce the vertical migration of contaminants.

### **Buildings and Structures**

The former gas station building on the north part of the Subject Property was removed circa 2000. A parking lot kiosk is present on the site. A residence, with a single basement level is present on the south part of the property.

A retaining wall separates the parking lot from the residence at the Subject Property.

A multi-storey building with an underground parking structure extending into bedrock is planned for the Subject Property. The building footprint will extend to the full property boundaries.

### **Environmentally Sensitive Areas**


The Subject Property is located more than 1 km from the nearest water body, the Ottawa River. The ground surface is covered with asphalt and slopes sharply down on the west portion of the site.

The Subject Property is located in an urban setting that has been developed for over 100 years. No conditions were identified in the ESA that would apply to Section 41 (environmentally sensitive areas) and Section 43 (shallow soil property or lands within 30 m of a water body) of Ontario Regulation 153/04.

One sample with elevated pH (9.06) was recovered at MW-8 SS2 from deeper than 1.2 m bgs. Although this value exceeds the upper acceptable pH in soil in the top 1.5 m bgs, it is not considered indicative of general site conditions and therefore standards for sensitive land use were not considered to apply to this ESA.

### **Imported Soil**

The Phase One ESA identified fill placed on the Subject Property during decommissioning and remediation of the former gas station operation. Details of the removal of soils were not



available. Of this fill, the concentrations of lead, mercury, zinc exceed the MOE standards established in 2011. The values of EC and SAR also exceed acceptable limits for residential property uses. Residual PHCs were also observed at one sampling location. Construction of the proposed building will remove this soil from the Subject Property as part of redevelopment.

### **Distribution and Extent of Soil and Groundwater Impacts**

Some contaminants remain in soil and groundwater at the Subject Property. The distribution of contaminants in soil and groundwater is shown on Figure 5A, 5B, and 5C. Although the concentrations of the contaminants (lead, mercury, zinc, EC, SAR and PHCs) in soil exceed the MOE generic standards (Table 4 and Table 6), they are present at relatively low concentrations and do not appear in groundwater. Therefore it is assumed that they do not present a potential for migration from the site.

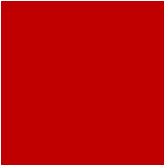
The groundwater across the Subject Property has been impacted by the historical and on-going use of salt for ice control, both onsite and offsite along Somerset Street West and Lebreton Street North. Per section 48(3) of O. Reg. 153/04, the concentrations of sodium and chloride are deemed not to exceed the Table 3 Standard, as the offsite application of road salt has contributed significantly to elevated levels of sodium and chloride on the Subject Property.

Exceedances of silver were present in four monitoring wells (MW-1, MW-2, MW-4 and MW-5A) at concentrations ranging from 1.6 ug/L (minor exceedance of the SCS of 1.5 ug/L) to 5.0 ug/L. These exceedances were within groundwater located in the northwest quadrant of the Subject Property with delineation confirmed vertically through the sample at ME-5C and laterally in samples from MW-9A and MW-9B and MW-10. The presence of silver in groundwater cannot be attributed to any known land uses in the study area but it appears to have not migrated to the south part of the Subject Property. The silver is dissolved in groundwater and will migrate in the direction of groundwater flow, subject to influences such as diffusion and adherence to soil. The absence of elevated concentrations of silver in soil indicated that this latter behaviour will not result in contamination of soil. The disturbance of site soil through modification to site conditions has resulted in no identifiable preferential pathways present on site. Minor changes in the elevation of groundwater due to climatic effects are also not likely to affect contaminant distribution.

The judgemental approach used to locate boreholes and select soil and groundwater samples is considered sufficient for the identification of areas of contamination on the Subject Property and identification of maximum concentrations of contaminants in the media investigated. We recommend a risk assessment to consider whether the maximum concentration of silver presents a hazard for the future users of the developed site. This CSM would be modified after remediation and the risk assessment and prior to the filing of a RSC.

### **Human and Ecological Receptors and Exposure Pathways**

Current occupants of the Subject Property include the operator of the parking lot, customers who use the parking lot and pedestrians who may traverse the Subject Property and residents in the building at 13 Lebreton Street North. After redevelopment, the occupants will include residents and visitors to the building and people who may work in the building. Based on the non-volatile properties of the contaminants of concern, exposure pathways would be limited to contact with the soil and groundwater. The occupants and visitors to the Subject Property would not be subject to this exposure pathway.



There are no ecological receptors at the property currently and none are anticipated after development.

### Remedial Actions

Remedial actions will be required to remove contaminants of concern in soil. This is anticipated to be conducted in conjunction with building construction. A risk assessment is recommended to assess the impacts of silver in groundwater. The remedial actions and risk assessment must be conducted prior to filing a RSC.

## 6.0 CONCLUSIONS

A portion of the Subject Property has been used as a gasoline and auto service station for over 80 years and this past use has included PCAs that have resulted in APECs on the site (Table 16). The Phase Two ESA was developed and implemented to assess the identified areas of concern through sampling of soil and groundwater for the contaminants of potential concern.

Based on available environmental reports, remediation was conducted at the time of the decommissioning of the gas station. However, when soil quality was compared to standards revised by the MOE in 2011, contaminants are present in the fill material. The contaminants of concern identified in soil through the sampling and analysis program include EC, SAR, lead, mercury, zinc and PHCs fractions of F3 and F4. Although the concentrations of these contaminants exceed the MOECC generic standards, they are present at relatively low concentrations and do not appear in groundwater. Therefore it is assumed that they do not present a potential for migration from the site. No evidence of impacts from the former gas station was observed on the residential property at 13 Lebreton Street North.

**Table 16: Summary of Areas of Potential Environmental Concern**

Area of Potential Environmental Concern (APEC)	Location of APEC on Phase One Property	Potential Contaminating Activity (PCA)	Location of PCA (onsite or offsite)	Contaminants of Potential Environmental Concern	Media Potentially Impacted (Groundwater, soil and/or sediment)
APEC-1	Northwest (former UST circa 1956)	(28) Gasoline and Associated Product Storage in Fixed Tanks	Onsite	PHCs, VOCs (MTBE), Metals (lead)	Soil and Groundwater
APEC-2	North central (former pump island / piping)	(28) Gasoline and Associated Product Storage in Fixed Tanks	Onsite	PHCs, VOCs (MTBE), Metals (lead)	Soil and Groundwater
APEC-3	Northeast (former USTs post 1956)	(28) Gasoline and Associated Product Storage in Fixed Tanks	Onsite	PHCs, VOCs (MTBE), Metals (lead)	Soil and Groundwater

Area of Potential Environmental Concern (APEC)	Location of APEC on Phase One Property	Potential Contaminating Activity (PCA)	Location of PCA (onsite or offsite)	Contaminants of Potential Environmental Concern	Media Potentially Impacted (Groundwater, soil and/or sediment)
APEC-4	Southeast (former waste oil UST)	(10) Commercial autobody shops	Onsite	Metals, PCBs, PHCs, PAHs, VOCs	Soil and Groundwater
APEC-5	South central (Former underground hoist)	(10) Commercial autobody shops	Onsite	Metals, PCBs, PHCs, VOCs	Soil
APEC-6	Southwest (former fuel oil UST)	(28) Gasoline and Associated Product Storage in Fixed Tanks	Onsite	PHCs, Metals	Soil and Groundwater
APEC-7	South central (residence adjacent to former gas station)	(28) Gasoline and Associated Product Storage in Fixed Tanks	Onsite	PHCs, Metals	Soil and Groundwater
APEC-8 A:	Former UST	(30) Importation of Fill Material of Unknown Quality	Onsite	Metals, Inorganics, PAHs	Soil
APEC-8 B:	Former pump island				
APEC-8 C:	Former UST				
APEC-8 D:	Former waste oil UST				
APEC-8 E:	Former fuel oil UST				
APEC-9	Entire site	(Other) Use of salt for the management of snow and ice in the parking lot and on adjacent roads	Onsite and offsite	Inorganic parameters	Soil and Groundwater

It is recommended that impacts in the soil at the 770 Somerset Street portion of the property be removed as part of the construction for the redevelopment of the Subject Property.

The groundwater across the Subject Property has been impacted by silver at four wells. We recommend a risk assessment to consider whether the maximum concentration of silver presents a hazard for the future users of the developed site.

The removal of contaminated soil and a risk assessment to assess the groundwater contamination will be required prior to filing a RSC. These activities can be conducted during the site planning stages and should not interfere with the planning schedule.

## 7.0 QUALIFICATIONS OF ASSESSORS

### 7.1 MMM Group Limited

For six decades, MMM Group Limited has offered comprehensive consulting services in design, planning, project management, contract administration and construction inspection services in the environmental engineering, municipal engineering, urban development and recreational development fields. The firm employs approximately 2,000 professional, technical and administrative staff, in offices across Canada. The Environmental Management Department specializes in conducting Phase One, Two and Three Environmental Site Assessments, hazardous materials assessment, removal of underground storage tanks, groundwater investigations and site remediation.

### 7.2 Qualified Person and Technical Support

The Phase Two ESA was supervised by Carolyn I. Adams, M.A.Sc., P.Eng., Department Manager and an Associate with MMM. She is a chemical engineer with 25 years of experience and has conducted hundreds of Phase One and Phase Two ESAs, including hazardous materials surveys at industrial, commercial and residential properties. Ms. Adams is a registered Qualified Person under Ontario Regulation 153/04, as amended. She is familiar with operating practices and production materials that may have an adverse impact on the environment and had conducted remedial actions at contaminated sites to address these impacts. Her involvement with the Phase Two ESA allows her to arrive at the conclusions presented in this report.

The field work and technical report preparation was completed by Peter van Driel, P.Geo., an Environmental Geoscientist with MMM and Allison Read, a geoscientist in training with MMM. Mr. van Driel graduated from the University of Waterloo with a degree in Earth Sciences, and a Master of Sciences in hydrogeology. Since this time, Mr. van Driel has been actively employed in the hydrogeological consulting industry, specializing in groundwater management, monitoring, and remediation. Ms. Read graduated from Queen's University with a degree in Geology and has contributed to soil and groundwater assessments at MMM for over a year.

### 7.3 Signatures

This Phase Two ESA was conducted by the undersigned Qualified Person in accordance with the requirements of Ontario Regulation 153/04, as amended. Remediation of soil and assessment of the risk of groundwater contamination through a modified generic risk assessment will be required prior to the filing of a RSC. She authorizes the issuance of this report on behalf of:

#### MMM GROUP LIMITED



Carolyn Adams, M.A.Sc., P.Eng., QP<sub>ESA</sub>,  
Manager, Environmental Management



## 8.0 STANDARD LIMITATIONS

This report has been prepared for use by 442915 Ontario Ltd. and DCR Phoenix Group in accordance with generally accepted environmental investigation practices at the time of the assessment within the scope required by Ontario Regulation 153/04 for the mandatory submission of a Record of Site Condition. Because this report may be used in municipal review for a site plan application, we extend reliance to the City of Ottawa. Standard limitations are presented in Appendix B as they apply to this report and the use of the report by the noted parties.

## 9.0 REFERENCES

Armstrong, D.K. and Dodge, J.E.P. 2007. *Paleozoic geology of southern Ontario; Ontario Geological Survey, Miscellaneous Release – Data 219.*

Chapman, L.J. and Putman, D.F. 2007. *Physiography of southern Ontario; Ontario Geological Survey, Miscellaneous Release – Data 228.*

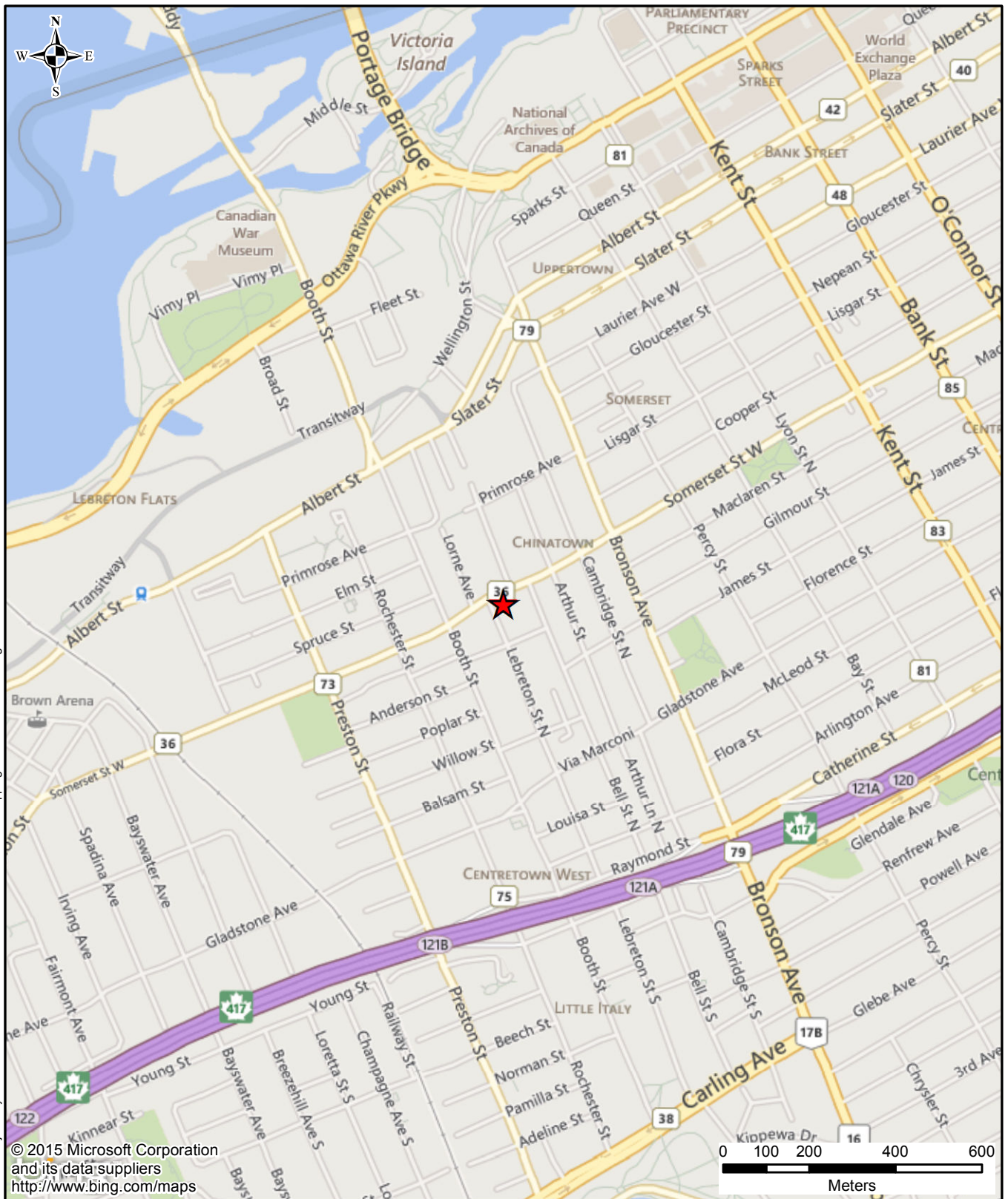
Freeze and Cherry, 1979. *Groundwater.* New Jersey: Prentice Hall Inc.

Ontario Geological Survey. 2010. *Surficial geology of southern Ontario; Ontario Geological Survey, Miscellaneous Release – Data 128 – Revised.*





J:\1442 Projects by Job Number\2012\14-12815-001 Phoenix Homes\50 Mapping\MXD\Phase II ESA\Figure 1 Site Location.mxd



## Legend



Site Location

Client:

**DCR Phoenix Homes**

Title:

**Site Location**

Prepared by:



**MMM GROUP**

14-12815-001-PH2

Scale as Shown

Review: CIA

Date: March 2015

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**Figure: 1**



Somerset Street West

Offsite PCA - Use of Salt to control snow and ice.  
For Onsite PCAs, Refer to Table 16.

APEC	Description
APEC-1	Former UST nest (1956)
APEC-2	Former pump island and piping for gasoline retail outlet
APEC-3	Former gasoline USTs (Post-1956)
APEC-4	Former waste oil UST
APEC-5	Former underground hoist in automotive shop
APEC-6	Former fuel oil UST
APEC-7	Adjacent to former gas station
APEC-8A	Importation of fill material of unknown quality (during remediation)
APEC-8B	
APEC-8C	
APEC-8D	
APEC-8E	
APEC-9	Use of salt to control snow and ice

Lebreton Street North

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0 2.5 5 10 15  
Metres

#### Legend

- Bedrock Monitoring Well (exp, 2013)
- Overburden Monitoring Well (exp, 2013)
- Overburden Monitoring Well (MMM, 2012)
- Deep Bedrock Monitoring Well (MMM, 2013)
- Shallow Bedrock Monitoring Well (MMM, 2013)
- Deep Bedrock Monitoring Well (MMM, 2014)
- Test Pit (MMM, 2013)
- APEC-1 Areas of Potential Environmental Concern
- Cross Section
- Site Boundary

Client:

**DCR Phoenix Homes**

Title:

**Monitoring Locations &  
Areas of Potential Environmental Concern**

Prepared by:

**MMM GROUP**

14-12815-001-PH2

Scale as Shown

Review: CIA

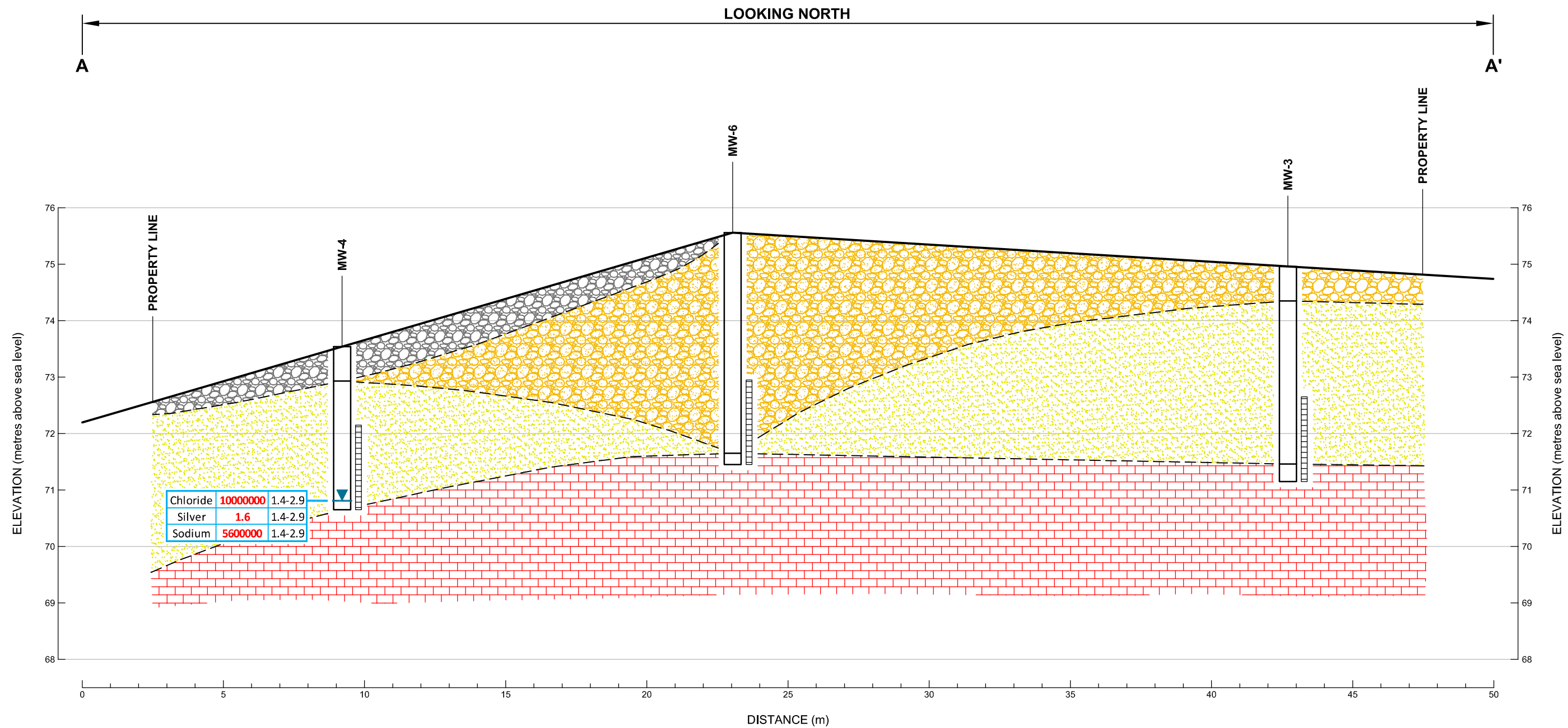
Date: May 2015

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**Figure: 2**



FIGURE Hydrogeologic Cross-Sections.dwg - FIGURE 3A - Hydrogeologic Cross-Section A-A' S:\14-421\1412815-001-PH2001-REPORT APRIL 2015, Apr 02, 2015 - 10:21 am



LEGEND



Silver	1.55	1.8-3.4
Parameter		Screen
Concentration (ug/L)		Interval
		(mbgs)

Parameter	2011 Standard
Chloride	23000000
Silver	1.5
Sodium	2300000

NOTE: RED BOLDED CONCENTRATIONS EXCEED THE APPLICABLE 2011 STANDARDS.

CLIENT

DCR PHOENIX HOMES

TITLE

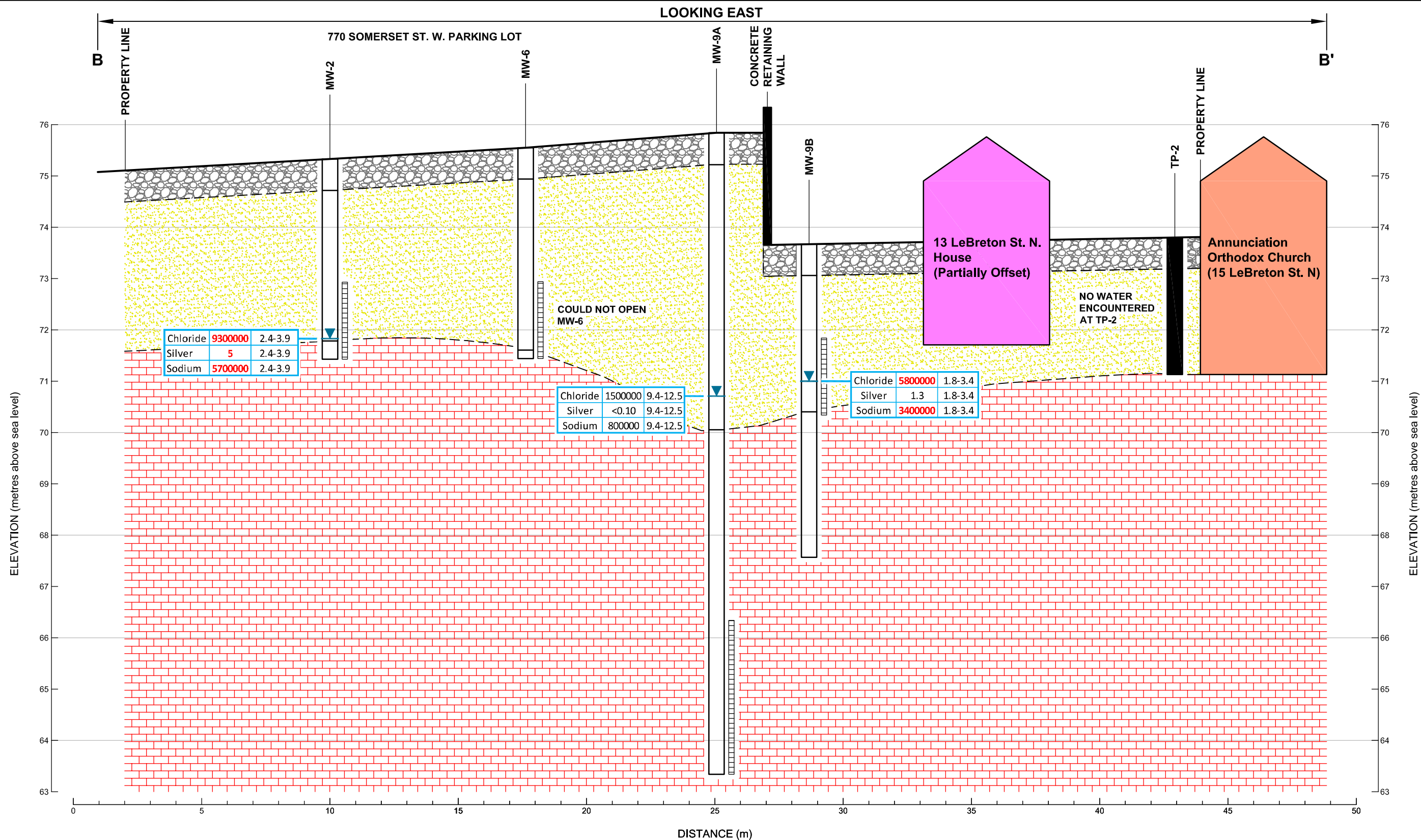
HYDROGEOLOGIC CROSS-SECTION A-A'

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**MMM GROUP**

Checked A.R.	Drawn AutoCAD/B.K.B.
Date APRIL 2015	Proj. No. 14-12815-001-PH2
Scale VERT= 1:75 HORIZ.= 1:150	Figure No. <b>3A</b> Gr.No. 001

FIGURE Hydrogeologic Cross-Sections.dwg - FIGURE 3B - Hydrogeologic Cross-Section B-B' S:\14-42\1412815-001-PH2001-REPORT APRIL 2015 Apr 02, 2015 - 10:22am



LEGEND



Silver	1.55	1.8-3.4
Parameter		Screen Interval (mbgs)
Concentration (ug/L)		

Parameter	2011 Standard
Chloride	2300000
Silver	1.5
Sodium	2300000

NOTE: RED BOLDED CONCENTRATIONS EXCEED THE APPLICABLE 2011 STANDARDS.

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TITLE

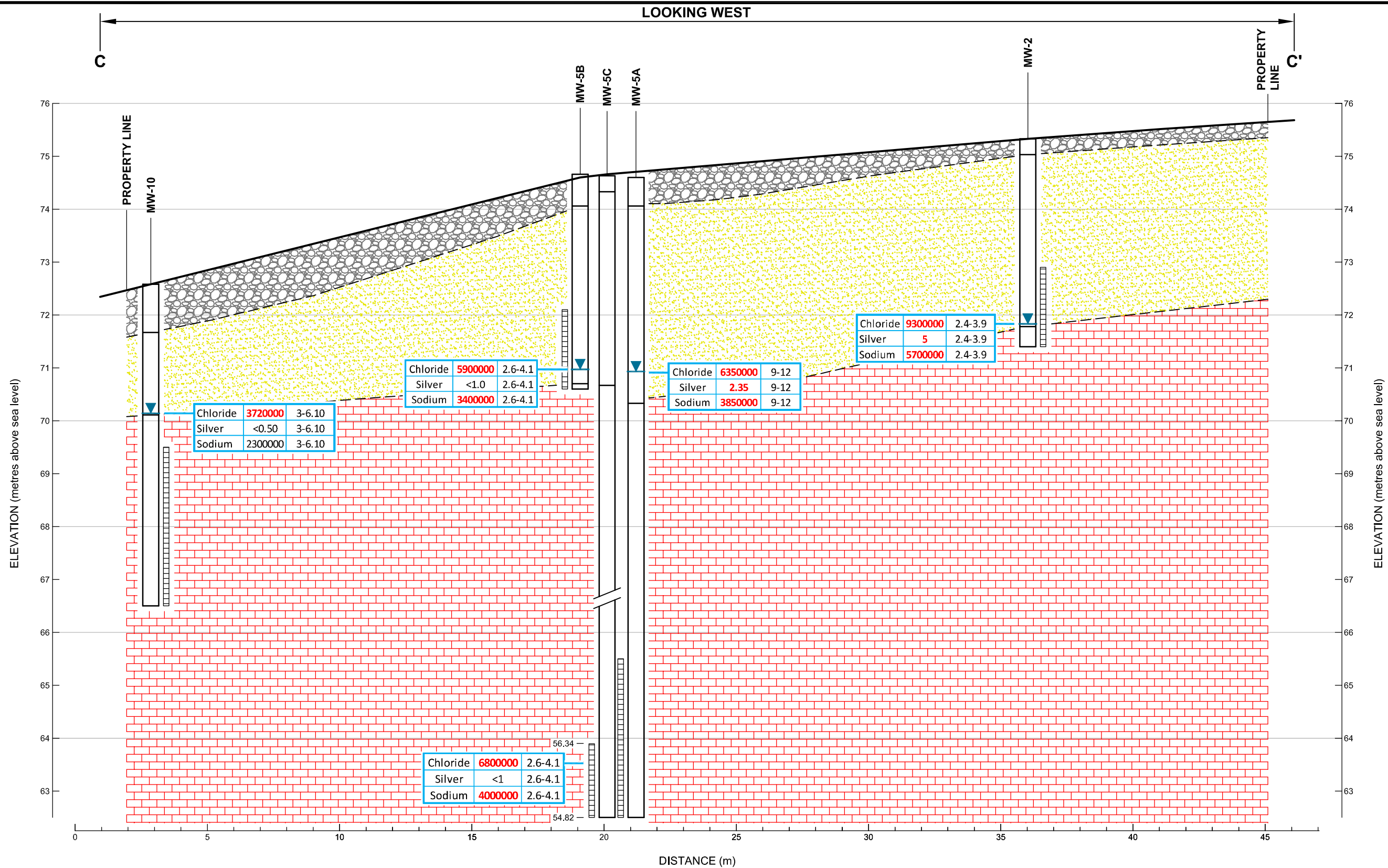
HYDROGEOLOGIC CROSS-SECTION B-B'

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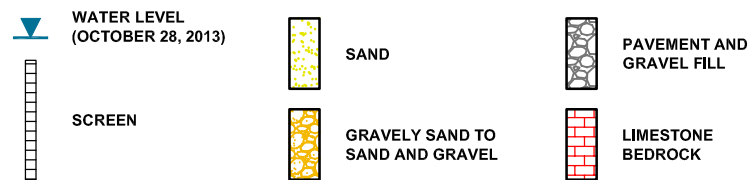
**MMM GROUP**

Checked	A.R.	Drawn	AutoCAD/B.K.B.
Date	APRIL 2015	Proj. No.	14-12815-001-PH2
Scale	VERT= 1:75 HORIZ.= 1:150	Figure No.	3B
		Gr.No.	001

FIGURE Hydrogeologic Cross-Sections.dwg - FIGURE 3C - Hydrogeologic Cross-Section C-C' S:\14-42\1412815-001-PH2\002-REPORT MAY 2015 May 14, 2015 - 10:56am



LEGEND



Silver	1.55	1.8-3.4
Parameter		Screen Interval (mbgs)
Concentration (ug/L)		

Parameter	2011 Standard
Chloride	2300000
Silver	1.5
Sodium	2300000

NOTE: RED BOLD CONCENTRATIONS EXCEED THE APPLICABLE 2011 STANDARDS.

CLIENT

DCR PHOENIX HOMES

TITLE

HYDROGEOLOGIC CROSS-SECTION C-C'

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Date APRIL 2015	Proj. No. 14-12815-001-PH2
Scale VERT= 1:75 HORIZ.= 1:150	Figure No. <b>3C</b> Gr.No. 001



J:\1442 Projects by Job Number\2012\14-12815-001 Phoenix Homes\50 Mapping\MXD\Phase II ESA\Figure 4 CW Elevations and Flow.mxd



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### Legend

- |  |   |  |                            |
|--|---|--|----------------------------|
|  | Bedrock Monitoring Well (exp, 2013)         |  | Groundwater Contours       |
|  | Overburden Monitoring Well (exp, 2013)      |  | Site Boundary              |
|  | Overburden Monitoring Well (MMM, 2012)      |  | Groundwater Flow Direction |
|  | Deep Bedrock Monitoring Well (MMM, 2013)    |  |                            |
|  | Shallow Bedrock Monitoring Well (MMM, 2013) |  |                            |
|  | Deep Bedrock Monitoring Well (MMM, 2014)    |  |                            |
|  | Test Pit (MMM, 2013)                        |  |                            |

Client:

**DCR Phoenix Homes**

Title:

**Site Plan Showing Direction  
of Groundwater Flow**

Prepared by:

**MMM GROUP**

14-12815-001-PH2

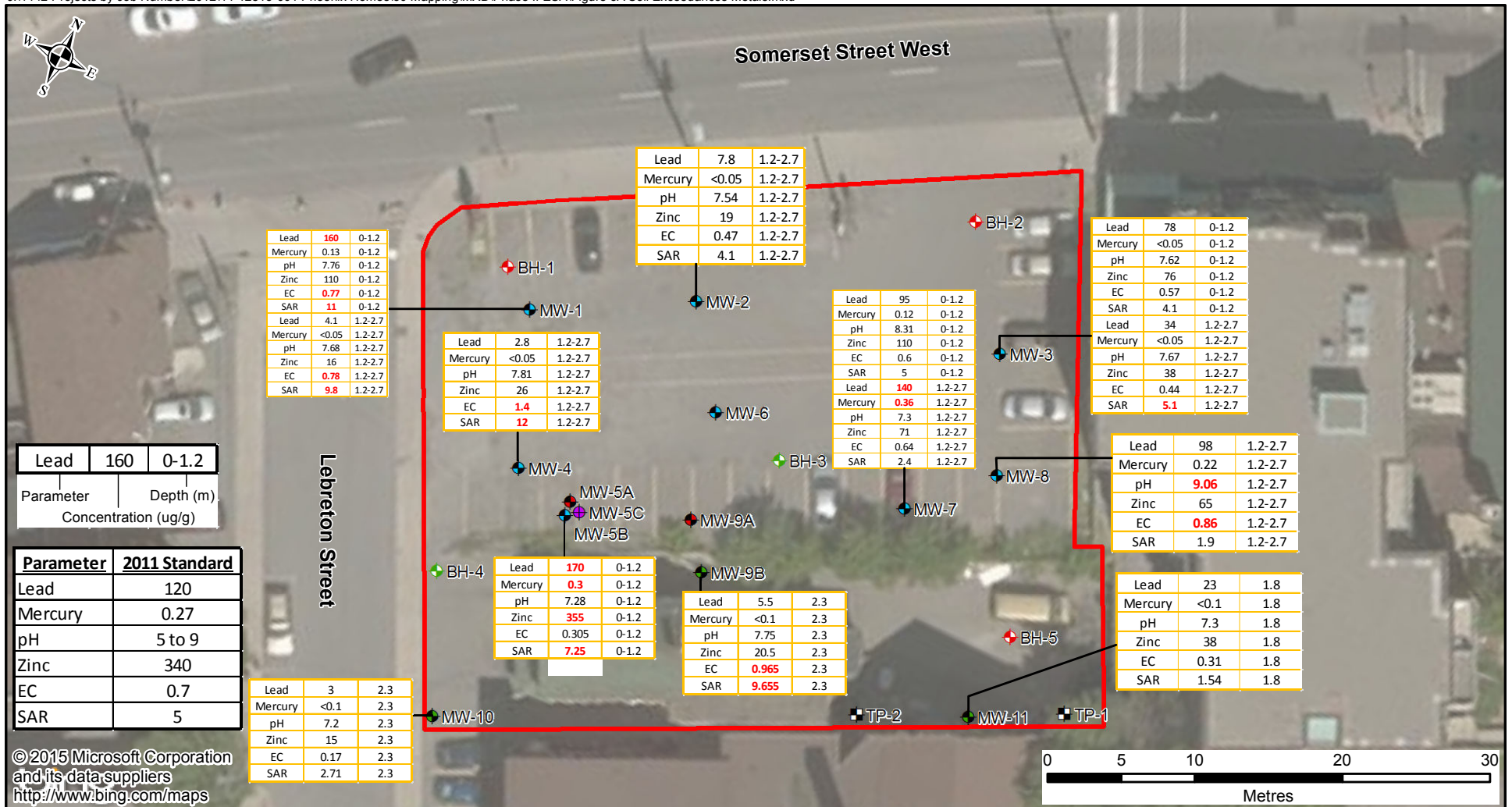
Scale as Shown

Review: CIA

Date: March 2015

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**Figure: 4**



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## Legend

- Bedrock Monitoring Well (exp, 2013)
- Overburden Monitoring Well (exp, 2013)
- Overburden Monitoring Well (MMM, 2012)
- Deep Bedrock Monitoring Well (MMM, 2013)
- Shallow Bedrock Monitoring Well (MMM, 2013)
- Deep Bedrock Monitoring Well (MMM, 2014)
- Test Pit (MMM, 2013)
- Site Boundary

Note: Red bolded concentrations exceed the applicable 2011 standards.

Client:

**DCR Phoenix Homes**

Title:

**Soil Impacts - Metals and Inorganics**

Prepared by:



14-12815-001-PH2

Scale as Shown

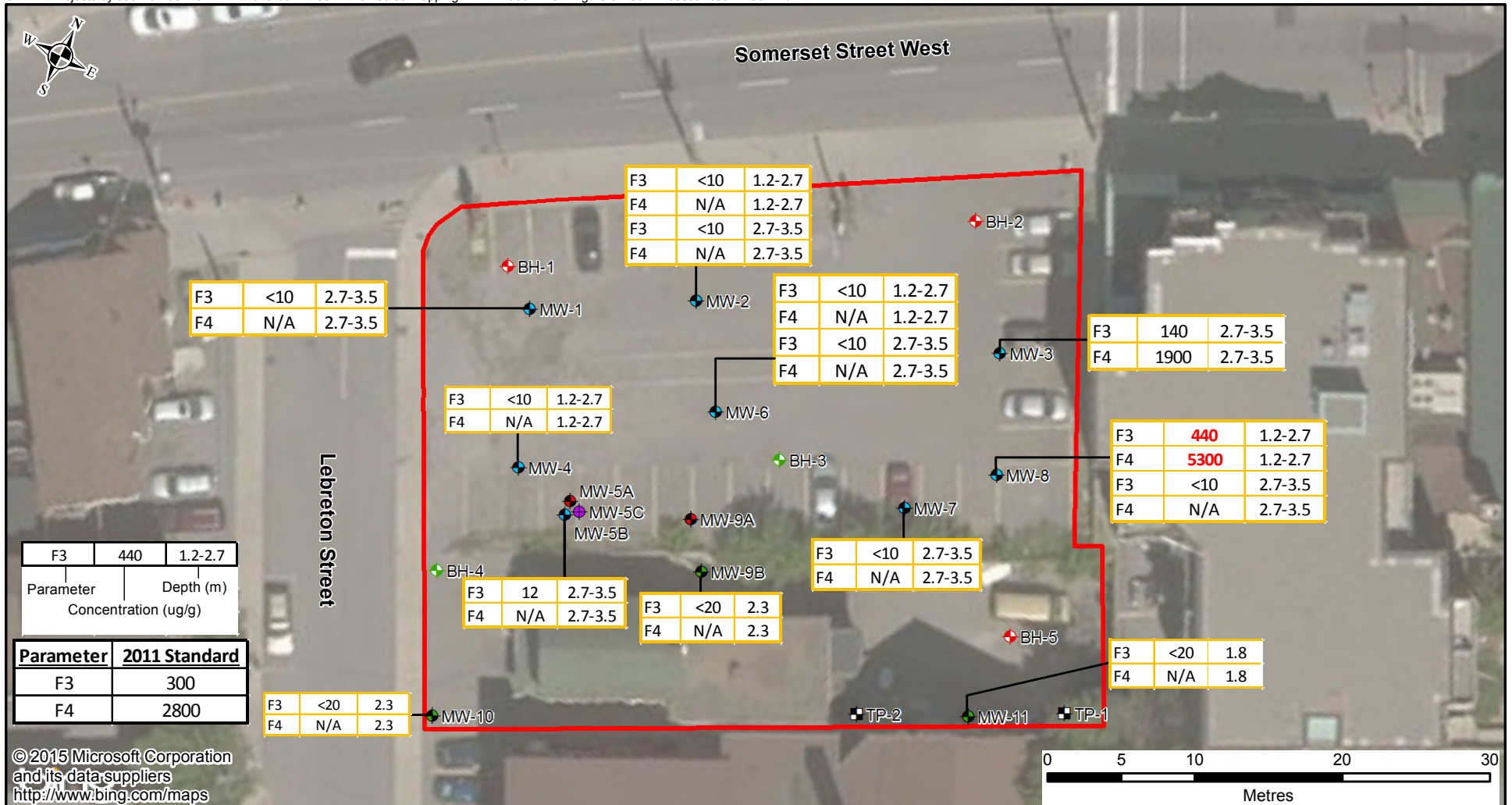
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**Figure: 5A**





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## Legend

- Bedrock Monitoring Well (exp, 2013)
- Overburden Monitoring Well (exp, 2013)
- Overburden Monitoring Well (MMM, 2012)
- Deep Bedrock Monitoring Well (MMM, 2013)
- Shallow Bedrock Monitoring Well (MMM, 2013)
- Deep Bedrock Monitoring Well (MMM, 2014)
- Test Pit (MMM, 2013)
- Site Boundary

Note: Red bolded concentrations exceed the applicable 2011 standards.

Client:

**DCR Phoenix Homes**

Title:

**Soil Impacts - PHCs**

Prepared by:

**MMM GROUP**

14-12815-001-PH2

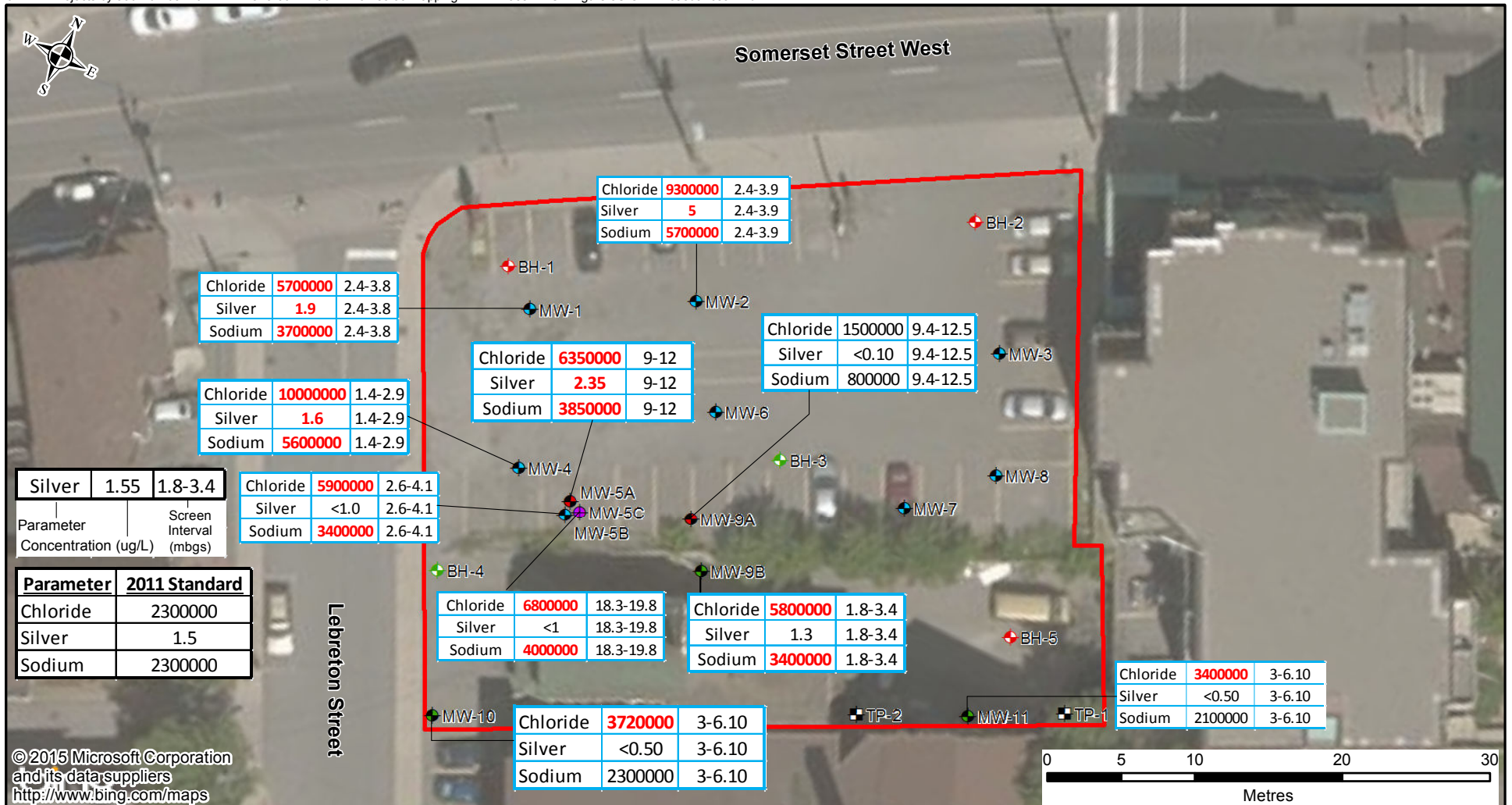
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Review: CIA

Date: March 2015

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**Figure: 5B**




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## Legend

- ◆ Bedrock Monitoring Well (exp, 2013)
- ◆ Overburden Monitoring Well (exp, 2013)
- ◆ Overburden Monitoring Well (MMM, 2012)
- ◆ Deep Bedrock Monitoring Well (MMM, 2013)
- ◆ Shallow Bedrock Monitoring Well (MMM, 2013)
- ◆ Deep Bedrock Monitoring Well (MMM, 2014)
- ◆ Test Pit (MMM, 2013)
- Site Boundary

Note: Red bolded concentrations exceed the applicable 2011 standards.

Client:	<b>DCR Phoenix Homes</b>	
Title:	<b>Groundwater Impacts - Metals and Inorganics</b>	
Prepared by:		
14-12815-001-PH2	Scale as Shown	Review: CIA
Date: March 2015	<b>Figure: 5C</b>	
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J:\1442 Projects by Job Number\2012\14-12815-001 Phoenix Homes\50 Mapping\MXD\Phase II ESA\Figure 6 Surficial Bedrock Elevations.mxd



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# PHOTOGRAPHS



Photograph 1. Subject Property looking east, showing retaining wall and grade difference.





Table 4: Summary of Analytical Results  
for Metals and Inorganics in Soil  
770 Somerset Street West and 13 LeBreton Street North, Ottawa, ON

Sample ID Depth (m) Laboratory work order  Sampling Date	MOE Table 3 RPI Land Use	REPORTING LIMIT	Units	MW-1 SS1 0-1.2 B2H6839 8-Nov-2012	MW-1 SS2 1.2-2.7 B2H6839 8-Nov-2012	MW-2 SS2 1.2-2.7 B2H6839 8-Nov-2012	MW 3 SS1 0-1.2 B2H6839 8-Nov-2012	MW-3 SS2 1.2-2.7 B2H6839 8-Nov-2012	MW 4 SS2 1.2-2.7 B2H6839 9-Nov-2012	MW-5 SS1 0-1.2 B2H6839 AVERAGE 9-Nov-2012	MW-7 SS1 0-1.2 B2H6839 8-Nov-2012	MW-7 SS2 1.2-2.7 B2H6839 8-Nov-2012	MW-8 SS2 1.2-2.7 B2H6839 8-Nov-2012	MW9B-2 2.3 1323765 AVERAGE 23-Oct-2013	MW10-2 2.3 1323765 23-Oct-2013	MW11-2 1.8 1323765 23-Oct-2013
Metals and Inorganics																
Antimony	7.5	0.2\1	ug/g	1.9	<0.2	<0.2	0.36	<0.2	<0.2	1.5	0.77	1.6	0.77	<1	<1	<1
Arsenic	18	1	ug/g	4.4	1.6	1.4	2	1.6	1.2	7.15	3.6	4	4.2	1.5	<1	1
Barium	390	0.5\1	ug/g	160	63	32	42	29	51	160	110	96	80	42	20	57
Beryllium	4	0.2\1	ug/g	0.25	0.22	<0.2	<0.2	<0.2	<0.2	0.265	0.24	<0.2	0.2	<1	<1	<1
Boron (Hot Water Soluble)	1.5	0.05\0.5	ug/g	0.55	0.25	0.52	0.28	0.27	0.11	0.43	0.51	0.74	0.68	<0.5	<0.5	<0.5
Cadmium	1.2	0.1\0.5	ug/g	0.43	<0.1	0.1	0.12	<0.1	<0.1	0.495	0.3	0.15	0.18	<0.5	<0.5	<0.5
Chromium	160	1	ug/g	11	10	8.4	5.6	6.8	8.1	13	11	9.8	10	16	10	25
Chromium VI	8	0.2\0.5	ug/g	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5
Cobalt	22	0.1\1	ug/g	3.9	4.5	3.6	3.4	3.6	3.4	4.3	4.1	2.8	3.5	5.5	3	6
Copper	140	0.5\1	ug/g	63	17	10	15	11	52	87	29	20	20	20	8	20
Lead	120	1	ug/g	160	4.1	7.8	78	34	2.8	170	95	140	98	5.5	3	23
Mercury	0.27	0.05\0.1	ug/g	0.13	<0.05	<0.05	<0.05	<0.05	<0.05	0.3	0.12	0.36	0.22	<0.1	<0.1	<0.1
Molybdenum	6.9	0.5\1	ug/g	0.78	<0.5	<0.5	0.59	<0.5	<0.5	0.87	0.6	0.6	1	1	<1	<1
Nickel	100	0.5\1	ug/g	12	8.6	8	8	7.9	6.3	50	12	7.5	8.9	14	7	16
Selenium	2.4	0.5\1	ug/g	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1
Silver	20	0.5\0.2	ug/g	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.2	<0.2
Thallium	1	0.2\1	ug/g	0.099	0.083	0.054	0.084	0.064	0.059	0.2	0.09	0.054	0.095	<1	<1	<1
Vanadium	86	5\2	ug/g	17	18	11	9.4	11	15	15	15	13	14	24	13	30
Zinc	340	5\2	ug/g	110	16	19	76	38	26	355	110	71	65	20.5	15	38
pH (pH Units)	5 to 9	2	pH	7.76	7.68	7.54	7.62	7.67	7.81	7.28	8.31	7.3	9.06	7.75	7.2	7.3
Electrical Conductivity (ms/cm)	0.7	0.002\0.05	mS/cm	0.77	0.78	0.47	0.57	0.44	1.4	0.305	0.6	0.64	0.86	0.965	0.17	0.31
Sodium Absorption Ratio	5	0.01	none	11	9.8	4.1	4.1	5.1	12	7.25	5	2.4	1.9	9.655	2.71	1.54
Cyanide, Free	0.051	0.01\0.03	ug/g	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.03	<0.03	<0.03
Boron (Total)	120	5\10	ug/g	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	15	<10	10
Uranium	23	0.05\0.5	ug/g	0.38	0.4	0.28	0.21	0.32	0.4	0.34	0.35	0.36	0.32	<0.5	<0.5	<0.5

Notes:

MOE Table 3: Ontario Ministry of the Environment, "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, " April 2011. Generic Site Condition Standards for coarse-textured soils in a Non-Potable Ground Water Condition for Residential, Parkland, Institutional (RPI) land use.

**AVERAGE** indicates the calculated average of the sample and its duplicate for comparison to the standard.

100 Exceeds MOE Standard.

**Table 5: Summary of Analytical Results  
for PAHs in Soil**  
**770 Somerset Street West and 13 LeBreton Street North, Ottawa, ON**

Sample ID	MOE Table 3 RPI Land Use	REPORTING LIMIT	Units	MW-2 SS2 1.2-2.7 B2H6839 8-Nov-2012	MW-5 SS2 1.2-2.7 B2H6839 9-Nov-2012	MW9B-2 2.3 1323765 AVERAGE 23-Oct-2013	MW10-2 2.3 1323765 23-Oct-2013	MW11A-2 1.8 1323765 23-Oct-2013
Depth (m) Laboratory work order								
Sampling Date								
<b>Polycyclic Aromatic Hydrocarbons (PAHs)</b>								
Acenaphthene	7.9	0.005\0.05	ug/g	<0.005	0.0057	<0.05	<0.05	<0.05
Acenaphthylene	0.15	0.005\0.05	ug/g	<0.005	0.017	<0.05	<0.05	<0.05
Anthracene	0.67	0.005\0.05	ug/g	<0.005	0.016	<0.05	<0.05	<0.05
Benzo(a)anthracene	0.5	0.005\0.05	ug/g	0.0054	0.063	<0.05	<0.05	<0.05
Benzo(a)pyrene	0.3	0.005\0.05	ug/g	0.0067	0.064	<0.05	<0.05	<0.05
Benzo(b/j)fluoranthene	0.78	0.005\0.05	ug/g	0.0083	0.081	<0.05	<0.05	<0.05
Benzo(ghi)perylene	6.6	0.005\0.05	ug/g	0.0052	0.043	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	0.78	0.005\0.05	ug/g	<0.005	0.034	<0.05	<0.05	<0.05
Chrysene	7	0.005\0.05	ug/g	<0.005	0.055	<0.05	<0.05	<0.05
Dibenzo(a,h)anthracene	0.1	0.005\0.05	ug/g	<0.005	0.012	<0.05	<0.05	<0.05
Fluoranthene	0.69	0.005\0.05	ug/g	0.011	0.11	<0.05	<0.05	<0.05
Fluorene	62	0.005\0.05	ug/g	<0.005	<0.005	<0.05	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	0.38	0.005\0.05	ug/g	<0.005	0.045	<0.05	<0.05	<0.05
1-Methylnaphthalene	0.99	0.005\0.05	ug/g	<0.005	<0.005	<0.05	<0.05	<0.05
2-Methylnaphthalene	0.99	0.005\0.05	ug/g	<0.005	<0.005	<0.05	<0.05	<0.05
2-and 1-Methylnaphthalene	0.99	0.0071	ug/g	<0.0071	<0.0071	-	-	-
Naphthalene	0.6	0.005\0.05	ug/g	<0.005	<0.005	<0.05	<0.05	<0.05
Phenanthrene	6.2	0.005\0.05	ug/g	<0.005	0.049	<0.05	<0.05	<0.05
Pyrene	78	0.005\0.05	ug/g	0.011	0.092	<0.05	<0.05	<0.05

**Notes:**

MOE Table 3: Ontario Ministry of the Environment, "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, " April 2011. Generic Site Condition Standards for coarse-textured soils in a Non-Potable Ground Water Condition for Residential, Parkland, Institutional (RPI) land use.

**AVERAGE** indicates the calculated average of the sample and its duplicate for comparison to the standard.

100

Exceeds MOE Standard.

Table 6: Summary of Analytical Results  
for PHCs in Soil  
770 Somerset Street West and 13 LeBreton Street North, Ottawa, ON

Sample ID	MOE Table 3	REPORTIN		MW-1 SS3	MW-2 SS2	MW-2 SS3	MW-3 SS3	MW-4 SS2	MW-5 SS3	MW-6 SS2	MW-6 SS3	MW-7 SS3	MW-8 SS2	MW-8 SS3	MW9B-2	MW9B-3	MW10-2	MW11-2
Depth (m)	RPI Land	G LIMIT	Units	2.7-3.5	1.2-2.7	2.7-3.5	2.7-3.5	1.2-2.7	2.7-3.5	1.2-2.7	2.7-3.5	2.7-3.5	1.2-2.7	2.7-3.5	2.3	2.8	2.3	1.8
Laboratory work order	Use			B2H6839	B2H6839	B2H6839	B2H6839	B2H6839	B2H6839	B2H6839	B2H6839	B2H6839	B2H6839	B2H6839	1323765	1323765	1323765	1323765
AVERAGE																		
Sampling Date				8-Nov-2012	8-Nov-2012	8-Nov-2012	8-Nov-2012	9-Nov-2012	9-Nov-2012	9-Nov-2012	9-Nov-2012	8-Nov-2012	8-Nov-2012	8-Nov-2012	23-Oct-2013	23-Oct-2013	23-Oct-2013	23-Oct-2013
Petroleum Hydrocarbon Compounds (PHCs)																		
Benzene	0.21	0.04\0.02	ug/g	<0.04	<0.04	<0.12	<0.04	<0.04	<0.04	<0.06	<0.04	<0.06	<0.04	<0.04	<0.02	<0.02	<0.02	<0.02
Ethylbenzene	2	0.04\0.05	ug/g	<0.04	<0.04	<0.12	<0.04	<0.04	<0.04	<0.06	<0.04	<0.06	<0.04	<0.04	<0.05	<0.05	<0.05	<0.05
Toluene	2.3	0.04\0.02	ug/g	<0.04	<0.04	<0.12	<0.04	<0.04	<0.04	<0.06	<0.04	<0.06	<0.04	<0.04	<0.2	<0.2	<0.2	<0.2
p+m-Xylene	NV	0.04\0.05	ug/g	<0.04	<0.04	<0.12	0.043	<0.04	<0.04	<0.06	<0.04	<0.06	0.12	<0.04	<0.05	<0.05	<0.05	<0.05
o-Xylene	NV	0.04\0.05	ug/g	<0.04	<0.04	<0.12	<0.04	<0.04	<0.04	<0.06	<0.04	<0.06	0.16	<0.04	<0.05	<0.05	<0.05	<0.05
Xylene (Total)	3.1	0.04\0.05	ug/g	<0.04	<0.04	<0.12	0.043	<0.04	<0.04	<0.06	<0.04	<0.06	0.28	<0.04	<0.05	<0.05	<0.05	<0.05
F1 (C6-C10)	55	20\10	ug/g	<10	<10	<10	<10	<20	NA	<10	<20	NA	<30	<10	<10	<10	<10	<10
F1 (C6-C10)-BTEX	55	10		-	-	-	-	-	-	-	-	-	-	-	<10	-	<10	<10
F2 (C10-C16)	98	10	ug/g	<10	<10	<10	<10	<10	<10	<10	<10	<10	46	<10	<10	-	<10	<10
F3 (C16-C34)	300	10\20	ug/g	<10	<10	<10	140	<10	12	<10	<10	<10	440	<10	<20	-	<20	<20
F4 (C34-C50)	2800	10\20	ug/g	<10	<10	<10	410	<10	33	<10	<10	<10	1400	<10	<20	-	<20	<20
Reached Baseline at C50	NA	NA	NA	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	-	-	-	-
F4 (Gavimetric heavy hydrocarbons)	2800	100	ug/g	NA	NA	NA	1900	NA	NA	NA	NA	NA	5300	NA	-	-	-	-

**Notes:**  
MOE Table 3: Ontario Ministry of the Environment, "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, " April 2011.  
Generic Site Condition Standards for coarse-textured soils in a Non-Potable Ground Water Condition for Residential, Parkland, Institutional (RPI) land use.  
**AVERAGE** indicates the calculated average of the sample and its duplicate for comparison to the standard.  
100 Exceeds MOE Standard.

Table 7: Summary of Analytical Results  
for VOCs in Soil  
770 Somerset Street West and 13 LeBreton Street North, Ottawa, ON

Sample ID				MW-1 SS3	MW-2 SS2	MW-2 SS3	MW-3 SS3	MW-4 SS2	MW-5 SS3	MW-6 SS2	MW-6 SS3	MW-7 SS3	MW-8 SS2	MW-8 SS3	MW9B-2	MW10-2	MW11-2	MW 9B-3
Depth (m)	MOE Table 3	REPORTING	Units	2.7-3.5	1.2-2.7	2.7-3.5	2.7-3.5	1.2-2.7	2.7-3.5	1.2-2.7	2.7-3.5	2.7-3.5	1.2-2.7	2.7-3.5	2.3	2.3	1.8	2.7
Laboratory work order	RPI Land Use	LIMIT		B2H6839	B2H6839	B2H6839	B2H6839	B2H6839	B2H6839	B2H6839	B2H6839	B2H6839	B2H6839	B2H6839	1323765	1323765	1323765	1323765
AVERAGE											AVERAGE				AVERAGE			
Sampling Date				8-Nov-2012	8-Nov-2012	8-Nov-2012	8-Nov-2012	9-Nov-2012	9-Nov-2012	9-Nov-2012	9-Nov-2012	8-Nov-2012	8-Nov-2012	8-Nov-2012	23-Oct-2013	23-Oct-2013	23-Oct-2013	23-Oct-2013
Volatile Organic Compounds (VOCs)																		
Acetone	16	1\0.5	ug/g	<1	<1	<3	<1	<1	NA	<1.5	<1	NA	<1	<1	<0.5	<0.5	<0.5	<0.5
Benzene	0.21	0.04\0.02	ug/g	<0.04	<0.04	<0.12	<0.04	<0.04	<0.04	<0.06	<0.04	<0.06	<0.04	<0.04	<0.02	<0.02	<0.02	<0.02
Bromodichloromethane	13	0.1\0.05	ug/g	<0.1	<0.1	<0.3	<0.1	<0.1	NA	<0.15	<0.1	NA	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05
Bromoform	0.27	0.1\0.05	ug/g	<0.1	<0.1	<0.3	<0.1	<0.1	NA	<0.15	<0.1	NA	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05
Bromomethane	0.05	0.1	ug/g	<0.1	<0.1	<0.3	<0.1	<0.1	NA	<0.15	<0.1	NA	<0.1	<0.1	-	-	-	-
Carbon Tetrachloride	0.05	0.1\0.05	ug/g	<0.1	<0.1	<0.3	<0.1	<0.1	NA	<0.15	<0.1	NA	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05
Chlorobenzene	2.4	0.1\0.05	ug/g	<0.1	<0.1	<0.3	<0.1	<0.1	NA	<0.15	<0.1	NA	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05
Chloroform	0.05	0.1\0.05	ug/g	<0.1	<0.1	<0.3	<0.1	<0.1	NA	<0.15	<0.1	NA	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05
Dibromochloromethane	9.4	0.1	ug/g	<0.1	<0.1	<0.3	<0.1	<0.1	NA	<0.15	<0.1	NA	<0.1	<0.1	-	-	-	-
1,2-Dichlorobenzene	3.4	0.1\0.05	ug/g	<0.1	<0.1	<0.3	<0.1	<0.1	NA	<0.15	<0.1	NA	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05
1,3-Dichlorobenzene	4.8	0.1\0.05	ug/g	<0.1	<0.1	<0.3	<0.1	<0.1	NA	<0.15	<0.1	NA	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05
1,4-Dichlorobenzene	0.083	0.1\0.05	ug/g	<0.1	<0.1	<0.3	<0.1	<0.1	NA	<0.15	<0.1	NA	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethane	3.5	0.1\0.05	ug/g	<0.1	<0.1	<0.3	<0.1	<0.1	NA	<0.15	<0.1	NA	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05
1,2-Dichloroethane	0.05	0.1\0.05	ug/g	<0.1	<0.1	<0.3	<0.1	<0.1	NA	<0.15	<0.1	NA	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05
1,1-Dichloroethylene	0.05	0.1\0.05	ug/g	<0.1	<0.1	<0.3	<0.1	<0.1	NA	<0.15	<0.1	NA	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05
Cis-1,2-Dichloroethylene	3.4	0.1\0.05	ug/g	<0.1	<0.1	<0.3	<0.1	<0.1	NA	<0.15	<0.1	NA	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05
Trans-1,2-Dichloroethylene	0.084	0.1\0.05	ug/g	<0.1	<0.1	<0.3	<0.1	<0.1	NA	<0.15	<0.1	NA	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05
1,2-Dichloropropane	0.05	0.1\0.05	ug/g	<0.1	<0.1	<0.3	<0.1	<0.1	NA	<0.15	<0.1	NA	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05
1,3-Dichloropropylene	0.05	0.1\0.05	ug/g	<0.1	<0.1	<0.3	<0.1	<0.1	NA	<0.15	<0.1	NA	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	2	0.04\0.05	ug/g	<0.04	<0.04	<0.12	<0.04	<0.04	<0.04	<0.06	<0.04	<0.06	<0.04	<0.04	<0.05	<0.05	<0.05	<0.05
Ethylene Dibromide	0.05	0.1\0.05	ug/g	<0.1	<0.1	<0.3	<0.1	<0.1	NA	<0.15	<0.1	NA	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05
Methyl Ethyl Ketone	16	1\0.5	ug/g	<1	<1	<3	<1	<1	NA	<1.5	<1	NA	<1	<1	<0.5	<0.5	<0.5	<0.5
Methylene Chloride	0.1	0.1\0.05	ug/g	<0.1	<0.1	<0.3	<0.1	<0.1	NA	<0.15	<0.1	NA	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05
Methyl Isobutyl Ketone	1.7	1\0.5	ug/g	<1	<1	<3	<1	<1	NA	<1.5	<1	NA	<1	<1	<0.5	<0.5	<0.5	<0.5
Methyl-t-Butyl Ether	0.75	0.1\0.05	ug/g	<0.1	<0.1	<0.3	<0.1	<0.1	NA	<0.15	<0.1	NA	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05
Styrene	0.7	0.1\0.05	ug/g	<0.1	<0.1	<0.3	<0.1	<0.1	NA	<0.15	<0.1	NA	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05
1,1,1,2-Tetrachloroethane	0.058	0.1\0.05	ug/g	<0.1	<0.1	<0.3	<0.1	<0.1	NA	<0.15	<0.1	NA	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05
1,1,2,2-Tetrachloroethane	0.05	0.1\0.05	ug/g	<0.1	<0.1	<0.3	<0.1	<0.1	NA	<0.15	<0.1	NA	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05
Toluene	2.3	0.04\0.02	ug/g	<0.04	<0.04	<0.12	<0.04	<0.04	<0.04	<0.06	<0.04	<0.06	<0.04	<0.04	<0.2	<0.2	<0.2	<0.2
Tetrachloroethylene	0.28	0.1\0.05	ug/g	<0.1	<0.1	<0.3	<0.1	<0.1	NA	<0.15	<0.1	NA	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05
1,1,1-Trichloroethane	0.38	0.1\0.05	ug/g	<0.1	<0.1	<0.3	<0.1	<0.1	NA	<0.15	<0.1	NA	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05
1,1,2-Trichloroethane	0.05	0.1\0.05	ug/g	<0.1	<0.1	<0.3	<0.1	<0.1	NA	<0.15	<0.1	NA	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05
Trichloroethylene	0.061	0.1\0.05	ug/g	<0.1	<0.1	<0.3	<0.1	<0.1	NA	<0.15	<0.1	NA	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05
Vinyl Chloride	0.02	0.04\0.02	ug/g	<0.04	<0.04	<0.12	<0.04	<0.04	NA	<0.06	<0.04	NA	<0.04	<0.04	<0.02	<0.02	<0.02	<0.02
Total Xylenes	3.1	0.04\0.05	ug/g	<0.04	<0.04	<0.12	0.043	<0.04	<0.04	<0.06	<0.04	<0.06	0.28	<0.04	<0.05	<0.05	<0.05	<0.05
Dichlorodifluoromethane	16	0.1\0.05	ug/g	<0.1	<0.1	<0.1	<0.1	<0.1	NA	<0.15	<0.1	NA	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05
Hexane(n)	2.8	0.1\0.05	ug/g	<0.1	<0.1	<0.3	<0.1	<0.1	NA	<0.15	<0.1	NA	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05
Trichlorofluoromethane	4	0.1\0.05	ug/g	<0.1	<0.1	<0.3	<0.1	<0.1	NA	<0.15	<0.1	NA	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05

Notes:

MOE Table 3: Ontario Ministry of the Environment, "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, " April 2011. Generic Site Condition Standards for coarse-textured soils in a Non-Potable Ground Water Condition for Residential, Parkland, Institutional (RPI) land use.

AVERAGE indicates the calculated average of the sample and its duplicate for comparison to the standard.

100

Reporting limit exceeds MOE

100

Exceeds MOE Standard

**Table 8: Summary of Analytical Results  
for PCBs in Soil  
770 Somerset Street West and 13 LeBreton Street North, Ottawa, ON**

Sample ID	MOE Table 3	REPORTING	Units	MW-7 SS3	MW-8 SS3
Depth (m)	RPI Land Use	LIMIT		2.7-3.5	2.7-3.5
Laboratory work order				B2H6839	B2H6839
Sampling Date				8-Nov-2012	8-Nov-2012
<b><i>Polychlorinated Biphenyls (PCBs)</i></b>					
Aroclor 1242	-	0.01	ug/g	<0.01	<0.01
Aroclor 1248	-	0.01	ug/g	<0.01	<0.01
Aroclor 1254	-	0.01	ug/g	<0.01	<0.01
Aroclor 1260	-	0.01	ug/g	<0.01	<0.01
Total PCB	0.35	0.01	ug/g	<0.01	<0.01

## Notes:

MOE Table 3: Ontario Ministry of the Environment, "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, " April 2011. Generic Site Condition Standards for coarse-textured soils in a Non-Potable Ground Water Condition for Residential, Parkland, Institutional (RPI) land

**100**

Exceeds MOE Standard

Table 9: Summary of Analytical Results  
for Metals and Inorganics in Groundwater  
770 Somerset Street West and 13 LeBreton Street North, Ottawa, ON

Sample ID Laboratory work order Sampling Date	MOE Table 3 All Property Types	City of Ottawa Sewer Use By-Law No. 2003- 514 (Sanitary / Combined Sewer Use)	Units	MW-1 B2I1463 AVERAGE 16-Nov-2012	MW-1 B4E2663 8-Aug-2014	MW-2 B2I1463 17-Nov-2012	MW-2 B4E2663 8-Aug-2014	MW-4 B2I1463 17-Nov-2012	MW-4 B4E2663 8-Aug-2014	MW-5A (Deep) 1324043 29-Oct-2013	MW-5A (Deep) B4E2663 AVERAGE 8-Aug-2014	MW-5B (renamed) B2I1463 16-Nov-2012	MW-5B (Shallow) B4E2663 8-Aug-2014
Metals and Inorganics													
Aluminum		50,000	mg/L	-	-	-	-	-	-	<0.1	-	-	-
Antimony	20000	5,000	ug/L	<5	<5.0	<2.5	<5.0	<2.5	<5.0	<10	<5.0	<2.5	<5.0
Arsenic	1900	1,000	ug/L	<10	<10	<5	<10	<10	<20	<20	<10	<10	<10
Barium	29000	-	ug/L	255	260	88	350	320	270	-	270	380	290
Beryllium	67	5,000	ug/L	<5	<5.0	<2.5	<5.0	<2.5	<5.0	-	<5.0	<2.5	<5.0
Bismuth	-	5,000	mg/L	-	-	-	-	-	-	<0.05	-	-	-
Boron (Total)	45000	25,000	ug/L	<100	110	150	120	160	150	200	175	180	180
Cadmium	2.7	20	ug/L	<1	<1.0	<0.5	<1.0	<0.5	<1.0	<0.8	<1.0	<0.5	<1.0
Chloride	2,300,000	-	ug/L	7,350,000	5,700,000	2,600,000	9,300,000	4,900,000	10,000,000	-	6,350,000	4,600,000	5,900,000
Chromium	810	5,000	ug/L	<50	<50	<25	<50	<25	<50	<5	<50	<25	<50
Chromium VI	140	-	ug/L	<5	<5.0	<5	<5.0	-	<5.0	-	<5.0	<5	<0.50
Cobalt	66	5,000	ug/L	7	<5.0	<2.5	<5.0	<2.5	5.5	<10	<5.0	2.9	<5.0
Copper	87	3,000	ug/L	<10	<10	<5	<10	<5	<10	<10	<10	<5	<10
Lead	25	5,000	ug/L	<5	<5.0	<2.5	<5.0	<2.5	<5.0	<10	<5.0	<2.5	<5.0
Manganese	-	5,000	mg/L	-	-	-	-	-	-	0.07	-	-	-
Mercury	0.29	1	ug/L	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1
Molybdenum	9200	5,000	ug/L	<5	5.2	5.6	<5.0	6.9	<5.0	<10	<5.0	<2.5	<5.0
Nickel	490	30,000	ug/L	10.5	<10	<5	<10	5.9	<10	30	<10	9.1	<10
Selenium	63	5,000	ug/L	<20	<20	<10	<20	<10	<20	<20	<20	<10	<20
Silver	1.5	5,000	ug/L	1.55	1.9	<0.5	5	<0.5	1.6	<10	2.35	<0.5	<1.0
Sodium	2,300,000	-	ug/L	4,300,000	3,700,000	2,100,000	5,700,000	3,200,000	5,600,000	-	3850000	3,200,000	3,400,000
Tin	-	5,000	mg/L	-	-	-	-	-	-	<0.1	-	-	-
Titanium	-	5,000	mg/L	-	-	-	-	-	-	<0.1	-	-	-
Thallium	510	-	ug/L	<0.5	<0.50	<0.5	<0.50	<0.5	<0.50	-	<0.50	<0.25	<0.50
Uranium	420	-	ug/L	3.2	3	6.4	2.6	5.2	5.1	-	3.7	2.6	3.7
Vanadium	250	5,000	ug/L	9.9	<5.0	5.7	<10	<5	<10	<50	<5.0	5.7	<5.0
Zinc	1100	3,000	ug/L	<50	<50	<25	<50	<25	<50	<40	<50	<25	<50
Cyanide, Free	66	-	ug/L	9	31	10	11	8	9	-	10.5	<2	5

Notes:

**MOE Table 3:** Ontario Ministry of the Environment, "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act," April 2011. Generic Site Condition Standards for a Non-Potable Ground Water Condition for All Property Types.

**City of Ottawa Sewer Use: By-Law No.2003 -514;** A By-Law to regulate the control of discharge to sewers and sewage works. `(1)By-Law 2003-514 prohibits discharge of fuel in any amount, liquids with two or more phases, or combustible liquids, unless written authorization is obtained from the City of Ottawa.

MW-5 renamed in October 2013 to MW-5B

Laboratory Reporting Limits may vary between samples; if not shown, reference certificates of analysis.

100

Exceeds City of Ottawa Combined Sewer Use

100

Exceeds MOE Standard.



Table 9: Summary of Analytical Results  
for Metals and Inorganics in Groundwater  
770 Somerset Street West and 13 LeBreton Street North, Ottawa, ON

Sample ID Laboratory work order Sampling Date	MOE Table 3 All Property Types	City of Ottawa Sewer Use By-Law No. 2003- 514 (Sanitary / Combined Sewer Use)	Units	MW-5C (Deepest) B4I8861 AVERAGE 9-Oct-2014	MW-5C (Deepest) B4M9028 AVERAGE 3-Dec-2014	MW-9A (Deep) 1324044 AVERAGE 29-Oct-2013	MW-9A (Deep) B4E2663 8-Aug-2014	MW-9B (Shallow) 1324044 AVERAGE 28-Oct-2013	MW-9B (Shallow) B4E2663 8-Aug-2014	MW-10 1324044 28-Oct-2013	MW-10 B4E2663 8-Aug-2014	MW-11 1324044 28-Oct-2013	MW-11 B4E2663 8-Aug-2014
Metals and Inorganics													
Aluminum		50,000	mg/L	-	-	-	-	-	-	-	-	-	-
Antimony	20000	5,000	ug/L	<5	<5.0	<0.5	<0.50	<0.5	<5.0	0.5	<2.5	<0.5	<2.5
Arsenic	1900	1,000	ug/L	12	<10	<1	<2.0	<10	<10	<10	<5.0	<1	<5.0
Barium	29000	-	ug/L	555	313	365	500	180	230	380	260	410	390
Beryllium	67	5,000	ug/L	<5	<5.0	<0.5	<0.50	<0.5	<5.0	<0.5	<2.5	<0.5	<2.5
Bismuth	-	5,000	mg/L	-	-	-	-	-	-	-	-	-	-
Boron (Total)	45000	25,000	ug/L	495	910	395	430	110	170	220	190	80	74
Cadmium	2.7	20	ug/L	<1	<1.0	<0.1	<0.10	<0.1	<1.0	<0.1	<0.50	<0.1	<0.50
Chloride	2,300,000	-	ug/L	6800000	6,650,000	631,500	1,500,000	5,465,000	5,800,000	3,720,000	3,900,000	2,544,000	3,400,000
Chromium	810	5,000	ug/L	<50	<50	1	<5.0	2.5	<50	3	<25	3	<25
Chromium VI	140	-	ug/L	-	-	<10	<0.50	<10	<5.0	<10	<0.50	<10	<5.0
Cobalt	66	5,000	ug/L	5.5	7.2	0.6	1.2	3.65	<5.0	3.4	<2.5	1.6	<2.5
Copper	87	3,000	ug/L	<10	<10	<1	<1.0	5.5	<10	4	<5.0	2	<5.0
Lead	25	5,000	ug/L	<5	15	<1	<0.50	<1	<5.0	<1	<2.5	<1	<2.5
Manganese	-	5,000	mg/L	-	-	-	-	-	-	-	-	-	-
Mercury	0.29	1	ug/L	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Molybdenum	9200	5,000	ug/L	<5	<5.0	<5	13	<5	<5.0	10	3.6	5	3.1
Nickel	490	30,000	ug/L	23	28	<5	<1.0	17	<10	21	<5.0	11	<5.0
Selenium	63	5,000	ug/L	<20	<20	<1	<2.0	<1	<20	<1	<10	<1	<10
Silver	1.5	5,000	ug/L	<1	<1.0	<0.1	<0.10	0.25	1.3	<0.1	<0.50	<0.1	<0.50
Sodium	2,300,000	-	ug/L	4000000	3700000	338,500	800,000	3,525,000	3,400,000	2,110,000	2,300,000	1,540,000	2,100,000
Tin	-	5,000	mg/L	-	-	-	-	-	-	-	-	-	-
Titanium	-	5,000	mg/L	-	-	-	-	-	-	-	-	-	-
Thallium	510	-	ug/L	0.65	0.80	<0.1	0.23	<0.1	<0.50	0.2	<0.25	0.2	<0.25
Uranium	420	-	ug/L	4	6	2	0.54	2.5	2.9	5	5.5	1	1.5
Vanadium	250	5,000	ug/L	15	7.7	<1	<2.5	<1	<5.0	<1	<5.0	<1	<2.5
Zinc	1100	3,000	ug/L	<50	<50	<10	<5.0	<10	<50	40	<25	<10	<25
Cyanide, Free	66	-	ug/L	-	-	<5	<2	<5	6	<5	<2	<5	6

Notes:

**MOE Table 3:** Ontario Ministry of the Environment, "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act," April 2011. Generic Site Condition Standards for a Non-Potable Ground Water Condition for All Property Types.

**City of Ottawa Sewer Use: By-Law No.2003 -514;** A By-Law to regulate the control of discharge to sewers and sewage works. `(1)By-Law 2003-514 prohibits discharge of fuel in any amount, liquids with two or more phases, or combustible liquids, unless written authorization is obtained from the City of Ottawa.

MW-5 renamed in October 2013 to MW-5B

Laboratory Reporting Limits may vary between samples; if not shown, reference certificates of analysis.

100

Exceeds City of Ottawa Combined Sewer Use

100

Exceeds MOE Standard.

Table 10: Summary of Analytical Results  
for PHCs in Groundwater  
770 Somerset Street West and 13 LeBreton Street North, Ottawa, ON

Sample ID	MOE Table 3 All Property Types	City of Ottawa Sewer Use By-Law No. 2003-514 (Sanitary / Combined Sewer Use)	REPORTING LIMIT	Units	MW-1 B2I1463 AVERAGE 16-Nov-2012	MW-2 B2I1463 17-Nov-2012	MW-4 B2I1463 17-Nov-2012	MW-5A 1324043 29-Oct-2013	MW-5B (renamed) B2I1463 16-Nov-2012	MW-9A 1324044 29-Oct-2013	MW-9B RESAMPLE 1326983 AVERAGE 10-Dec-2013	MW-10 1324044 28-Oct-2013	MW-10 RESAMPLE 1326983 AVERAGE 10-Dec-2013	MW-11 1324044 28-Oct-2013
Laboratory work order														
Sampling Date														
Petroleum Hydrocarbon Compounds (PHCs)														
Benzene	44	10000	0.2\0.5	ug/L	<0.2	<0.2	<0.2	<0.5	<0.2	<0.5	-	<0.5	-	<0.5
Ethylbenzene	2,300	57000	0.2\0.5	ug/L	<0.2	<0.2	<0.2	<0.5	1.8	<0.5	-	<0.5	-	<0.5
Toluene	18,000	80000	0.2\0.5	ug/L	<0.2	<0.2	<0.2	<0.5	0.23	<0.5	-	<0.5	-	<0.5
p+m-Xylene	NV	-	0.2\0.5	ug/L	<0.2	<0.2	<0.2	<0.5	2.9	<0.5	-	<0.5	-	<0.5
o-Xylene	NV	-	0.2\0.5	ug/L	<0.2	<0.2	<0.2	<0.5	3	<0.5	-	<0.5	-	<0.5
Xylene (Total)	4,200	320000	0.2\1	ug/L	<0.2	<0.2	<0.2	<1	5.9	<1	-	<1	-	<1
F1 (C6-C10)	750	see note	25\100	ug/L	<25	<25	<25	<100	35	<100	<100	<100	<100	<100
F1 (C6-C10)-BTEX	750	see note	100	ug/L	-	-	-	<100	29	<100	-	<100	-	<100
F2 (C10-C16)	150	see note	100	ug/L	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
F3 (C16-C34)	500	see note	100\200	ug/L	<100	<100	<100	<200	<100	<200	<200	200	400	<200
F4 (C34-C50)	500	see note	100\200	ug/L	<100	<100	<100	<200	<100	<200	<200	<200	<200	<200

**Notes:**  
**MOE Table 3:** Ontario Ministry of the Environment, "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, " April 2011. Generic Site Condition Standards for a Non-Potable Ground Water  
**City of Ottawa Sewer Use: By-Law No.2003 -514;** A By-Law to regulate the control of discharge to sewers and sewage works. `(1)By-Law 2003-514 prohibits discharge of fuel in any amount, liquids with two or more phases, or combustable  
MW-5 renamed in  
Resampling conducted at MW-9B and MW-10 based on unacceptable  
**AVERAGE** indicates the calculated arithmetic average of the sample and its  
**100** Exceeds City of Ottawa Combined Sewer Use Standard.  
**71** Exceeds MOE Standard.

Table 11: Summary of Analytical Results  
for VOCs in Groundwater  
770 Somerset Street West and 13 LeBreton Street North, Ottawa, ON

Sample ID  Laboratory work order  Sampling Date	MOE Table 3 All Property Types	City of Ottawa Sewer Use By-Law No. 2003- 514 (Sanitary / Combined Sewer Use)	Units	MW-1  B2I1463 AVERAGE 16-Nov-2012	MW-2  B2I1463  17-Nov-2012	MW-4  B2I1463  17-Nov-2012	MW-5A  1324043  29-Oct-2013	MW-5B (renamed) B2I1463  16-Nov-2012	MW-9A RESAMPLE 1325264 AVERAGE 13-Nov-2013	MW-9B  1324044 AVERAGE 28-Oct-2013	MW-10  1324044  28-Oct-2013	MW-11  1324044  28-Oct-2013
Volatile Organic Compounds (VOCs)												
Acetone	130000	-	ug/L	<10	<10	<10	-	<10	<50	<50	<50	<50
Benzene	44	10	ug/L	<0.2	<0.2	<0.2	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	85000	350	ug/L	<0.5	<0.5	<0.5	<0.3	<0.5	<0.3	<0.3	<0.3	<0.3
Bromoform	380	630	ug/L	<1	<1	<1	<0.4	<1	<0.4	<0.4	<0.4	<0.4
Bromomethane	5.6	110	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Carbon Tetrachloride	0.79	57	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chlorobenzene	630	57	ug/L	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2
Cholorethane	630	270	ug/L	-	-	-	<0.2	-	-	-	-	-
Chloroform	2.4	80	ug/L	<0.3	<0.3	<0.3	<0.5	<0.3	2.4	<0.5	<0.5	<0.5
Chloromethane	-	190	ug/L	-	-	-	<0.2	-	-	-	-	-
1,2-dibromoethane	-	0.028	ug/L	-	-	-	<0.2	-	-	-	-	-
Dibromochloromethane	82000	57	ug/L	<0.5	<0.5	<0.5	<0.3	<0.5	<0.3	<0.3	<0.3	<0.3
1,2-Dichlorobenzene	4600	-	ug/L	<0.5	<0.5	<0.5	<0.4	<0.5	<0.4	<0.4	<0.4	<0.4
1,3-Dichlorobenzene	9600	-	ug/L	<0.5	<0.5	<0.5	<0.4	<0.5	<0.4	<0.4	<0.4	<0.4
1,4-Dichlorobenzene	8	17	ug/L	<0.5	<0.5	<0.5	<0.4	<0.5	<0.4	<0.4	<0.4	<0.4
1,1-Dichloroethane	320	200	ug/L	<0.2	<0.2	<0.2	<0.4	<0.2	<0.4	<0.4	<0.4	<0.4
1,2-Dichloroethane	1.6	210	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,1-Dichloroethylene	1.6	40	ug/L	<0.2	<0.2	<0.2	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5
Cis-1,2-Dichloroethylene	1.6	200	ug/L	<0.5	<0.5	<0.5	<0.4	<0.5	<0.4	<0.4	<0.4	<0.4
Trans-1,2-Dichloroethylene	1.6	200	ug/L	<0.5	<0.5	<0.5	<0.4	<0.5	<0.4	<0.4	<0.4	<0.4
Dichloromethane	-	-	ug/L	-	-	-	<4	-	-	<4	<4	<4
1,2-Dichloropropane	16	850	ug/L	<0.2	<0.2	<0.2	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5
1,3-Dichloropropylene	5.2	-	ug/L	<0.5	<0.5	<0.5	-	<0.5	-	-	-	-
cis-1,3-Dicloropropene	-	0.007	ug/L	-	-	-	<0.2	-	<0.2	<0.2	<0.2	<0.2
trans-1,3-Dichloropropene	-	0.007	ug/L	-	-	-	<0.2	-	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	2300	57	ug/L	<0.2	<0.2	<0.2	<0.5	1.8	<0.5	<0.5	<0.5	<0.5
Ethylene Dibromide	0.25	-	ug/L	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2
Methyl Ethyl Ketone	470000	-	ug/L	<10	<10	<10	-	<10	<10	<10	<10	<10
Methylene Chloride	610	0.211	ug/L	<2	<2	<2	-	<2	<4	-	-	-
Methyl Isobutyl Ketone	140000	-	ug/L	<5	<5	<5	-	<5	<10	<10	<10	<10
Methyl-t-Butyl Ether	190	-	ug/L	<0.5	<0.5	<0.5	-	<0.5	<10	<10	<10	<10
m&p-Xylene	-	-	ug/L	-	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
o-Xylene		-	ug/L	-	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
Styrene	1300	40	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1,2-Tetrachloroethane	3.4	50	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane	3.2	40	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	18000	80	ug/L	<0.2	<0.2	<0.2	<0.5	0.23	<0.5	<0.5	<0.5	<0.5
Tetrachloroethylene	1.6	50	ug/L	<0.2	<0.2	<0.2	<0.3	<0.2	<0.3	<0.3	<0.3	<0.3
1,1,1-Trichloroethane	640	54	ug/L	1.06	<0.2	2.7	<0.4	0.31	<0.4	<0.4	0.5	<0.4
1,1,2-Trichloroethane	4.7	800	ug/L	<0.5	<0.5	<0.5	<0.4	<0.5	<0.4	<0.4	<0.4	<0.4
Trichloroethylene	1.6	54	ug/L	<0.2	<0.2	<0.2	<0.3	<0.2	<0.3	<0.3	<0.3	<0.3
1,3,5-trimethylbenzene	-	0.003	ug/L	-	-	-	<0.3	-	-	-	-	-
Vinyl Chloride	0.5	400	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total Xylenes	4200	320	ug/L	<0.2	<0.2	<0.2	<1	5.9	<1	<1	<1	<1
Dichlorodifluoromethane	4400	-	ug/L	<1	<1	<1	-	<1	<0.5	<0.5	<0.5	<0.5
Hexane(n)	51	-	ug/L	<1	<1	<1	-	<1	<5	<5	<5	<5
Trichlorofluoromethane	2500	20	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

**Notes:**  
**MOE Table 3:** Ontario Ministry of the Environment, "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act," April 2011. Generic Site Condition Standards for a Non-Potable Ground Water Condition for All Property Types.  
**City of Ottawa Sewer Use: By-Law No.2003 -514;** A By-Law to regulate the control of discharge to sewers and sewage works. `(1)By-Law 2003-514 prohibits discharge of fuel in any amount, liquids with two or more phases, or combustable liquids, unless written authorization is obtained from the City of Ottawa.  
MW-5 renamed in October 2013 to MW-5B  
Laboratory Reporting Limits may vary between samples; if not shown, reference certificates of analysis.  

100

Exceeds City of Ottawa Combined Sewer Use Standard.  

100

Exceeds MOE Standard.

**Table 12: Summary of Analytical Results  
for PCBs and PAHs in Groundwater  
770 Somerset Street West and 13 LeBreton Street North, Ottawa, ON**

Sample ID Depth (m) Laboratory work order Sampling Date	MOE Table 3 All Property Types	City of Ottawa Sewer Use By-Law No. 2003-514 (Sanitary / Combined Sewer Use)	Units	MW-5B (renamed) B2I1463 16-Nov-2012	MW-5A 1324043 29-Oct-2013	MW-9A 1324044 29-Oct-2013	MW-9B 1324044 28-Oct-2013	Dup 1 1324044 28-Oct-2013	MW-9B 1324044 AVERAGE 28-Oct-2013	MW-10 1324044 28-Oct-2013	MW-11 1324044 28-Oct-2013
<b>Polycyclic Aromatic Hydrocarbons</b>											
1-methylnaphthalene	1800	32	ug/L		<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene		22	ug/L		0.25	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	600	-	ug/L		<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	1.8	-	ug/L		<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	2.4	-	ug/L		<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	2.4	-	ug/L		<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	4.7	-	ug/L		<0.01	<0.01	0.01	<0.01	0.01	<0.01	<0.01
Benzo(b)fluoranthene	0.75	-	ug/L		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(g,h,i)perylene	0.2	-	ug/L		<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	0.4	-	ug/L		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	1	-	ug/L		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenzo(a,h)anthracene	0.52	-	ug/L		<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	130	-	ug/L	-	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	400	59	ug/L	-	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-c,d)pyrene	0.2	-	ug/L	-	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Naphthalene	1,400	59	ug/L	-	0.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	580	-	ug/L	-	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	68	-	ug/L	-	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
<b>Polychlorinated Biphenyls</b>											
Total PCB	7.8	See note	ug/L	<0.05	<0.1	-	-	-	-	-	-

**Notes:**

**MOE Table 3:** Ontario Ministry of the Environment, "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act," April 2011. Generic Site Condition Standards for a Non-Potable Ground Water Condition for All Property Types.

**City of Ottawa Sewer Use: By-Law No.2003 -514;** A By-Law to regulate the control of discharge to sewers and sewage works. `(1)By-Law 2003-514 prohibits discharge of fuel in any amount, liquids with two or more phases, or combustible liquids, unless written authorization is obtained from the City of Ottawa.

MW-5 renamed in October 2013 to MW-5B

Laboratory Reporting Limits may vary between samples; if not shown, reference certificates of analysis.

**100** Exceeds City of Ottawa Combined Sewer Use

**100** Exceeds MOE Standard.

**Table 14: Relative Percent Difference Calculations for Soil  
770 Somerset Street West and 13 Lebreton Street North, Ottawa, ON**

Parameter	Sample(1)	Duplicate	Laboratory Reporting Limit	Relative Percent Difference (RPD)	Sample(1)	Duplicate	Laboratory Reporting Limit	Relative Percent Difference (RPD)	Laboratory RPD Acceptance Value
	MW-5 SS1	DUP2			MW9B-2	DUP1			
	2012 Investigation				2013 Investigation				
Antimony	1.3	1.7	0.2	-0.27	<1	<1	1	-	0.3
Arsenic	6.2	8.1	1	-0.27	<1	2	1	-	0.3
Barium	160	160	0.5	0.00	31	53	1	-0.52	0.3
Beryllium	0.24	0.29	0.2	-	<1	<1	1	-	0.3
Boron (Hot Water Soluble)	0.34	0.52	0.05	-0.42	<0.5	<0.5	0.5	-	0.4
Cadmium	0.49	0.5	0.1	-0.02	<0.5	<0.5	0.5	-	0.3
Chromium	13	13	1	0.00	10	22	1	-0.75	0.3
Chromium VI	<0.2	<0.2	0.2	-	<0.5	<0.5	0.5	-	0.3
Cobalt	4.1	4.5	0.1	-0.09	4	7	1	-0.55	0.3
Copper	100	74	0.5	0.30	15	25	1	-0.50	0.3
Lead	150	190	1	-0.24	4	7	1	-0.55	0.3
Mercury	0.22	0.38	0.05	-0.53	<0.1	<0.1	0.1	-	0.3
Molybdenum	0.82	0.92	0.5	-0.11	<1	1	1	-	0.3
Nickel	44	56	0.5	-0.24	9	19	1	-0.71	0.3
Selenium	<0.5	<0.5	0.5	-	<1	<1	1	-	0.3
Silver	<0.5	<0.5	0.5	-	<0.2	<0.2	0.2	-	0.3
Thallium	0.25	0.15	0.2	-	<1	<1	1	-	0.3
Vanadium	14	16	5	-0.13	19	29	2	-0.42	0.3
Zinc	350	360	5	-0.03	15	26	2	-0.54	0.3
Electrical Conductivity (ms/cm)	0.32	0.29	0.002	0.10	0.85	1.08	0.05	-0.24	0.1
Cyanide, Free	<0.01	<0.01	0.01	-	<0.03	<0.03	0.03	-	0.35
Sodium Adsorption Ratio (no unit)	6.8	7.7	0.01	-	16	3.31	0.01	-	-
Boron (Total)	<5	<5	5	-	10	20	10	-	0.3
Uranium	0.31	0.37	0.05	-0.18					0.3

**Notes:**

- (1) All results reported in micrograms per gram (µg/g) unless otherwise noted
- < Parameter not detected above value specified
- Relative Percent Difference  $RPD = |(X-Y)/Average(X,Y)|$  where X is the sample and Y is the duplicate
- RPD could not be calculated

Table 15. Relative Percent Difference Calculations for Groundwater  
770 Somerset Street West and 13 Lebreton Steet North, Ottawa

Parameter	Sample(1)	Duplicate	Laborator y	Relative Percent Difference	Sample(1)	Duplicate	Laborator y	Relative Percent Difference	Sample(1)	Duplicate	Laborator y	Relative Percent Difference	Sample(1)	Duplicate	Laborator y	Relative Percent Difference	Sample(1)	Duplicate	Laboratory Reporting Limit	Relative Percent Difference	Sample(1)	Duplicate	Laboratory Reporting Limit	Relative Percent Difference
	MW-1	DUP1	Reporting		MW-5A	DUP-1	Reporting		MW-5C-1	MW5C-2	Reporting		MW-5C	DUP1	Reporting		MW-9A	Dup2			MW-9B	Dup1		
	November 16, 2012				August 8, 2014				October 9, 2014				December 3, 2014				October 29, 2013				October 28, 2013			
Metals and Inorganics																								
Antimony	<5	<5	5		<5.0	<5.0	5		<5	<5	5		<5.0	<5.0	5		<0.5	<0.5	0.5		<0.5	<0.5	0.5	
Arsenic	<10	<10	10		<10	<10	10		12	12	10		<10	<10	10		<1	<1	1		<10	<10	1	
Barium	230	280	20	-0.20	270	270	20	0.00	560	550	20	0.02	310	310	20	0.00	360	370	10	-0.03	180	180	10	0.00
Beryllium	<5	<5	5		<5.0	<5.0	5		<5	<5	5		<5.0	<5.0	5		<0.5	<0.5	0.5		<0.5	<0.5	0.5	
Boron (Total)	<100	120	100		170	180	100		490	500	100	-0.02	900	920	100	-0.02	400	390	10	0.03	110	110	10	0.00
Cadmium	<1	<1	1		<1.0	<1.0	1		<1	<1	1		<1.0	<1.0	1		<0.1	<0.1	0.1		<0.1	<0.1	0.1	
Chloride	7900000	6800000	50000	0.15	6300000	6400000	50000	-0.02	6500000	7100000	80000	-0.09	6700000	6600000	70000	0.02	703000	560000	1000	0.23	5530000	5400000	1000	0.02
Chromium	<50	<50	50		<50	<50	50		<50	<50	50		<50	<50	50		<1	1	1		3	2	1	
Chromium VI	<5	<5	5		<5.0	<5.0	5		-	-	-		-	-	-		<10	-	10		<10	<10	10	
Cobalt	7.4	6.6	5		<5.0	<5.0	5		5	6	5		7.3	6.8	5		0.6	0.6	0.2	0.00	4	3.3	0.2	0.19
Copper	<10	<10	10		<10	<10	10		<10	<10	10		<10	<10	10		<1	<1	1		5	6	1	-0.18
Lead	<5	<5	5		<5.0	<5.0	5		<5	<5	5		15	14	5	0.07	<1	<1	1		<1	<1	1	
Mercury	<0.1	<0.1	0.1		<0.1	<0.1	0.1		-	-	-		-	-	-		<0.1	<0.1	0.1		<0.1	<0.1	0.1	
Molybdenum	<5	<5	5		<5.0	<5.0	5		<5	<5	5		<5.0	<5.0	5		<5	<5	5		<5	<5	5	
Nickel	10	11	10		<10	<10	10		23	23	10		29	28	10	0.04	<5	<5	5		17	17	5	0.00
Selenium	<20	<20	20		<20	<20	20		<20	<20	20		<20	<20	20		<1	<1	1		<1	<1	1	
Silver	1.2	1.9	1		2.3	2.4	1		<1	<1	1		<1.0	<1.0	1		<0.1	<0.1	0.1		0.4	0.1	0.1	
Sodium	4000000	4600000	1000	-0.14	3800000	3900000	1000	-0.03	4000000	4000000	1000	0.00	3700000	3700000	1000	0.00	370000	307000	2000	0.19	3590000	3460000	2000	0.04
Thallium	<0.5	<0.5	0.5		<0.50	<0.50	0.5		0.7	0.6	0.5		0.86	0.72	0.5	0.18	<0.1	<0.1	0.1		<0.1	<0.1	0.1	
Uranium	3.2	3.2	1	0.00	3.8	3.6	1	0.05	4	4	1	0.00	5.8	5.8	1	0.00	2	2	1		3	2	1	
Vanadium	8.8	11	5		<5.0	<5.0	5		9	21	5		<5.0	12	5		<1	<1	1		<1	<1	1	
Zinc	<50	<50	50		<50	<50	50		<50	<50	50		<50	<50	50		<10	<10	10		<10	<10	10	
Cyanide, Free	10	8	2	0.22	11	10	2	0.10	-	-			-	-			<5	<5	5		<5	<5	5	

Notes:

(1)

<

Relative  
Percent  
blank cell

All results reported in micrograms per gram  
Parameter not detected above value specified  
RPD = |(X-Y)/Average(X,Y)| where X is the  
sample and Y is the duplicate  
RPD could not be calculated





**A-1**  
**DOCUMENTATION AND**  
**SAMPLING AND ANALYSIS PLAN**

## Carolyn Adams

---

**From:** Kearney, Michel <Michel.Kearney@ottawa.ca>  
**Sent:** April-25-14 4:08 PM  
**To:** Carolyn Adams  
**Cc:** Dunn, Jenn  
**Subject:** FW: Use of Non-Potable Groundwater  
**Attachments:** nonpotableLTR.pdf

Hi Carolyn,

This is to advise that the City of Ottawa does not object to the use of the non-potable groundwater site condition standards for the properties identified as 770 Somerset Street West and 13 Lebreton Street, in Ottawa, ON, as part of the preparation and filing of a Record of Site Condition for these sites.

Best Regards,

**Michel F. Kearney, P.Geo.**  
Sr. Hydrogeologist  
Infrastructure Planning Unit  
Policy Development & Urban Design Branch  
City of Ottawa  
Mail Code: 01-14  
Tel.: (613) 580-2424 ext.22872  
Fax.: (613) 580-2578

---

**From:** Dunn, Jenn  
**Sent:** April 24, 2014 1:24 PM  
**To:** Kearney, Michel  
**Cc:** 'adamsC@mmm.ca'  
**Subject:** FW: Use of Non-Potable Groundwater

Hi Michel

Could you please respond directly to Carolyn Adams as per the attached letter? Please cc me on your response for tracking purposes only.

Much appreciated.

*Jenn Dunn*

Executive Assistant/Adjointe exécutive  
City Clerk and Solicitor's office/bureau Greffier de la Ville et chef du contentieux  
City of Ottawa/ville d'Ottawa  
Tel/Télé: 613-580-2424 x 21801  
[jenn.dunn@ottawa.ca](mailto:jenn.dunn@ottawa.ca)

---

**From:** Carolyn Adams [<mailto:AdamsC@mmm.ca>]  
**Sent:** Wednesday, April 23, 2014 4:37 PM  
**To:** Dunn, Jenn  
**Subject:** Use of Non-Potable Groundwater

Jenn

As discussed, can you please forward the attached letter to Mr. Rick O'Connor and respond to me with the City's acceptance of the use of non-potable groundwater conditions. If you have any questions, please let me know.

**Carolyn Adams, M.A.Sc., P.Eng.**

Manager, Environmental Management

Associate Partner

MMM Group Limited

100 Commerce Valley Drive West,

Thornhill, ON, Canada L3T 0A1

t: 905-882-4211 ext. 6535 | f: 905-882-1857 | c: 647-222-0173

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Table 1: Phase Two ESA Sampling and Analysis Plan: 770 Somerset Street West, Ottawa, Ontario

Primary Objectives

- 1) Characterize the nature and extent of potential contaminants, based on the findings of the Phase One ESA
- 2) Identify if gross soil contamination is present to support excess material management during redevelopment activities
- 3) Collect data to support the filing of a record of site condition.

Figure ID	Media	Potential Contaminants of Concern in Soil and Groundwater	SOIL							Purpose and Justification	General Instructions	
			Grain-Size	PCBs	PAHs	Metals & Inorganics	VOCs	BTEX/PHCs (F1-F4)				
									<p>A Phase One ESA was completed by MMM Group Limited as draft in September 2012. Based on the results of the Phase One ESA, the Subject Property has been used as a commercial garage and gasoline retail outlet. Sampling of soil and groundwater was recommended to investigate the following areas of potentially contaminating activities (PCAs) and areas of potential environmental concern (APECs) :</p> <ul style="list-style-type: none"><li>• <b>APEC-1:</b> Former underground storage tank (UST) nest (1956)</li><li>• <b>APEC-2:</b> Former pump island and piping for gasoline retail outlet</li><li>• <b>APEC-3:</b> Former gasoline USTs (post-1956)</li><li>• <b>APEC-4:</b> Use of salt to control snow and ice</li><li>• <b>APEC-5:</b> Former fuel oil UST</li><li>• <b>APEC-6:</b> Import of fill of unknown quality during remediation at APECs-1, 2, 3, 5, 7 and 8.</li><li>• <b>APEC-7:</b> Former underground hoist in automotive shop</li><li>• <b>APEC-8:</b> Former waste oil UST</li></ul> <p>The purpose of this Phase Two ESA is to characterize soil and groundwater conditions on the Subject Property for the purpose of filing a RSC.</p>	<p><b>General Instructions</b></p> <p>Review SOPs for borehole drilling, soil sampling, field screening, and monitor well installation, prior to commencement of field activities. Unless otherwise specified, adhere to the following general instructions:</p> <p><b>BOREHOLES</b></p> <ul style="list-style-type: none"><li>• Advance soil borings to refusal on bedrock, which is anticipated at approximately 4 m to 5 m. Groundwater should be encountered within this depth.</li><li>• Conduct continuous field screening of soils (headspace) using a PID and RKI</li><li>• Inspect soils visually for changes in lithology and/or evidence of contamination</li></ul> <p><b>MONITORING WELLS</b></p> <ul style="list-style-type: none"><li>• Complete all eight boreholes as 50mm monitoring wells with flush-mount casings</li><li>• Backfill bottom of borehole annulus with bentonite to depth required for the bottom of the well</li><li>• Construct well with Sch40 PVC piping with 1.5 m to 3.0 m of screen followed by solid riser pipe to bring the well to grade. The length of the well screen should be adjusted to allow for the construction of the well with sufficient solid riser above.</li><li>• Ensure screen is installed so it straddles the water table</li><li>• Fill annulus of each well with sand to 0.3 m above the screen</li><li>• Place bentonite around solid riser from above the sand pack to just below the ground surface</li></ul> <p><b>GENERAL</b></p> <ul style="list-style-type: none"><li>• Document field conditions, observations, and notes in the field log book</li></ul> <p>Collect soils continuously during drilling for screening purposes. Jar soils (BTEX/F1, VOCs) for all intervals as they may be required for chemical analysis of VOCs. After completing the field program, contact the Project Manager to discuss which samples are to be submitted for lab analysis. In general, we will submit the soil sample from the horizon exhibiting the highest RKI/PID reading for BTEX/PHCs and VOC analysis along with a sample from deeper in the borehole if possible, and a "worst-case" sample (based on field observations and professional judgment) for metals/inorganics, PAH (2 boreholes only) and PCBs (2 boreholes only). In addition, four samples of native soil will be submitted for analysis of metals/inorganics. The analysis will be conducted by Maxxam Analytics.</p> <p>All monitoring wells will be developed and groundwater sampled in accordance with the SOPs. The groundwater sampling program will be determined based on the results of soil sampling.</p>		
Special Instructions												
MW1	Soil and Groundwater	PHCs, VOCs, PAHs, metals and inorganics	1	--	--	2	2	2	MW1 and MW2 are proposed to investigate possible contaminants from USTs present prior to 1956. USTs and piping were reportedly removed and the investigation is assessing the potential for residual contamination. MW2 also assesses the former pump island area.			
MW2			--	--	1	1	2	2				
APEC-2												
MW2	Soil and Groundwater	PHCs, PAHs, metals and inorganics	Parameters to be sampled are included in APEC -1						MW2 is located closer to the former pump island.			
MW6			--	--	--	2	2	2	MW6 is proposed to investigate quality of fill used as backfill for previous remediation as well as possible migration of contamination from former pump island location.			
APEC-3												
MW3	Soil and Groundwater	PHCs, VOCs, metals and inorganics	1	--	--	2	2	2	MW3 is proposed to investigate possible residual contamination from second UST location (after 1956). USTs were reportedly removed during site decommissioning.	<p><b>GROUNDWATER SAMPLING AND ANALYSIS</b></p> <ul style="list-style-type: none"><li>• Approximately one week after drilling and well development, groundwater will be monitored and sampled. Samples will be collected according to groundwater sampling SOPs and recovered in laboratory prepared bottles. Samples will be submitted from each borehole for analysis of metals and inorganics, VOCs and PHCs. Depending on the results of soil analysis and field monitoring, samples may also be analysed for PAHs or PCBs. One duplicate sample will be submitted for each analytical method and a trip blank will be submitted for analysis of VOCs and the F1 fraction of PHCs.</li></ul>		
APEC-4												
MW1	Soil and Groundwater	Sodium, chloride, electrical conductivity and sodium adsorption ratio (inorganics)	Parameters to be sampled are included in APEC -1, 2, 3, 5, 6, 7 and 8.						Samples from various depths at each of the boreholes will be submitted for analysis of inorganic parameters to assess the potential for salt impacts across the entire site.			
MW2												
MW3												
MW4												
MW5												
MW6												
MW7												
MW8												
APEC-5												
MW4	Soil and Groundwater	PHCs, PAHs, metals and inorganics and VOCs at MW4	--	--	--	1	2	2	MW4 is proposed to assess potential for migration of contamination from former fuel storage tank.			
MW5			--	--	1	1	--	2	MW5 is proposed to investigate possible contamination from fuel oil UST. USTs were reportedly removed during site decommissioning.			
APEC-6												
MW1, MW2, MW3, MW5, MW6, MW7, MW8	Soil and Groundwater	PAHs, metals and inorganics	Parameters to be sampled are included in APEC-1, 2, 3, 5, 7, 8						Monitoring wells are located in areas of previous remediation that will have been backfilled using fill of unknown quality. Sampling for identified parameters will assess fill quality.			
APEC-7												
MW7	Soil and Groundwater	PHCs, PCBs, metals and inorganics	--	1	--	2	--	2	MW7 is proposed to investigate area of former underground hoist that was reportedly removed during site decommissioning.			
APEC-8												
MW8	Soil and Groundwater	PHCs, PAHs, PCBs, VOCs, metals and inorganics	--	1	--	1	2	2	MW8 is proposed to investigate area of former waste oil UST that may have been used for solvents or oil containing PCBs. UST was reportedly removed during site decommissioning.			
SUBTOTAL			2	2	2	12	12	16				
Quality Assurance/Quality Control												
Field Duplicate			--	1	1	2	2	2				
TCLP (VOCs/SVOCs/metals and inorganics/PCBs)									Submit one sample for TCLP analysis to support off-site soil disposal options.			
TOTAL LABORATORY SAMPLES (SOIL)			2	3	3	14	14	18				

Table 1: PTTW Soil Sampling and Monitoring Well Installation, 770 Somerset Street West and 13 LeBreton Street, Ottawa, Ontario

Primary Objectives

- 1) Characterize the nature and extent of potential contaminants on 13 LeBreton, based on the findings of the Phase One ESA
- 2) Identify if gross soil contamination is present on 13 LeBreton to support excess material management during redevelopment activities
- 3) Collect data to support the application for a Permit to Take Water (PTTW) for the development and for a Record of Site Condition on 13 LeBreton Street.

Figure ID	Media	Potential Contaminants of Concern in Soil and Groundwater	SOIL						Purpose and Justification	General Instructions
			Grain-Size	PCBs	PAHs	Metals & Inorganics	VOCs	BTEX/PHCs (F1-F4)		
									PhaseTwo ESA for 13 LeBreton Street, a residential Property. Update to a Phase Two ESA for 770 Somerset Street West, a former gas station. Updated information will be obtained during bedrock drilling to support a PTTW.	Collect soil and groundwater samples as necessary to support RSC for 13 LeBreton Street, noting areas of concern on adjacent property at 770 Somerset Street West. Only bedrock groundwater data will be obtained for 770 Somerset Street West.
									<p>Based on the results of the Phase One ESA, 770 Somerset Street West has been used as a commercial garage and gasoline retail outlet. Previous soil and overburden groundwater quality was investigated in November 2011 by MMM Group Limited. Petroleum hydrocarbon impacted soils were removed during gas station decommissioning and earth fill was imported. APECs relate to earth fill and application of road salt for winter ice control on this parking lot were investigated and a risk assessment established property specific standards for groundwater on the site. The 13 LeBreton Street property is a residence and APECs are limited to the use of the adjacent property for a gas station and the potential for home heating fuel storage on the property.</p> <p>The purpose of this Phase Two ESA is to characterize soil and groundwater conditions on the 13 LeBreton Street property, and to characterize bedrock groundwater conditions on the 770-Somerset St. W. Property, for the purpose of filing a RSC.</p>	<p>Review SOPs for borehole drilling, soil sampling, field screening, and monitor well installation, prior to commencement of field activities. Unless otherwise specified, adhere to the following general instructions:</p> <p><b>BOREHOLES</b></p> <ul style="list-style-type: none"><li>• Advance soil borings to refusal on bedrock, which is anticipated at approximately 4 m to 5 m. Groundwater should be encountered within this depth.</li><li>• Conduct continuous field screening of soils (headspace) using a PID and RKI, for boreholes on 13 LeBreton Street only, and collect soil samples near the bottom of the overburden.</li><li>• Continue drilling into bedrock, as follows: MW5A (7 m into rock, no coring), MW9A (7 m into rock, core retrieval), MW9B (3 m into rock, no coring), MW10 (3 m into rock, no coring), MW11 (3 m into rock, no coring).</li></ul> <p><b>MONITORING WELLS</b></p> <ul style="list-style-type: none"><li>• Complete all five boreholes as 50mm monitoring wells with flush-mount casings, open hole into the bedrock, as follows: MW5A and MW9A (open hole interval from 4 - 7 m below top of rock, MW9B, MW10, and MW11 (open hole from 0.5 to 3 m below top of rock).</li><li>• Backfill bottom of borehole annulus with bentonite to depth required for the bottom of the well</li><li>• Construct well with Sch40 PVC, including well screens and riser pipes, as recommended by Strata Soil Sampling Ltd. The length of the well screen should be adjusted to allow for the construction of the well with sufficient solid riser above.</li><li>• Fill annulus of each well with sand to 0.3 m above the screen</li><li>• Place bentonite around solid riser from above the sand pack to just below the ground surface</li></ul> <p><b>GENERAL</b></p> <ul style="list-style-type: none"><li>• Document field conditions, observations, and notes in the field log book</li></ul>
770 Somerset Street West										Special Instructions
MW5A	Groundwater only	Not applicable	--	--	--	--	--	--	Soil and groundwater impacts in the overburden will be remediated during building construction. Bedrock groundwater quality will be investigated to support a PTTW application for dewatering during construction, excavation.	Collect soils continuously during drilling for screening purposes. Jar soils (BTEX/F1, VOCs) for lower overburden from boreholes on 13 LeBreton Street only (MW9B, MW10, and MW11). After completing the field program, contact the Project Manager to discuss which samples are to be submitted for lab analysis. In general, we will submit the soil sample from the horizon exhibiting the highest RKI/PID reading for BTEX/PHCs and VOC analysis along with a sample from deeper in the borehole if possible, and a "worst-case" sample (based on field observations and professional judgment) for metals/inorganics (each borehole), and PAHs (2 boreholes only).
MW9A			--	--	--	--	--	--		
13 LeBreton Street										
MW9B	Soil and Groundwater	PHCs, VOCs, PAHs, metals and inorganics	--	--	1	1	1	1	Assess soil quality at the north boundary for the possibility for impacts from off-site use as a gas station.	
MW10, MW11	Soil and Groundwater		--	--	1	2	1	2	Assess soil quality for parameters that may have migrated from the off-site use of the north as a gas station.	
SUBTOTAL			--	--	1	3	2	3		
Quality Assurance/Quality Control										
Field Duplicate	Soil for FD		--	--	1	1	1	1		
TCLP	Soil		--	--	--	--	--	--	Rely on data from 770 Somerset Street West as representing worst case.	
TOTAL LABORATORY SAMPLES (SOIL)			0	0	2	4	3	4		
GROUNDWATER										

Table 1: PTTW Soil Sampling and Monitoring Well Installation, 770 Somerset Street West and 13 LeBreton Street, Ottawa, Ontario

Primary Objectives

- 1) Characterize the nature and extent of potential contaminants on 13 LeBreton, based on the findings of the Phase One ESA
- 2) Identify if gross soil contamination is present on 13 LeBreton to support excess material management during redevelopment activities
- 3) Collect data to support the application for a Permit to Take Water (PTTW) for the development and for a Record of Site Condition on 13 LeBreton Street.

Figure ID	Media	Potential Contaminants of Concern in Soil and Groundwater	SOIL							Purpose and Justification	General Instructions
			Grain-Size	PCBs	PAHs	Metals & Inorganics	VOCs	BTEX/PHCs (F1-F4)			
Borehole ID	Media	Potential Contaminants of Concern in Soil and Groundwater	Grain-Size	PCBs	PAHs	Metals & Inorganics	VOCs	BTEX/PHCs (F1-F4)	Purpose and Justification	Notes:	
MW5A	Groundwater	PHCs, PCBs, VOCs, PAHs, metals and inorganics.	--	--	1	1	1	1	Groundwater quality inbedrock needs to be confirmed to support the application for PTTW given hisorical land uses. At MW5A, analysis will comply with O. Reg. 153/04, as amended and at MW9A, analysis will include the City of Ottawa Sewer Use By-Law parameters.  Groundwater quality at 13 LeBreton Street needs to be confirmed for PHCs, VOCs, metals and inorganics.	All monitoring wells will be developed and groundwater sampled in accordance with the SOPs based on the results of soil sampling. <b>GROUNDWATER SAMPLING AND ANALYSIS</b> At least 48 hours after drilling, wells will be developed. The following day, groundwater will be monitored and sampled. Samples will be collected according to groundwater sampling SOPs and recovered in laboratory prepared bottles. Samples will be submitted from each borehole for analysis indicated. Depending on the results of soil analysis and field monitoring, additional sampling may be identified. One duplicate sample will be submitted for analytical methods identified and a trip blank will be submitted for analysis of VOCs.	
MW9A	Groundwater		--	1	1	1	1	1			
MW9B	Groundwater		--	--	1	1	1	1			
MW10	Groundwater		--	--	--	1	--	1			
MW11	Groundwater		--	--	--	1	--	1			
Duplicates	Groundwater	As noted.	--	--	1	1	1	1	As noted.		
Trip Blank	Groundwater	AS noted.	--	--	--	--	1	--	Trip blank as noted.		
TOTAL LABORATORY SAMPLES (Groundwater)			0	1	4	6	5	6			



# **Sampling and Analysis Plan, Groundwater Sampling at MW5C at 770 Somerset Street West, Ottawa, Ontario**

## Primary Objectives

1) Verify groundwater quality for metals and chloride at MW5C.

Figure ID	Media	Potential Contaminants of Concern in Groundwater	Metals & Inorganics	General Instructions
				Monitor depth to groundwater at each accessible well and collect groundwater sample and duplicate from MW5C
				Purge well of stagnant groundwater over three separate visits and record physical properties (pH, conductivity, temperature) to demonstrate representative groundwater conditions.
<b>770 Somerset Street West</b>				
MW5C	Groundwater	ICPMS metals and chloride	1	Soil and groundwater impacts in the overburden have been investigated. The distribution of sodium and chloride in the groundwater needs to be further documented.
SUBTOTAL			1	
<b>Quality Assurance/Quality Control</b>				
Field Duplicate	Groundwater		1	Name the duplicate MW5D
<b>TOTAL LABORATORY GROUNDWATER SAMPLES</b>			2	

**A-2**  
**FINALIZED FIELD LOGS**



Project No: 14-12815-001-PH2

Project: Environmental Investigation

Client: DCR Phoenix Homes

Location: 770 Somerset Street West, Ottawa, Ontario

## Log of Borehole: MW-1

Easting: 444506

Zone: 18 T

Northing: 5028741

Datum: NAD 83

MOE ID#:

SUBSURFACE PROFILE					Type	Sample Number	Recovery (%)	Vapour Conc. (PID/RKI) (ppm)	Remarks
Depth	Symbol	Description	Depth/Elev	Well Data					
0		Ground Surface	74.63						
0		<b>GRAVELY SAND</b> Brown/grey, trace silt, asphalt fragments, loose, dry	0.00						
1									
2					DP	SS1		6.5/0	MW1-SS1 Analyzed for Metals & Inorganics
3									
4		<b>SILTY FINE SAND</b> Light brown, loose, dry	73.41	1.22					
5									
6									
7					DP	SS2		0.5/0	MW1-SS2 Analyzed for Metals & Inorganics
8		<b>CLAYEY SANDY SILT TILL</b> Brown/grey, firm to dense, moist	72.19	2.44					
9									
10		<b>SILTY FINE SAND</b> Grey, trace clay, dilatent, firm, wet, occasional brown staining	71.58	3.05					
11					DP	SS3		0.4/0	MW1-SS3 Analyzed for PHCs, VOCs
12									
13		End of Borehole	70.78	3.85					
14		Borehole terminated due to refusal on assumed bedrock							
15									
16									

Drilled By: Strata Soil

Drill Method: Air Rotary

Drill Date: November 8, 2012

MMM Group Limited  
100 Commerce Valley Drive West  
Thornhill, Ontario L3T 0A1

Borehole Log is for Environmental  
Purposes Only

Logged By: PVD

Checked By: CIA

Hole Size: 0.15 m

Sheet: 1 of 1



**Project No:** 14-12815-001-PH2  
**Project:** Environmental Investigation  
**Client:** DCR Phoenix Homes  
**Location:** 770 Somerset Street West, Ottawa, Ontario

## Log of Borehole: MW-2

**Easting:** 444516    **Zone:** 18 T  
**Northing:** 5028746    **Datum:** NAD 83

**MOE ID#:**

SUBSURFACE PROFILE					Type	Sample Number	Recovery (%)	Vapour Conc. (PID/RK) (ppm)	Remarks
Depth	Symbol	Description	Depth/Elev	Well Data					
0		Ground Surface	75.33						
0		ASPHALT	0.00						
1		Brown sand and gravel fill, loose	75.03						
1		GRAVELY SAND	0.30						
2		Brown, trace silt, loose, moist			AR	SS1		13/0?	
3									
4									
5		Concrete	73.81						
6			73.50						
6		GRAVELY SILTY SAND	1.83						
7		Brown, firm, moist			AR	SS2		227/0?	MW2-SS2 Analyzed for Metals & Inorganics, PAHs, PHCs, VOCs
8									
9		GRAVELY SAND	72.59						
10		Brown/grey, trace silt, firm, moist to wet	2.74						
11					AR	SS3		132/0?	MW2-SS3 Analyzed for PHCs, VOCs
12		LIMESTONE BEDROCK	71.78						
13			3.55						
13		End of Borehole	71.43						
14			3.90						
15									
16									

Drilled By: **Strata Soil**

Drill Method: **Air Rotary**

Drill Date: **November 8, 2012**

MMM Group Limited  
 100 Commerce Valley Drive West  
 Thornhill, Ontario L3T 0A1

Borehole Log is for Environmental  
 Purposes Only

Logged By: **PVD**

Checked By: **CIA**

Hole Size: **0.15 m**

Sheet: **1 of 1**



**Project No:** 14-12815-001-PH2  
**Project:** Environmental Investigation  
**Client:** DCR Phoenix Homes  
**Location:** 770 Somerset Street West, Ottawa, Ontario

## Log of Borehole: MW-3

**Easting:** 444537    **Zone:** 18 T  
**Northing:** 5028751    **Datum:** NAD 83

**MOE ID#:**

SUBSURFACE PROFILE					Type	Sample Number	Recovery (%)	Vapour Conc. (PID/RK) (ppm)	Remarks
Depth	Symbol	Description	Depth/Elev	Well Data					
0		Ground Surface	74.96						
0		<b>SAND AND GRAVEL</b> Grey to grey-brown, asphalt mixed with sand and gravel, loose, dry	0.00						
1									
2		<b>SAND</b> Light brown, medium grained, some gravel, loose, moist	74.35		DP	SS1		11.8/0	MW3-SS1 Analyzed for Metals & Inorganics
3			0.61						
4		- Concrete fragments present at 1.22 mbgs							
5									
6									
7		- Concrete fragments present at 1.98 mbgs			DP	SS2		5.0/0	MW3-SS2 Analyzed for Metals & Inorganics
8									
9		- Thin gravel seam at 2.64 mbgs							
10									
11		- Gravely seam present at 3.25 mbgs			DP	SS3		6.1/0	MW3-SS3 Analyzed for PHCs, VOCs
12		<b>LIMESTONE BEDROCK</b> Grey	71.46						
			3.50						
13		End of Borehole	71.15						
			3.81						
14									
15									
16									

Drilled By: **Strata Soil**

Drill Method: **Direct Push**

Drill Date: **November 8, 2012**

MMM Group Limited  
 100 Commerce Valley Drive West  
 Thornhill, Ontario L3T 0A1

Borehole Log is for Environmental  
 Purposes Only

Logged By: **PVD**

Checked By: **CIA**

Hole Size: **0.15 m**

Sheet: **1 of 1**



**Project No:** 14-12815-001-PH2  
**Project:** Environmental Investigation  
**Client:** DCR Phoenix Homes  
**Location:** 770 Somerset Street West, Ottawa, Ontario

## Log of Borehole: MW-4

**Easting:** 444510    **Zone:** 18 T  
**Northing:** 5028731    **Datum:** NAD 83

**MOE ID#:**

SUBSURFACE PROFILE					Type	Sample Number	Recovery (%)	Vapour Conc. (PID/RKI) (ppm)	Remarks
Depth	Symbol	Description	Depth/Elev	Well Data					
0		Ground Surface	73.54						
0		ASPHALT AND GRAVEL	0.00						
1		Grey to grey-brown, loose							
2		SAND	72.93		DP	SS1		2.1/10	
3		Dark brown, trace to some silt, trace gravel	0.61						
4									
5		- Becoming dense and moist at 1.52 mbgs							
6									
7					DP	SS2		11.8/0	MW4-SS2 Analyzed for Metals & Inorganics, PHCs, VOCs
8		- Becoming wet and dilatent at 2.44 mbgs							
9									
10		End of Borehole	70.65		DP	SS3		10/0	
11		Borehole terminated due to refusal on limestone bedrock	2.89						
12									
13									
14									
15									
16									

Drilled By: **Strata Soil**

Drill Method: **Direct Push**

Drill Date: **November 9, 2012**

MMM Group Limited  
 100 Commerce Valley Drive West  
 Thornhill, Ontario L3T 0A1

Borehole Log is for Environmental  
 Purposes Only

Logged By: **PVD**

Checked By: **CIA**

Hole Size: **0.15 m**

Sheet: **1 of 1**





**Project No:** 14-12815-001-PH2  
**Project:** Environmental Investigation  
**Client:** DCR Phoenix Homes  
**Location:** 770 Somerset Street West, Ottawa, Ontario

## Log of Borehole: MW-5A

**Easting:** 444514    **Zone:** 18T  
**Northing:** 5028731    **Datum:** NAD 83

**MOE ID#:** N/A

SUBSURFACE PROFILE					Type	Sample Number	Recovery (%)	Vapour Conc. (PID/RKI) (ppm)	Remarks
Depth	Symbol	Description	Depth/Elev	Well Data					
0		Ground Surface	74.60						
0		<b>PAVEMENT/SUB-PAVEMENT</b> Dark brown gravelly sand, asphalt fragments, loose, moist	0.00						-The overburden and bedrock in this borehole were not cored, however the depth to bedrock was recorded. The overburden stratigraphy is interpreted to be the same as at adjacent monitoring well MW-5B (MW-5 as per MMM Group 2012). The bedrock is interpreted to be the same as nearby hole MW-9A, as suggested by bedrock cuttings observed at this location during drilling.
1									
2			73.99						
2		<b>FILL</b> Brown grey, trace gravel and silt, loose to firm, moist	0.61						-Static water level at 70.93 masl on October 28, 2013  -General nature of bedrock interpreted to be similar to that of MW-9A based on observations of bedrock drill cuttings  -Limestone not cored -Water encountered in the bedrock during drilling
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13			70.64						
13		<b>BEDROCK</b> Grey brown limestone, some shaly partings	3.96						
14									
15									
16									

Drilled By: **Strata Soil**

Drill Method: **Direct Push**

Drill Date: **October 25, 2013**

MMM Group Limited  
 100 Commerce Valley Drive West  
 Thornhill, Ontario L3T 0A1

Borehole Log is for Environmental  
 Purposes Only

Logged By: **PVD**

Checked By: **CIA**

Hole Size: **0.15 m**

Sheet: **1 of 3**



Project No: 14-12815-001-PH2

Project: Environmental Investigation

Client: DCR Phoenix Homes

Location: 770 Somerset Street West, Ottawa, Ontario

## Log of Borehole: MW-5A

Easting: 444514

Zone: 18T

Northing: 5028731

Datum: NAD 83

MOE ID#: N/A

### SUBSURFACE PROFILE

Depth	Symbol	Description	Depth/Elev	Well Data	Type	Sample Number	Recovery (%)	Vapour Conc. (PID/RKI) (ppm)	Remarks
17									
18									
19									
20	6								
21									
22									
23	7								
24									
25									
26	8								
27									
28									
29	9								
30									
31									
32									

Drilled By: Strata Soil

Drill Method: Direct Push

Drill Date: October 25, 2013

MMM Group Limited  
100 Commerce Valley Drive West  
Thornhill, Ontario L3T 0A1

Borehole Log is for Environmental  
Purposes Only

Logged By: PVD

Checked By: CIA

Hole Size: 0.15 m

Sheet: 2 of 3



**Project No:** 14-12815-001-PH2

**Project:** Environmental Investigation

**Client:** DCR Phoenix Homes

**Location:** 770 Somerset Street West, Ottawa, Ontario

## Log of Borehole: MW-5A

**Easting:** 444514

**Zone:** 18T

**Northing:** 5028731

**Datum:** NAD 83

**MOE ID#:** N/A

SUBSURFACE PROFILE					Type	Sample Number	Recovery (%)	Vapour Conc. (PID/RKI) (ppm)	Remarks
Depth	Symbol	Description	Depth/Elev	Well Data					
33	11								
34									
35									
36									
37									
38									
39									
39	12		62.56						
		End of Borehole	12.04						
40									
41									
42									
43	13								
44									
45									
46	14								
47									
48									
49									

Drilled By: **Strata Soil**

Drill Method: **Direct Push**

Drill Date: **October 25, 2013**

MMM Group Limited  
100 Commerce Valley Drive West  
Thornhill, Ontario L3T 0A1

Borehole Log is for Environmental  
Purposes Only

Logged By: **PVD**

Checked By: **CIA**

Hole Size: **0.15 m**

Sheet: **3 of 3**



Project No: 14-12815-001-PH2

Project: Environmental Investigation

Client: DCR Phoenix Homes

Location: 770 Somerset Street West, Ottawa, Ontario

## Log of Borehole: MW-5B

Easting: 444514

Zone: 18 T

Northing: 5028730

Datum: NAD 83

MOE ID#:

SUBSURFACE PROFILE					Type	Sample Number	Recovery (%)	Vapour Conc. (PID/RKI) (ppm)	Remarks
Depth	Symbol	Description	Depth/Elev	Well Data					
0		Ground Surface	74.66						
0		<b>GRAVELY SAND</b> Dark brown, asphalt fragments, loose, moist	0.00						
1									
2		<b>SAND</b> Brown/grey, trace gravel and silt, loose to firm, moist	74.05		DP	SS1		8.0/10	MW5-SS1 Analyzed for Metals & Inorganics
3			0.61						
4									
5									
6									
7					DP	SS2		12.1/10	MW5-SS2 Analyzed for PAHs
8									
9									
10					DP	SS3		9.5/10	MW5-SS3 Analyzed for PHCs, VOCs
11									
12		- Becoming wet at 3.66 mbgs							
13		<b>LIMESTONE BEDROCK</b>	70.70						
			3.96						
			70.55						
		End of Borehole	4.11						
14									
15									
16									

Drilled By: Strata Soil

Drill Method: Direct Push

Drill Date: November 9, 2012

MMM Group Limited  
100 Commerce Valley Drive West  
Thornhill, Ontario L3T 0A1

Borehole Log is for Environmental  
Purposes Only

Logged By: PVD

Checked By: CIA

Hole Size: 0.15 m

Sheet: 1 of 1



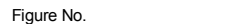
Figure No. \_\_\_\_\_

## LOG OF BOREHOLE MW5C

Project No. 14-12815-001-PH2  
Project: DCR Phoenix Homes  
Location: 770 Somerset Street West, Ottawa, Ontario Co-ordinates: 444509E, 5028744N  
Date Drilled: 08/10/2014 Datum: NAD 83  
Drill Type: ODEX Logged By: AR  
Drilling Contractor: Strata Soil Checked By: CIA

- SPT (N) Value  
▲ Total Organic Volatiles (ppm)

DEPTH (m bgs) (masl)	SYMBOL	SOIL DESCRIPTION	WELL	INSTALLATION DETAILS	SAMPLE ID	SOIL SAMPLE TEST	Standard Penetration Test N Value			
							20	40	60	80
100							Total Organic Volatiles (ppm)			
							10	20	30	40
0.40	99.6	ASPHALT		Concrete						
		FILL Brown, medium sand, some silt, some gravel, loose, moist.		Bentonite seal	MW5C-1		▲			
					MW5C-2		▲			
					MW5C-3		▲			
3.96	96.04	BEDROCK Grey brown limestone, some shaly partings.								



Project No.	<u>14-12815-001-PH2</u>		
Project:	<u>DCR Phoenix Homes</u>		
Location:	<u>770 Somerset Street West, Ottawa, Ontario</u>	Co-ordinates:	<u>444509E, 5028744N</u>
Date Drilled:	<u>08/10/2014</u>	Datum:	<u>NAD 83</u>
Drill Type:	<u>ODEX</u>	Logged By:	<u>AR</u>
Drilling Contractor:	<u>Strata Soil</u>	Checked By:	<u>CIA</u>

● SPT (N) Value

MMMW REPORT VER 3 2014 MW5C.GPJ GINT STD CANADA LAB.GDT 25/3/15





Figure No. \_\_\_\_\_

## LOG OF BOREHOLE MW5C

Project No. 14-12815-001-PH2  
 Project: DCR Phoenix Homes  
 Location: 770 Somerset Street West, Ottawa, Ontario Co-ordinates: 444509E, 5028744N  
 Date Drilled: 08/10/2014 Datum: NAD 83  
 Drill Type: ODEX Logged By: AR  
 Drilling Contractor: Strata Soil Checked By: CIA

● SPT (N) Value

DEPTH (mbgs) (masl)	SYMBOL	SOIL DESCRIPTION	WELL	INSTALLATION DETAILS	SAMPLE ID	SOIL SAMPLE TEST	Standard Penetration Test N Value			
							20	40	60	80
84							Total Organic Volatiles (ppm)			
							10	20	30	40
16.26 83.74		BEDROCK Grey brown limestone, some shaly partings. (continued)		No. 2 sand filter pack  #10 Screen						
19.81 80.19		End of borehole at 19.80 mbgs								
		Water level upon completion was 80.6 masl.  Note: The bedrock in this borehole was not cored, however the depth to bedrock was recorded. The bedrock is interpreted to be the same as nearby hole MW-9A.		Water measured on October 9, 2014 83.74 masl 16.26 mbgs  Well Diameter: 38 mm  Well Material: Schedule 40 PVC						



Project No: 14-12815-001-PH2

Project: Environmental Investigation

Client: DCR Phoenix Homes

Location: 770 Somerset Street West, Ottawa, Ontario

## Log of Borehole: MW-6

Easting: 444520

Zone: 18 T

Northing: 5028740

Datum: NAD 83

MOE ID#:

SUBSURFACE PROFILE					Type	Sample Number	Recovery (%)	Vapour Conc. (PID/RKI) (ppm)	Remarks
Depth	Symbol	Description	Depth/Elev	Well Data					
0		Ground Surface	75.55						
0		<b>SAND AND GRAVEL</b> Dark brown, asphalt fragments, loose, moist	0.00						
1									
2					DP	SS1		7.2/10	
3									
4									
5									
6									
7					DP	SS2		18.7/10	MW6-SS2 Analyzed for PHCs, VOCs
8									
9		<b>GRAVELY SAND</b> Brown/grey, trace silt, firm, moist	73.11						
10			2.44						
11					DP	SS3		31/0	MW6-SS3 Analyzed for PHCs, VOCs
12									
13		<b>LIMESTONE BEDROCK</b>	71.64						
14		End of Borehole	71.44						
15			4.11						
16									

Drilled By: Strata Soil

Drill Method: Direct Push

Drill Date: November 9, 2012

MMM Group Limited  
100 Commerce Valley Drive West  
Thornhill, Ontario L3T 0A1

Borehole Log is for Environmental  
Purposes Only

Logged By: PVD

Checked By: CIA

Hole Size: 0.15 m

Sheet: 1 of 1



Project No: 14-12815-001-PH2

Project: Environmental Investigation

Client: DCR Phoenix Homes

Location: 770 Somerset Street West, Ottawa, Ontario

## Log of Borehole: MW-7

Easting: 444535

Zone: 18 T

Northing: 5028739

Datum: NAD 83

MOE ID#:

SUBSURFACE PROFILE					Type	Sample Number	Recovery (%)	Vapour Conc. (PID/RKI) (ppm)	Remarks
Depth	Symbol	Description	Depth/Elev	Well Data					
0		Ground Surface	75.97 0.00						
0		<b>SAND AND GRAVEL</b> Grey, trace silt, asphalt fragments, loose							
2		<b>GRAVELY SAND</b> Grey/Brown, trace to some silt, layers of fine to medium sand	75.36 0.61		DP	SS1		1/10	
2					DP	SS2		0.6/10	MW7-SS2 Analyzed for Metals & Inorganics
3		- From 2.59 to 2.74 mbgs: Fine sand seam							
3		- From 3.01 to 3.2 mbgs: Fine sand seam			DP	SS3		2.5/10	MW7-SS3 Analyzed for PCBs, PHCs, VOCs
3		- Becoming light grey-brown in colour, fine to medium grained							
12		<b>LIMESTONE BEDROCK</b>	72.47 3.50						
13		End of Borehole	72.01 3.96						

Drilled By: Strata Soil

Drill Method: Direct Push

Drill Date: November 8, 2012

MMM Group Limited  
100 Commerce Valley Drive West  
Thornhill, Ontario L3T 0A1

Borehole Log is for Environmental  
Purposes Only

Logged By: PVD

Checked By: CIA

Hole Size: 0.15 m

Sheet: 1 of 1



Project No: 14-12815-001-PH2

Project: Environmental Investigation

Client: DCR Phoenix Homes

Location: 770 Somerset Street West, Ottawa, Ontario

## Log of Borehole: MW-8

Easting: 444539

Zone: 18 T

Northing: 5028743

Datum: NAD 83

MOE ID#:

SUBSURFACE PROFILE					Type	Sample Number	Recovery (%)	Vapour Conc. (PID/RK) (ppm)	Remarks
Depth	Symbol	Description	Depth/Elev	Well Data					
0		Ground Surface	75.98						
0		GRAVEL FILL	0.00						
1		Asphalt fragments							
2		SAND	75.37		DP	SS1		28/0	
3		Brown/yellowish brown, some gravel, trace silt, loose to firm, moist	0.61						
4									
5									
6									
7					DP	SS2		58.3/0	MW8-SS2 Analyzed for Metals & Inorganics, PHCs, VOCs
8									
9									
10		-Becoming wet at 3.05 mbgs							
11					DP	SS3		37.9/0	MW8-SS3 Analyzed for PCBs, PHCs, VOCs
12			72.27						
13		LIMESTONE BEDROCK	3.71						
14		Grey, moist, hard							
15			71.87						
16		End of Borehole	4.11						

Drilled By: Strata Soil

Drill Method: Direct Push

Drill Date: November 8, 2012

MMM Group Limited  
100 Commerce Valley Drive West  
Thornhill, Ontario L3T 0A1

Borehole Log is for Environmental  
Purposes Only

Logged By: PVD

Checked By: CIA

Hole Size: 0.15 m

Sheet: 1 of 1



**Project No:** 14-12815-001-PH2  
**Project:** Environmental Investigation  
**Client:** DCR Phoenix Homes  
**Location:** 770 Somerset Street West, Ottawa, Ontario

## Log of Borehole: MW-9A

**Easting:** 444522    **Zone:** 18T  
**Northing:** 5028733    **Datum:** NAD 83  
**MOE ID#:** A149995

SUBSURFACE PROFILE					Type	Sample Number	Recovery (%)	Vapour Conc. (PID/RKI) (ppm)	Remarks
Depth	Symbol	Description	Depth/Elev	Well Data					
0		Ground Surface	75.84						
0		<b>PAVEMENT/SUB-PAVEMENT</b> Asphalt followed by dark grey sandy gravel, loose, dry (As interpreted from MW-5 and MW-7)	0.00						
2		<b>GRAVELLY SAND FILL</b> Grey brown, trace to some silt, layers of fine to medium sand	75.23						
0.61									
16									
5									
-Overburden not cored. Generally observed sand at nearby MW-5B, MW-7, and MW-9B									

Drilled By: **Strata Soil**

Drill Method: **Direct Push**

Drill Date: **October 24, 2013**

MMM Group Limited  
 100 Commerce Valley Drive West  
 Thornhill, Ontario L3T 0A1

Borehole Log is for Environmental  
 Purposes Only

Logged By: **PVD**

Checked By: **CIA**

Hole Size: **0.15 m**

Sheet: **1 of 3**



Project No: 14-12815-001-PH2

Project: Environmental Investigation

Client: DCR Phoenix Homes

Location: 770 Somerset Street West, Ottawa, Ontario

## Log of Borehole: MW-9A

Easting: 444522

Zone: 18T

Northing: 5028733

Datum: NAD 83

MOE ID#: A149995

SUBSURFACE PROFILE					Type	Sample Number	Recovery (%)	Vapour Conc. (PID/RKl) (ppm)	Remarks
Depth	Symbol	Description	Depth/Elev	Well Data					
17	6	<b>WEATHERED LIMESTONE</b> Bedrock: gravelly cuttings, very limited core recovery	70.66 5.18	NQ	SS1	>90			-Static water level 70.71 masl on October 29, 2013 -Top of bedrock encountered at 5.18 mbgs
18									
19	7	<b>BEDROCK (LIMESTONE)</b> Grey to grey brown, fossiliferous, occasional thin shaly seams, hard, minor to moderate weathering, fractures primarily filled with precipitates, core broken at several intervals, fractures primarily horizontal	70.05 5.79	NQ	SS2	>90			
20									
21									
22									
23	8			NQ	SS3	>90			
24									
25									
26									
27	9	<b>BEDROCK (LIMESTONE)</b> Grey to grey brown, shaly limestone, fossiliferous, occasional thin shaly seams, hard, very little weathering	67.61 8.23						
28									
29									
30									
31									
32									

Drilled By: Strata Soil

Drill Method: Direct Push

Drill Date: October 24, 2013

MMM Group Limited  
100 Commerce Valley Drive West  
Thornhill, Ontario L3T 0A1

Borehole Log is for Environmental  
Purposes Only

Logged By: PVD

Checked By: CIA

Hole Size: 0.15 m

Sheet: 2 of 3





Project No: 14-12815-001-PH2

Project: Environmental Investigation

Client: DCR Phoenix Homes

Location: 770 Somerset Street West, Ottawa, Ontario

## Log of Borehole: MW-9A

Easting: 444522

Zone: 18T

Northing: 5028733

Datum: NAD 83

MOE ID#: A149995

SUBSURFACE PROFILE							Remarks
Depth	Symbol	Description	Depth/Elev	Well Data	Type	Sample Number	
33	11				NQ	SS4	>90
34							
35							
36			64.87				
37	12	<b>BEDROCK (LIMESTONE)</b> Grey to grey brown, shaly limestone, occasional shale seams, moderate to highly weathered, vertical fracture noted	10.97				-Vertical break covered in calcite crystallization
38							
39			64.11		NQ	SS5	80
40		<b>BEDROCK (LIMESTONE)</b> Grey to grey brown, shaly limestone, occasional shale seams, fossiliferous, hard, very little weathering	11.73				-Horizontal breaks every 0.08 m-0.15 m
41		End of Borehole	63.34				
42			12.50				
43	13						
44							
45							
46	14						
47							
48							
49							

Drilled By: Strata Soil

Drill Method: Direct Push

Drill Date: October 24, 2013

MMM Group Limited  
100 Commerce Valley Drive West  
Thornhill, Ontario L3T 0A1

Borehole Log is for Environmental  
Purposes Only

Logged By: PVD

Checked By: CIA

Hole Size: 0.15 m

Sheet: 3 of 3



Project No: 14-12815-001-PH2

Project: Environmental Investigation

Client: DCR Phoenix Homes

Location: 13 LeBreton Street, Ottawa, Ontario

## Log of Borehole: MW-9B

Easting: 444524

Zone: 18T

Northing: 5028730

Datum: NAD 83

MOE ID#: A154233

SUBSURFACE PROFILE					Type	Sample Number	Recovery (%)	Vapour Conc. (PID/RKl) (ppm)	Remarks
Depth	Symbol	Description	Depth/Elev	Well Data					
0		Ground Surface	73.67						
0		<b>PAVEMENT/SUB-PAVEMENT</b> Asphalt followed by dark grey sandy gravel, dry, loose	0.00						
1									
2		<b>SILTY SAND FILL</b> Tan to brown, little gravel, trace clay	73.06 0.61						
3									
4		<b>GRAVELLY SAND FILL</b> Tan to brown, gravelly sand, little silt, trace clay, firm, dry to moist	72.45 1.22		DP	SS1		2/160	
5									
6									
7		<b>SILTY SAND</b> Grey to brown, silty sand, little gravel, little clay, firm, wet	71.39 2.28		DP	SS2		26.2/100	-MW9B-SS2 Analyzed for Metals & Inorganics, PHCs, PAHs, VOCs -DUP1 (field duplicate of MW9B-SS2)
8									
9									-Static water level 71.00 masl on October 28, 2013
10					DP	SS3		3.3/110	-MW9B-SS3 Analyzed for VOCs
11		<b>BEDROCK</b> Grey shaly limestone, consistently hard	70.47 3.20						-General nature of bedrock interpreted to be similar to that of MW-9A based on observations of bedrock drill cuttings
12									
13									
14									
15									
16									

Drilled By: Strata Soil

Drill Method: Direct Push

Drill Date: October 23, 2013

MMM Group Limited  
100 Commerce Valley Drive West  
Thornhill, Ontario L3T 0A1

Borehole Log is for Environmental  
Purposes Only

Logged By: PVD

Checked By: CIA

Hole Size: 0.15 m

Sheet: 1 of 2



Project No: 14-12815-001-PH2

Project: Environmental Investigation

Client: DCR Phoenix Homes

Location: 13 LeBreton Street, Ottawa, Ontario

## Log of Borehole: MW-9B

Easting: 444524

Zone: 18T

Northing: 5028730

Datum: NAD 83

MOE ID#: A154233

### SUBSURFACE PROFILE

Depth	Symbol	Description	Depth/Elev	Well Data	Type	Sample Number	Recovery (%)	Vapour Conc. (PID/RKI) (ppm)	Remarks
17									
18									
19									
20	6		67.57						
21		End of Borehole	6.10						
22									
23	7								
24									
25									
26	8								
27									
28									
29									
30	9								
31									
32									

Drilled By: Strata Soil

Drill Method: Direct Push

Drill Date: October 23, 2013

MMM Group Limited  
100 Commerce Valley Drive West  
Thornhill, Ontario L3T 0A1

Borehole Log is for Environmental  
Purposes Only

Logged By: PVD

Checked By: CIA

Hole Size: 0.15 m

Sheet: 2 of 2



**Project No:** 14-12815-001-PH2  
**Project:** Environmental Investigation  
**Client:** DCR Phoenix Homes  
**Location:** 770 Somerset Street West, Ottawa, Ontario

## Log of Borehole: MW-10

**Easting:** 444511    **Zone:** 18T  
**Northing:** 5028714    **Datum:** NAD 83  
**MOE ID#:** A154187

SUBSURFACE PROFILE					Type	Sample Number	Recovery (%)	Vapour Conc. (PID/RKI) (ppm)	Remarks
Depth	Symbol	Description	Depth/Elev	Well Data					
0		Ground Surface	73.67						
0		<b>PAVEMENT/SUB-PAVEMENT</b> Asphalt followed by grey, sandy gravel	0.00						
1									
2									
3			72.76						
3		<b>SAND FILL</b> Dark brown, sand with trace gravel, little silt, dry, loose	0.91		DP	SS1		0/0	
4									
5									
6									
7									
8			71.23		DP	SS2		0/0	-Clay seam at 2.13 mbgs -MW10-SS2 Analyzed for Metals & Inorganics, PHCs, VOCs, and PAHs
8		<b>BEDROCK</b> Grey, limestone, some shaly partings, hard, dry	2.44						-General nature of bedrock interpreted to be similar to that of MW-9A based on observations of bedrock drill cuttings
9									
10									
11									
12									
13									
14									
15									
16									
5									-Static water level 70.11 masl on October 28, 2013

Drilled By: **Strata Soil**

Drill Method: **Direct Push**

Drill Date: **October 23, 2013**

MMM Group Limited  
 100 Commerce Valley Drive West  
 Thornhill, Ontario L3T 0A1

Borehole Log is for Environmental  
 Purposes Only

Logged By: **PVD**

Checked By: **CIA**

Hole Size: **0.15 m**

Sheet: **1 of 2**



Project No: 14-12815-001-PH2

Project: Environmental Investigation

Client: DCR Phoenix Homes

Location: 770 Somerset Street West, Ottawa, Ontario

## Log of Borehole: MW-10

Easting: 444511

Zone: 18T

Northing: 5028714

Datum: NAD 83

MOE ID#: A154187

SUBSURFACE PROFILE					Type	Sample Number	Recovery (%)	Vapour Conc. (PID/RKI) (ppm)	Remarks
Depth	Symbol	Description	Depth/Elev	Well Data					
17									
18		<b>BEDOCK</b>	68.18						
19		Grey, limestone, some shaly partings, slightly softer, moist	5.49						
20	6	End of Borehole	67.57						
21			6.10						
22									
23	7								
24									
25									
26	8								
27									
28									
29									
30	9								
31									
32									

Drilled By: Strata Soil

Drill Method: Direct Push

Drill Date: October 23, 2013

MMM Group Limited  
100 Commerce Valley Drive West  
Thornhill, Ontario L3T 0A1

Borehole Log is for Environmental  
Purposes Only

Logged By: PVD

Checked By: CIA

Hole Size: 0.15 m

Sheet: 2 of 2



**Project No:** 14-12815-001-PH2  
**Project:** Environmental Investigation  
**Client:** DCR Phoenix Homes  
**Location:** 770 Somerset Street West, Ottawa, Ontario

## Log of Borehole: MW-11

**Easting:** 444544    **Zone:** 18T  
**Northing:** 5028728    **Datum:** NAD 83  
**MOE ID#:** A154234

SUBSURFACE PROFILE					Type	Sample Number	Recovery (%)	Vapour Conc. (PID/RK) (ppm)	Remarks
Depth	Symbol	Description	Depth/Elev	Well Data					
0		Ground Surface	73.77						
0		<b>PAVEMENT/SUB-PAVEMENT</b> Asphalt followed by dark grey to grey brown sandy gravel fill, some silt, little clay	0.00						
2		<b>SAND FILL</b> Brown sand, some silt, little clay, little gravel, moist, loose, topsoil	73.16 0.61						
3		<b>SAND FILL</b> Tan to grey to brown sand, some silt, little clay, little gravel, firm to loose, dry to moist	72.86 0.91		DP	SS1		0/140	
6		<b>BEDROCK</b> Grey brown limestone, some shaly partings, firm to hard	71.94 1.83		DP	SS2		0.3/130	-MW11-SS2 Analyzed for Metals & Inorganics, PHCs, PAHs, VOCs  -General nature of bedrock interpreted to be similar to that of MW-9A based on observations of bedrock drill cuttings  -Static water level 71.07 masl on October 28, 2013

Drilled By: **Strata Soil**

Drill Method: **Direct Push**

Drill Date: **October 23, 2013**

MMM Group Limited  
 100 Commerce Valley Drive West  
 Thornhill, Ontario L3T 0A1

Borehole Log is for Environmental  
 Purposes Only

Logged By: **PVD**

Checked By: **CIA**

Hole Size: **0.15 m**

Sheet: **1 of 2**





Project No: 14-12815-001-PH2

Project: Environmental Investigation

Client: DCR Phoenix Homes

Location: 770 Somerset Street West, Ottawa, Ontario

## Log of Borehole: MW-11

Easting: 444544

Zone: 18T

Northing: 5028728

Datum: NAD 83

MOE ID#: A154234

SUBSURFACE PROFILE					Type	Sample Number	Recovery (%)	Vapour Conc. (PID/RKI) (ppm)	Remarks
Depth	Symbol	Description	Depth/Elev	Well Data					
17									
18									
19									
20									
20		End of Borehole	67.67 6.10						
21									
22									
23	7								
24									
25									
26	8								
27									
28									
29									
30	9								
31									
32									

Drilled By: Strata Soil

Drill Method: Direct Push

Drill Date: October 23, 2013

MMM Group Limited  
100 Commerce Valley Drive West  
Thornhill, Ontario L3T 0A1

Borehole Log is for Environmental  
Purposes Only

Logged By: PVD

Checked By: CIA

Hole Size: 0.15 m

Sheet: 2 of 2

**A-3**  
**CERTIFICATES OF ANALYSIS**

Your Project #: 1412815  
Site#: Ottawa  
Site Location: 770 SOMERSET ST. W

**Attention: Peter Van Driel**

Ecoplans Limited  
72 Victoria St S  
Suite 100  
Kitchener, ON  
N2G 4Y9

Your C.O.C. #: 38081801, 380818-01-01, 380818-05-01, 380818-02-01

**Report Date: 2012/11/20**

**CERTIFICATE OF ANALYSIS**

**MAXXAM JOB #: B2H6839**

**Received: 2012/11/09, 17:30**

Sample Matrix: Soil  
# Samples Received: 21

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Methylnaphthalene Sum (t)	2	N/A	2012/11/16	CAM SOP - 00301	EPA 8270
Hot Water Extractable Boron (t)	2	2012/11/15	2012/11/16	CAM SOP-00408	R153 Ana. Prot. 2011
Hot Water Extractable Boron (t)	1	2012/11/15	2012/11/17	CAM SOP-00408	R153 Ana. Prot. 2011
Hot Water Extractable Boron (t)	8	2012/11/16	2012/11/17	CAM SOP-00408	R153 Ana. Prot. 2011
1,3-Dichloropropene Sum (t)	8	N/A	2012/11/16	CAM SOP-00226	EPA 8260
1,3-Dichloropropene Sum (t)	5	N/A	2012/11/19	CAM SOP-00226	EPA 8260
Free (WAD) Cyanide (t)	9	N/A	2012/11/15	CAM SOP-00457	Ontario MOE CN-E3015
Free (WAD) Cyanide (t)	1	N/A	2012/11/16	CAM SOP-00457	Ontario MOE CN-E3015
Free (WAD) Cyanide (t)	1	N/A	2012/11/17	CAM SOP-00457	Ontario MOE CN-E3015
Cyanide (WAD) in Leachates (t)	1	N/A	2012/11/15	CAM SOP-00457	Ontario MOE CN-3015
Conductivity (t)	11	N/A	2012/11/16	CAM SOP-00414	APHA 2510
Hexavalent Chromium in Soil by IC (t, g)	2	2012/11/14	2012/11/15	CAM SOP-00436	EPA SW846-3060/7199
Hexavalent Chromium in Soil by IC (t, g)	8	2012/11/14	2012/11/17	CAM SOP-00436	EPA SW846-3060/7199
Hexavalent Chromium in Soil by IC (t, g)	1	2012/11/15	2012/11/16	CAM SOP-00436	EPA SW846-3060/7199
Petroleum Hydro. CCME F1 & BTEX in Soil (t)	2	2012/11/13	2012/11/15	CAM SOP-00315	CCME CWS
CCME F1 Hydrocarbons/BTEX in Leachate (t)	1	2012/11/14	2012/11/16	CAM SOP-00315	CCME CWS
Petroleum Hydro. CCME F1 & BTEX in Soil	9	2012/11/13	2012/11/14	OTT SOP-00002	CCME CWS
CCME F2-F4 Hydrocarbons in Leachate (t)	1	2012/11/15	2012/11/16	CAM SOP-00316	CCME Hydrocarbons
Petroleum Hydrocarbons F2-F4 in Soil (t)	2	2012/11/14	2012/11/15	CAM SOP-00316	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	9	2012/11/13	2012/11/13	OTT SOP-00001	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	2	2012/11/14	2012/11/16	OTT SOP-00001	CCME CWS
F4G (CCME Hydrocarbons Gravimetric) (t)	1	2012/11/19	2012/11/19	CAM SOP-00316	CCME CWS
F4G (CCME Hydrocarbons Gravimetric)	1	2012/11/19	2012/11/19	OTT SOP-00001	CCME CWS
Fluoride by ISE in Leachates (t)	1	2012/11/15	2012/11/15	CAM SOP-00448	SM 4500FC
Mercury (TCLP Leachable) (mg/L) (t)	1	N/A	2012/11/15	CAM SOP-00453	EPA 7470
Acid Extr. Metals (aqua regia) by ICPMS (t)	11	2012/11/16	2012/11/16	CAM SOP-00447	EPA 6020
Total Metals in TCLP Leachate by ICPMS (t)	1	2012/11/14	2012/11/15	CAM SOP-00447	EPA 6020
MOISTURE	9	N/A	2012/11/14	CAM SOP-00445	McKeague 2nd ed 1978
MOISTURE	2	N/A	2012/11/16	CAM SOP-00445	McKeague 2nd ed 1978
Moisture (t)	9	N/A	2012/11/15	CAM SOP-00445	R.Carter, 1993
Nitrate(NO3) + Nitrite(NO2) in Leachate (t)	1	N/A	2012/11/15	CAM SOP-00440	SM 4500 NO3/NO2B
PAH Compounds in Soil by GC/MS (SIM) (t)	2	2012/11/14	2012/11/15	CAM SOP - 00318	EPA 8270
Polychlorinated Biphenyl in Soil (t)	3	2012/11/15	2012/11/16	CAM SOP-00309	SW846 8082
Polychlorinated Biphenyl in Leachate (t)	1	2012/11/15	2012/11/16	CAM SOP-00309	SW846 8082
pH CaCl2 EXTRACT (t)	10	2012/11/15	2012/11/15	CAM SOP-00413	SM 4500H+ B

../2

Your Project #: 1412815  
Site#: Ottawa  
Site Location: 770 SOMERSET ST. W

**Attention: Peter Van Driel**

Ecoplans Limited  
72 Victoria St S  
Suite 100  
Kitchener, ON  
N2G 4Y9

Your C.O.C. #: 38081801, 380818-01-01, 380818-05-01, 380818-02-01

**Report Date: 2012/11/20**

**CERTIFICATE OF ANALYSIS**

-2-

Sample Matrix: Soil  
# Samples Received: 21

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
pH CaCl2 EXTRACT (1)	1	2012/11/16	2012/11/16	CAM SOP-00413	SM 4500H+ B
Sodium Adsorption Ratio (SAR) (1)	1	2012/11/12	2012/11/16	CAM SOP-00102	EPA 6010
Sodium Adsorption Ratio (SAR) (1)	10	2012/11/12	2012/11/19	CAM SOP-00102	EPA 6010
TCLP - % Solids (1)	1	2012/11/13	2012/11/14	CAM SOP-00401	EPA 1311 modified
TCLP - Extraction Fluid (1)	1	N/A	2012/11/14	CAM SOP-00401	EPA 1311 modified
TCLP - Initial and final pH (1)	1	N/A	2012/11/14	CAM SOP-00401	EPA 1311 modified
TCLP Zero Headspace Extraction (1)	1	2012/11/13	2012/11/13	CAM SOP-00430	EPA 1311 modified
Volatile Organic Compounds in Soil (1)	7	2012/11/13	2012/11/15	CAM SOP-00226	EPA 8260 modified
Volatile Organic Compounds in Soil (1)	4	2012/11/13	2012/11/16	CAM SOP-00226	EPA 8260 modified
Volatile Organic Compounds in Soil (1)	2	2012/11/13	2012/11/17	CAM SOP-00226	EPA 8260 modified

\* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

- (1) This test was performed by Maxxam Analytics Mississauga  
(2) Soils are reported on a dry weight basis unless otherwise specified.

**Encryption Key**

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Jolanta Goralczyk, Project Manager  
Email: JGoralczyk@maxxam.ca  
Phone# (613) 274-0573

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Total cover pages: 2

Maxxam Job #: B2H6839  
Report Date: 2012/11/20

Ecoplans Limited  
Client Project #: 1412815  
Site Location: 770 SOMERSET ST. W  
Sampler Initials: PV

### RESULTS OF ANALYSES OF SOIL

Maxxam ID		PO2410			PO2411			PO2412		
Sampling Date		2012/11/09			2012/11/09			2012/11/09		
COC Number		380818-01-01			380818-01-01			380818-01-01		
	<b>Units</b>	<b>BH5 SS1</b>	<b>RDL</b>	<b>QC Batch</b>	<b>DUP 2</b>	<b>RDL</b>	<b>QC Batch</b>	<b>BH5 SS2</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Calculated Parameters</b>										
Sodium Adsorption Ratio	N/A	6.8		3033160	7.7		3033160			
<b>Inorganics</b>										
Chromium (VI)	ug/g	ND	0.2	3036788	ND	0.2	3036788		0.2	
Conductivity	mS/cm	0.32	0.002	3038515	0.29	0.002	3038515		0.002	
Free Cyanide	ug/g	ND	0.01	3036853	ND	0.01	3036853		0.01	
Moisture	%	12	1.0	3037245	6.6	0.2	3034270	6.9	1.0	3037245
Available (CaCl2) pH	pH	7.27		3037246	7.29		3037246			

ND = Not detected  
RDL = Reportable Detection Limit  
QC Batch = Quality Control Batch

Maxxam ID		PO2413	PO2414	PO2415			PO2416		
Sampling Date		2012/11/09	2012/11/09	2012/11/09			2012/11/08		
COC Number		380818-01-01	380818-01-01	380818-01-01			380818-01-01		
	<b>Units</b>	<b>BH5 SS3</b>	<b>BH6 SS2</b>	<b>BH6 SS3</b>	<b>RDL</b>	<b>QC Batch</b>	<b>BH7 SS2</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Calculated Parameters</b>									
Sodium Adsorption Ratio	N/A						2.4		3033160
<b>Inorganics</b>									
Chromium (VI)	ug/g				0.2		ND	0.2	3036788
Conductivity	mS/cm				0.002		0.64	0.002	3038515
Free Cyanide	ug/g				0.01		ND	0.01	3036853
Moisture	%	7.6	8.1	6.8	0.2	3034270	5.4	1.0	3037245
Available (CaCl2) pH	pH						7.30		3037246

ND = Not detected  
RDL = Reportable Detection Limit  
QC Batch = Quality Control Batch

Maxxam Job #: B2H6839  
Report Date: 2012/11/20

Ecoplans Limited  
Client Project #: 1412815  
Site Location: 770 SOMERSET ST. W  
Sampler Initials: PV

### RESULTS OF ANALYSES OF SOIL

Maxxam ID		PO2417			PO2418			PO2419		
Sampling Date		2012/11/08			2012/11/08			2012/11/08		
COC Number		380818-01-01			380818-01-01			380818-01-01		
	<b>Units</b>	<b>BH7 SS3</b>	<b>RDL</b>	<b>QC Batch</b>	<b>BH8 SS2</b>	<b>RDL</b>	<b>QC Batch</b>	<b>BH8 SS3</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Calculated Parameters</b>										
Sodium Adsorption Ratio	N/A				1.9		3033160			
<b>Inorganics</b>										
Chromium (VI)	ug/g		0.2		ND	0.2	3036385		0.2	
Conductivity	mS/cm		0.002		0.86	0.002	3038515		0.002	
Free Cyanide	ug/g		0.01		ND	0.01	3036853		0.01	
Moisture	%	2.7	0.2	3034270	5.8	1.0	3037667	7.7	0.2	3034270
Available (CaCl2) pH	pH				9.06		3037246			

ND = Not detected  
RDL = Reportable Detection Limit  
QC Batch = Quality Control Batch

Maxxam ID		PO2444	PO2445			PO2446	PO2447		
Sampling Date		2012/11/08	2012/11/08			2012/11/08	2012/11/08		
COC Number		380818-05-01	380818-05-01			380818-05-01	380818-05-01		
	<b>Units</b>	<b>BH1 SS1</b>	<b>BH1 SS2</b>	<b>RDL</b>	<b>QC Batch</b>	<b>BH1 SS3</b>	<b>BH2 SS2</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Calculated Parameters</b>									
Sodium Adsorption Ratio	N/A	11	9.8		3033160		4.1		3033160
<b>Inorganics</b>									
Chromium (VI)	ug/g	ND	ND	0.2	3036788		ND	0.2	3036788
Conductivity	mS/cm	0.77	0.78	0.002	3038515		0.47	0.002	3038515
Free Cyanide	ug/g	ND	ND	0.01	3036853		ND	0.01	3036890
Moisture	%	9.3	10	1.0	3037245	14	7.6	0.2	3034270
Available (CaCl2) pH	pH	7.76	7.68		3037246		7.54		3037246

ND = Not detected  
RDL = Reportable Detection Limit  
QC Batch = Quality Control Batch



Maxxam Job #: B2H6839  
Report Date: 2012/11/20

Ecoplans Limited  
Client Project #: 1412815  
Site Location: 770 SOMERSET ST. W  
Sampler Initials: PV

### RESULTS OF ANALYSES OF SOIL

Maxxam ID		PO2448			PO2449		PO2450		
Sampling Date		2012/11/08			2012/11/08		2012/11/08		
COC Number		380818-05-01			380818-05-01		380818-05-01		
	<b>Units</b>	<b>BH2 SS3</b>	<b>RDL</b>	<b>QC Batch</b>	<b>BH3 SS1</b>	<b>QC Batch</b>	<b>BH3 SS2</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Calculated Parameters</b>									
Sodium Adsorption Ratio	N/A			3033160	4.1	3033160	5.1		3033160
<b>Inorganics</b>									
Chromium (VI)	ug/g		0.2	3036788	ND	3036788	ND	0.2	3038041
Conductivity	mS/cm		0.002	3038515	0.57	3038515	0.44	0.002	3038695
Free Cyanide	ug/g		0.01	3036890	ND	3036853	ND	0.01	3037905
Moisture	%	5.7	0.2	3034270	3.5	3037245	5.8	1.0	3037809
Available (CaCl2) pH	pH			3037246	7.62	3037246	7.67		3038478

ND = Not detected  
RDL = Reportable Detection Limit  
QC Batch = Quality Control Batch

Maxxam Job #: B2H6839  
Report Date: 2012/11/20

Ecoplans Limited  
Client Project #: 1412815  
Site Location: 770 SOMERSET ST. W  
Sampler Initials: PV

### RESULTS OF ANALYSES OF SOIL

Maxxam ID		PO2451	PO2452			PO2453	PO2455		
Sampling Date		2012/11/08	2012/11/08			2012/11/09	2012/11/08		
COC Number		380818-05-01	380818-05-01			380818-05-01	380818-02-01		
	<b>Units</b>	<b>BH3 SS3</b>	<b>DUP 1</b>	<b>RDL</b>	<b>QC Batch</b>	<b>BH4 SS2</b>	<b>TCLP</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Calculated Parameters</b>									
Sodium Adsorption Ratio	N/A		5.0		3033160	12			3033160
<b>Charge/Prep Analysis</b>									
Amount Extracted (Wet Weight) (g)	N/A						25	N/A	3034810
<b>Inorganics</b>									
Chromium (VI)	ug/g		ND	0.2	3036788	ND		0.2	3036385
Conductivity	mS/cm		0.60	0.002	3038515	1.4		0.002	3038515
Final pH	pH						6.26		3035605
Leachable Fluoride (F-)	mg/L						0.2	0.1	3037130
Free Cyanide	ug/g		ND	0.01	3036853	ND		0.01	3036853
Leachable Free Cyanide	mg/L						ND	0.002	3037136
Initial pH	pH						9.52		3035605
Moisture	%	6.2	8.1	0.2	3037335	12		1.0	3037667
Available (CaCl2) pH	pH		8.31		3037246	7.81			3037246
TCLP - % Solids	%						100	0.2	3035599
TCLP Extraction Fluid	N/A						FLUID 1		3035604
Leachable Nitrite (N)	mg/L						ND	0.1	3037135
Leachable Nitrate (N)	mg/L						ND	1	3037135
Leachable Nitrate + Nitrite	mg/L						ND	1	3037135
<b>Metals</b>									
Leachable Mercury (Hg)	mg/L						ND	0.001	3036084

ND = Not detected  
RDL = Reportable Detection Limit  
QC Batch = Quality Control Batch

Maxxam Job #: B2H6839  
Report Date: 2012/11/20

Ecoplans Limited  
Client Project #: 1412815  
Site Location: 770 SOMERSET ST. W  
Sampler Initials: PV

### PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		PO2455		
Sampling Date		2012/11/08		
COC Number		380818-02-01		
	<b>Units</b>	<b>TCLP</b>	<b>RDL</b>	<b>QC Batch</b>

<b>BTEX &amp; F1 Hydrocarbons</b>				
Leachable (ZHE) Benzene	ug/L	ND	0.8	3036405
Leachable (ZHE) Toluene	ug/L	ND	0.8	3036405
Leachable (ZHE) Ethylbenzene	ug/L	ND	0.8	3036405
Leachable (ZHE) o-Xylene	ug/L	ND	0.8	3036405
Leachable (ZHE) p+m-Xylene	ug/L	ND	2	3036405
Leachable (ZHE) Total Xylenes	ug/L	ND	2	3036405
Leachable (ZHE) F1 (C6-C10)	ug/L	ND	1000	3036405
Leachable (ZHE) F1 (C6-C10) - BTEX	ug/L	ND	1000	3036405
<b>Surrogate Recovery (%)</b>				
Leachable (ZHE) 1,4-Difluorobenzene	%	103		3036405
Leachable (ZHE) 4-Bromofluorobenzene	%	98		3036405
Leachable (ZHE) D10-Ethylbenzene	%	96		3036405
Leachable (ZHE) D4-1,2-Dichloroethane	%	93		3036405

ND = Not detected  
RDL = Reportable Detection Limit  
QC Batch = Quality Control Batch

Maxxam Job #: B2H6839  
Report Date: 2012/11/20

Ecoplans Limited  
Client Project #: 1412815  
Site Location: 770 SOMERSET ST. W  
Sampler Initials: PV

### ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		PO2410		PO2411		PO2416		
Sampling Date		2012/11/09		2012/11/09		2012/11/08		
COC Number		380818-01-01		380818-01-01		380818-01-01		
	Units	BH5 SS1	QC Batch	DUP 2	QC Batch	BH7 SS2	RDL	QC Batch
<b>Metals</b>								
Hot Water Ext. Boron (B)	ug/g	0.34	3038714	0.52	3038287	0.74	0.050	3038714
Acid Extractable Antimony (Sb)	ug/g	1.3	3038581	1.7	3038581	1.6	0.20	3038581
Acid Extractable Arsenic (As)	ug/g	6.2	3038581	8.1	3038581	4.0	1.0	3038581
Acid Extractable Barium (Ba)	ug/g	160	3038581	160	3038581	96	0.50	3038581
Acid Extractable Beryllium (Be)	ug/g	0.24	3038581	0.29	3038581	ND	0.20	3038581
Acid Extractable Boron (B)	ug/g	ND	3038581	ND	3038581	ND	5.0	3038581
Acid Extractable Cadmium (Cd)	ug/g	0.49	3038581	0.50	3038581	0.15	0.10	3038581
Acid Extractable Chromium (Cr)	ug/g	13	3038581	13	3038581	9.8	1.0	3038581
Acid Extractable Cobalt (Co)	ug/g	4.1	3038581	4.5	3038581	2.8	0.10	3038581
Acid Extractable Copper (Cu)	ug/g	100	3038581	74	3038581	20	0.50	3038581
Acid Extractable Lead (Pb)	ug/g	150	3038581	190	3038581	140	1.0	3038581
Acid Extractable Molybdenum (Mo)	ug/g	0.82	3038581	0.92	3038581	0.60	0.50	3038581
Acid Extractable Nickel (Ni)	ug/g	44	3038581	56	3038581	7.5	0.50	3038581
Acid Extractable Selenium (Se)	ug/g	ND	3038581	ND	3038581	ND	0.50	3038581
Acid Extractable Silver (Ag)	ug/g	ND	3038581	ND	3038581	ND	0.20	3038581
Acid Extractable Thallium (Tl)	ug/g	0.25	3038581	0.15	3038581	0.054	0.050	3038581
Acid Extractable Uranium (U)	ug/g	0.31	3038581	0.37	3038581	0.36	0.050	3038581
Acid Extractable Vanadium (V)	ug/g	14	3038581	16	3038581	13	5.0	3038581
Acid Extractable Zinc (Zn)	ug/g	350	3038581	360	3038581	71	5.0	3038581
Acid Extractable Mercury (Hg)	ug/g	0.22	3038581	0.38	3038581	0.36	0.050	3038581
ND = Not detected RDL = Reportable Detection Limit QC Batch = Quality Control Batch								

Maxxam Job #: B2H6839  
Report Date: 2012/11/20

Ecoplans Limited  
Client Project #: 1412815  
Site Location: 770 SOMERSET ST. W  
Sampler Initials: PV

### ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		PO2418		PO2444	PO2445	PO2447	PO2449		
Sampling Date		2012/11/08		2012/11/08	2012/11/08	2012/11/08	2012/11/08		
COC Number		380818-01-01		380818-05-01	380818-05-01	380818-05-01	380818-05-01		
	<b>Units</b>	<b>BH8 SS2</b>	<b>QC Batch</b>	<b>BH1 SS1</b>	<b>BH1 SS2</b>	<b>BH2 SS2</b>	<b>BH3 SS1</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Metals</b>									
Hot Water Ext. Boron (B)	ug/g	0.68	3038348	0.55	0.25	0.52	0.28	0.050	3038714
Acid Extractable Antimony (Sb)	ug/g	0.77	3038559	1.9	ND	ND	0.36	0.20	3038581
Acid Extractable Arsenic (As)	ug/g	4.2	3038559	4.4	1.6	1.4	2.0	1.0	3038581
Acid Extractable Barium (Ba)	ug/g	80	3038559	160	63	32	42	0.50	3038581
Acid Extractable Beryllium (Be)	ug/g	0.20	3038559	0.25	0.22	ND	ND	0.20	3038581
Acid Extractable Boron (B)	ug/g	ND	3038559	ND	ND	ND	ND	5.0	3038581
Acid Extractable Cadmium (Cd)	ug/g	0.18	3038559	0.43	ND	0.10	0.12	0.10	3038581
Acid Extractable Chromium (Cr)	ug/g	10	3038559	11	10	8.4	5.6	1.0	3038581
Acid Extractable Cobalt (Co)	ug/g	3.5	3038559	3.9	4.5	3.6	3.4	0.10	3038581
Acid Extractable Copper (Cu)	ug/g	20	3038559	63	17	10	15	0.50	3038581
Acid Extractable Lead (Pb)	ug/g	98	3038559	160	4.1	7.8	78	1.0	3038581
Acid Extractable Molybdenum (Mo)	ug/g	1.0	3038559	0.78	ND	ND	0.59	0.50	3038581
Acid Extractable Nickel (Ni)	ug/g	8.9	3038559	12	8.6	8.0	8.0	0.50	3038581
Acid Extractable Selenium (Se)	ug/g	ND	3038559	ND	ND	ND	ND	0.50	3038581
Acid Extractable Silver (Ag)	ug/g	ND	3038559	ND	ND	ND	ND	0.20	3038581
Acid Extractable Thallium (Tl)	ug/g	0.095	3038559	0.099	0.083	0.054	0.084	0.050	3038581
Acid Extractable Uranium (U)	ug/g	0.32	3038559	0.38	0.40	0.28	0.21	0.050	3038581
Acid Extractable Vanadium (V)	ug/g	14	3038559	17	18	11	9.4	5.0	3038581
Acid Extractable Zinc (Zn)	ug/g	65	3038559	110	16	19	76	5.0	3038581
Acid Extractable Mercury (Hg)	ug/g	0.22	3038559	0.13	ND	ND	ND	0.050	3038581

ND = Not detected

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Maxxam Job #: B2H6839  
Report Date: 2012/11/20

Ecoplans Limited  
Client Project #: 1412815  
Site Location: 770 SOMERSET ST. W  
Sampler Initials: PV

### ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		PO2450		PO2452		PO2453	PO2455		
Sampling Date		2012/11/08		2012/11/08		2012/11/09	2012/11/08		
COC Number		380818-05-01		380818-05-01		380818-05-01	380818-02-01		
	<b>Units</b>	<b>BH3 SS2</b>	<b>QC Batch</b>	<b>DUP 1</b>	<b>QC Batch</b>	<b>BH4 SS2</b>	<b>TCLP</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Metals</b>									
Leachable Arsenic (As)	mg/L						ND	0.2	3036282
Leachable Barium (Ba)	mg/L						0.5	0.2	3036282
Hot Water Ext. Boron (B)	ug/g	0.27	3038714	0.51	3038714	0.11		0.050	3038348
Leachable Boron (B)	mg/L						0.1	0.1	3036282
Leachable Cadmium (Cd)	mg/L						ND	0.05	3036282
Leachable Chromium (Cr)	mg/L						ND	0.1	3036282
Leachable Lead (Pb)	mg/L						ND	0.1	3036282
Leachable Selenium (Se)	mg/L						ND	0.1	3036282
Leachable Silver (Ag)	mg/L						ND	0.01	3036282
Leachable Uranium (U)	mg/L						ND	0.01	3036282
Acid Extractable Antimony (Sb)	ug/g	ND	3038770	0.77	3038581	ND		0.20	3038559
Acid Extractable Arsenic (As)	ug/g	1.6	3038770	3.6	3038581	1.2		1.0	3038559
Acid Extractable Barium (Ba)	ug/g	29	3038770	110	3038581	51		0.50	3038559
Acid Extractable Beryllium (Be)	ug/g	ND	3038770	0.24	3038581	ND		0.20	3038559
Acid Extractable Boron (B)	ug/g	ND	3038770	ND	3038581	ND		5.0	3038559
Acid Extractable Cadmium (Cd)	ug/g	ND	3038770	0.30	3038581	ND		0.10	3038559
Acid Extractable Chromium (Cr)	ug/g	6.8	3038770	11	3038581	8.1		1.0	3038559
Acid Extractable Cobalt (Co)	ug/g	3.6	3038770	4.1	3038581	3.4		0.10	3038559
Acid Extractable Copper (Cu)	ug/g	11	3038770	29	3038581	52		0.50	3038559
Acid Extractable Lead (Pb)	ug/g	34	3038770	95	3038581	2.8		1.0	3038559
Acid Extractable Molybdenum (Mo)	ug/g	ND	3038770	0.60	3038581	ND		0.50	3038559
Acid Extractable Nickel (Ni)	ug/g	7.9	3038770	12	3038581	6.3		0.50	3038559
Acid Extractable Selenium (Se)	ug/g	ND	3038770	ND	3038581	ND		0.50	3038559
Acid Extractable Silver (Ag)	ug/g	ND	3038770	ND	3038581	ND		0.20	3038559
Acid Extractable Thallium (Tl)	ug/g	0.064	3038770	0.090	3038581	0.059		0.050	3038559
Acid Extractable Uranium (U)	ug/g	0.32	3038770	0.35	3038581	0.40		0.050	3038559
Acid Extractable Vanadium (V)	ug/g	11	3038770	15	3038581	15		5.0	3038559
Acid Extractable Zinc (Zn)	ug/g	38	3038770	110	3038581	26		5.0	3038559
Acid Extractable Mercury (Hg)	ug/g	ND	3038770	0.12	3038581	ND		0.050	3038559

ND = Not detected

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch



Maxxam Job #: B2H6839  
Report Date: 2012/11/20

Ecoplans Limited  
Client Project #: 1412815  
Site Location: 770 SOMERSET ST. W  
Sampler Initials: PV

### SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		PO2412	PO2447		
Sampling Date		2012/11/09	2012/11/08		
COC Number		380818-01-01	380818-05-01		
	Units	BH5 SS2	BH2 SS2	RDL	QC Batch

<b>Calculated Parameters</b>					
Methylnaphthalene, 2-(1-)	ug/g	ND	ND	0.0071	3033158
<b>Polyaromatic Hydrocarbons</b>					
Acenaphthene	ug/g	ND	0.0057	0.0050	3036794
Acenaphthylene	ug/g	ND	0.017	0.0050	3036794
Anthracene	ug/g	ND	0.016	0.0050	3036794
Benzo(a)anthracene	ug/g	0.0054	0.063	0.0050	3036794
Benzo(a)pyrene	ug/g	0.0067	0.064	0.0050	3036794
Benzo(b/j)fluoranthene	ug/g	0.0083	0.081	0.0050	3036794
Benzo(g,h,i)perylene	ug/g	0.0052	0.043	0.0050	3036794
Benzo(k)fluoranthene	ug/g	ND	0.034	0.0050	3036794
Chrysene	ug/g	ND	0.055	0.0050	3036794
Dibenz(a,h)anthracene	ug/g	ND	0.012	0.0050	3036794
Fluoranthene	ug/g	0.011	0.11	0.0050	3036794
Fluorene	ug/g	ND	ND	0.0050	3036794
Indeno(1,2,3-cd)pyrene	ug/g	ND	0.045	0.0050	3036794
1-Methylnaphthalene	ug/g	ND	ND	0.0050	3036794
2-Methylnaphthalene	ug/g	ND	ND	0.0050	3036794
Naphthalene	ug/g	ND	ND	0.0050	3036794
Phenanthrene	ug/g	ND	0.049	0.0050	3036794
Pyrene	ug/g	0.011	0.092	0.0050	3036794
<b>Surrogate Recovery (%)</b>					
D10-Anthracene	%	94	89		3036794
D14-Terphenyl (FS)	%	97	90		3036794
D8-Acenaphthylene	%	91	85		3036794

ND = Not detected  
RDL = Reportable Detection Limit  
QC Batch = Quality Control Batch

Maxxam Job #: B2H6839  
Report Date: 2012/11/20

Ecoplans Limited  
Client Project #: 1412815  
Site Location: 770 SOMERSET ST. W  
Sampler Initials: PV

### VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		PO2411	PO2413		PO2414		PO2415		
Sampling Date		2012/11/09	2012/11/09		2012/11/09		2012/11/09		
COC Number		380818-01-01	380818-01-01		380818-01-01		380818-01-01		
	Units	DUP 2	BH5 SS3	RDL	BH6 SS2	RDL	BH6 SS3	RDL	QC Batch
<b>Calculated Parameters</b>									
1,3-Dichloropropene (cis+trans)	ug/g	ND	ND	0.10	ND	0.15	ND	0.10	3033159
<b>Volatile Organics</b>									
Acetone (2-Propanone)	ug/g	ND		1.0	ND	1.5	ND	1.0	3034832
Benzene	ug/g	ND	ND	0.040	ND	0.060	ND	0.040	3034832
Bromodichloromethane	ug/g	ND		0.10	ND	0.15	ND	0.10	3034832
Bromoform	ug/g	ND		0.10	ND	0.15	ND	0.10	3034832
Bromomethane	ug/g	ND		0.10	ND	0.15	ND	0.10	3034832
Carbon Tetrachloride	ug/g	ND		0.10	ND	0.15	ND	0.10	3034832
Chlorobenzene	ug/g	ND		0.10	ND	0.15	ND	0.10	3034832
Chloroform	ug/g	ND		0.10	ND	0.15	ND	0.10	3034832
Dibromochloromethane	ug/g	ND		0.10	ND	0.15	ND	0.10	3034832
1,2-Dichlorobenzene	ug/g	ND		0.10	ND	0.15	ND	0.10	3034832
1,3-Dichlorobenzene	ug/g	ND		0.10	ND	0.15	ND	0.10	3034832
1,4-Dichlorobenzene	ug/g	ND		0.10	ND	0.15	ND	0.10	3034832
Dichlorodifluoromethane (FREON 12)	ug/g	ND		0.10	ND	0.15	ND	0.10	3034832
1,1-Dichloroethane	ug/g	ND		0.10	ND	0.15	ND	0.10	3034832
1,2-Dichloroethane	ug/g	ND		0.10	ND	0.15	ND	0.10	3034832
1,1-Dichloroethylene	ug/g	ND		0.10	ND	0.15	ND	0.10	3034832
cis-1,2-Dichloroethylene	ug/g	ND		0.10	ND	0.15	ND	0.10	3034832
trans-1,2-Dichloroethylene	ug/g	ND		0.10	ND	0.15	ND	0.10	3034832
1,2-Dichloropropane	ug/g	ND		0.10	ND	0.15	ND	0.10	3034832
cis-1,3-Dichloropropene	ug/g	ND		0.060	ND	0.090	ND	0.060	3034832
trans-1,3-Dichloropropene	ug/g	ND		0.080	ND	0.12	ND	0.080	3034832
Ethylbenzene	ug/g	ND	ND	0.040	ND	0.060	ND	0.040	3034832
Ethylene Dibromide	ug/g	ND		0.10	ND	0.15	ND	0.10	3034832
Hexane	ug/g	ND		0.10	ND	0.15	ND	0.10	3034832
Methylene Chloride(Dichloromethane)	ug/g	ND		0.10	ND	0.15	ND	0.10	3034832
Methyl Isobutyl Ketone	ug/g	ND		1.0	ND	1.5	ND	1.0	3034832
Methyl Ethyl Ketone (2-Butanone)	ug/g	ND		1.0	ND	1.5	ND	1.0	3034832
Methyl t-butyl ether (MTBE)	ug/g	ND		0.10	ND	0.15	ND	0.10	3034832
Styrene	ug/g	ND		0.10	ND	0.15	ND	0.10	3034832
1,1,1,2-Tetrachloroethane	ug/g	ND		0.10	ND	0.15	ND	0.10	3034832
ND = Not detected RDL = Reportable Detection Limit QC Batch = Quality Control Batch									

Maxxam Job #: B2H6839  
Report Date: 2012/11/20

Ecoplans Limited  
Client Project #: 1412815  
Site Location: 770 SOMERSET ST. W  
Sampler Initials: PV

### VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		PO2411	PO2413		PO2414		PO2415		
Sampling Date		2012/11/09	2012/11/09		2012/11/09		2012/11/09		
COC Number		380818-01-01	380818-01-01		380818-01-01		380818-01-01		
	<b>Units</b>	<b>DUP 2</b>	<b>BH5 SS3</b>	<b>RDL</b>	<b>BH6 SS2</b>	<b>RDL</b>	<b>BH6 SS3</b>	<b>RDL</b>	<b>QC Batch</b>
1,1,2,2-Tetrachloroethane	ug/g	ND		0.10	ND	0.15	ND	0.10	3034832
Tetrachloroethylene	ug/g	ND		0.10	ND	0.15	ND	0.10	3034832
Toluene	ug/g	ND	ND	0.040	ND	0.060	ND	0.040	3034832
1,1,1-Trichloroethane	ug/g	ND		0.10	ND	0.15	ND	0.10	3034832
1,1,2-Trichloroethane	ug/g	ND		0.10	ND	0.15	ND	0.10	3034832
Trichloroethylene	ug/g	ND		0.10	ND	0.15	ND	0.10	3034832
Vinyl Chloride	ug/g	ND		0.040	ND	0.060	ND	0.040	3034832
p+m-Xylene	ug/g	ND	ND	0.040	ND	0.060	ND	0.040	3034832
o-Xylene	ug/g	ND	ND	0.040	ND	0.060	ND	0.040	3034832
Xylene (Total)	ug/g	ND	ND	0.040	ND	0.060	ND	0.040	3034832
Trichlorofluoromethane (FREON 11)	ug/g	ND		0.10	ND	0.15	ND	0.10	3034832
<b>Surrogate Recovery (%)</b>									
4-Bromofluorobenzene	%	97	96		95		97		3034832
D10-o-Xylene	%	102	96		103		105		3034832
D4-1,2-Dichloroethane	%	108	104		106		107		3034832
D8-Toluene	%	99	99		99		100		3034832
ND = Not detected RDL = Reportable Detection Limit QC Batch = Quality Control Batch									

Maxxam Job #: B2H6839  
Report Date: 2012/11/20

Ecoplans Limited  
Client Project #: 1412815  
Site Location: 770 SOMERSET ST. W  
Sampler Initials: PV

### VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		PO2417		PO2418	PO2419	PO2446	PO2447		
Sampling Date		2012/11/08		2012/11/08	2012/11/08	2012/11/08	2012/11/08		
COC Number		380818-01-01		380818-01-01	380818-01-01	380818-05-01	380818-05-01		
	Units	BH7 SS3	RDL	BH8 SS2	BH8 SS3	BH1 SS3	BH2 SS2	RDL	QC Batch

<b>Calculated Parameters</b>									
1,3-Dichloropropene (cis+trans)	ug/g	ND	0.15	ND	ND	ND	ND	0.10	3033159
<b>Volatile Organics</b>									
Acetone (2-Propanone)	ug/g			ND	ND	ND	ND	1.0	3034832
Benzene	ug/g	ND	0.060	ND	ND	ND	ND	0.040	3034832
Bromodichloromethane	ug/g			ND	ND	ND	ND	0.10	3034832
Bromoform	ug/g			ND	ND	ND	ND	0.10	3034832
Bromomethane	ug/g			ND	ND	ND	ND	0.10	3034832
Carbon Tetrachloride	ug/g			ND	ND	ND	ND	0.10	3034832
Chlorobenzene	ug/g			ND	ND	ND	ND	0.10	3034832
Chloroform	ug/g			ND	ND	ND	ND	0.10	3034832
Dibromochloromethane	ug/g			ND	ND	ND	ND	0.10	3034832
1,2-Dichlorobenzene	ug/g			ND	ND	ND	ND	0.10	3034832
1,3-Dichlorobenzene	ug/g			ND	ND	ND	ND	0.10	3034832
1,4-Dichlorobenzene	ug/g			ND	ND	ND	ND	0.10	3034832
Dichlorodifluoromethane (FREON 12)	ug/g			ND	ND	ND	ND	0.10	3034832
1,1-Dichloroethane	ug/g			ND	ND	ND	ND	0.10	3034832
1,2-Dichloroethane	ug/g			ND	ND	ND	ND	0.10	3034832
1,1-Dichloroethylene	ug/g			ND	ND	ND	ND	0.10	3034832
cis-1,2-Dichloroethylene	ug/g			ND	ND	ND	ND	0.10	3034832
trans-1,2-Dichloroethylene	ug/g			ND	ND	ND	ND	0.10	3034832
1,2-Dichloropropane	ug/g			ND	ND	ND	ND	0.10	3034832
cis-1,3-Dichloropropene	ug/g			ND	ND	ND	ND	0.060	3034832
trans-1,3-Dichloropropene	ug/g			ND	ND	ND	ND	0.080	3034832
Ethylbenzene	ug/g	ND	0.060	ND	ND	ND	ND	0.040	3034832
Ethylene Dibromide	ug/g			ND	ND	ND	ND	0.10	3034832
Hexane	ug/g			ND	ND	ND	ND	0.10	3034832
Methylene Chloride(Dichloromethane)	ug/g			ND	ND	ND	ND	0.10	3034832
Methyl Isobutyl Ketone	ug/g			ND	ND	ND	ND	1.0	3034832
Methyl Ethyl Ketone (2-Butanone)	ug/g			ND	ND	ND	ND	1.0	3034832
Methyl t-butyl ether (MTBE)	ug/g			ND	ND	ND	ND	0.10	3034832
Styrene	ug/g			ND	ND	ND	ND	0.10	3034832
1,1,1,2-Tetrachloroethane	ug/g			ND	ND	ND	ND	0.10	3034832

ND = Not detected  
RDL = Reportable Detection Limit  
QC Batch = Quality Control Batch

Maxxam Job #: B2H6839  
Report Date: 2012/11/20

Ecoplans Limited  
Client Project #: 1412815  
Site Location: 770 SOMERSET ST. W  
Sampler Initials: PV

### VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		PO2417		PO2418	PO2419	PO2446	PO2447		
Sampling Date		2012/11/08		2012/11/08	2012/11/08	2012/11/08	2012/11/08		
COC Number		380818-01-01		380818-01-01	380818-01-01	380818-05-01	380818-05-01		
	Units	BH7 SS3	RDL	BH8 SS2	BH8 SS3	BH1 SS3	BH2 SS2	RDL	QC Batch
1,1,2,2-Tetrachloroethane	ug/g			ND	ND	ND	ND	0.10	3034832
Tetrachloroethylene	ug/g			ND	ND	ND	ND	0.10	3034832
Toluene	ug/g	ND	0.060	ND	ND	ND	ND	0.040	3034832
1,1,1-Trichloroethane	ug/g			ND	ND	ND	ND	0.10	3034832
1,1,2-Trichloroethane	ug/g			ND	ND	ND	ND	0.10	3034832
Trichloroethylene	ug/g			ND	ND	ND	ND	0.10	3034832
Vinyl Chloride	ug/g			ND	ND	ND	ND	0.040	3034832
p+m-Xylene	ug/g	ND	0.060	0.12	ND	ND	ND	0.040	3034832
o-Xylene	ug/g	ND	0.060	0.16	ND	ND	ND	0.040	3034832
Xylene (Total)	ug/g	ND	0.060	0.28	ND	ND	ND	0.040	3034832
Trichlorofluoromethane (FREON 11)	ug/g			ND	ND	ND	ND	0.10	3034832
<b>Surrogate Recovery (%)</b>									
4-Bromofluorobenzene	%	96		98	96	96	96		3034832
D10-o-Xylene	%	110		94	103	107	107		3034832
D4-1,2-Dichloroethane	%	106		107	101	104	106		3034832
D8-Toluene	%	99		99	101	100	100		3034832
ND = Not detected RDL = Reportable Detection Limit QC Batch = Quality Control Batch									

Maxxam Job #: B2H6839  
Report Date: 2012/11/20

Ecoplans Limited  
Client Project #: 1412815  
Site Location: 770 SOMERSET ST. W  
Sampler Initials: PV

### VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		PO2448		PO2451	PO2452	PO2453		
Sampling Date		2012/11/08		2012/11/08	2012/11/08	2012/11/09		
COC Number		380818-05-01		380818-05-01	380818-05-01	380818-05-01		
	Units	BH2 SS3	RDL	BH3 SS3	DUP 1	BH4 SS2	RDL	QC Batch
<b>Calculated Parameters</b>								
1,3-Dichloropropene (cis+trans)	ug/g	ND	0.30	ND	ND	ND	0.10	3033159
<b>Volatile Organics</b>								
Acetone (2-Propanone)	ug/g	ND	3.0	ND	ND	ND	1.0	3034832
Benzene	ug/g	ND	0.12	ND	ND	ND	0.040	3034832
Bromodichloromethane	ug/g	ND	0.30	ND	ND	ND	0.10	3034832
Bromoform	ug/g	ND	0.30	ND	ND	ND	0.10	3034832
Bromomethane	ug/g	ND	0.30	ND	ND	ND	0.10	3034832
Carbon Tetrachloride	ug/g	ND	0.30	ND	ND	ND	0.10	3034832
Chlorobenzene	ug/g	ND	0.30	ND	ND	ND	0.10	3034832
Chloroform	ug/g	ND	0.30	ND	ND	ND	0.10	3034832
Dibromochloromethane	ug/g	ND	0.30	ND	ND	ND	0.10	3034832
1,2-Dichlorobenzene	ug/g	ND	0.30	ND	ND	ND	0.10	3034832
1,3-Dichlorobenzene	ug/g	ND	0.30	ND	ND	ND	0.10	3034832
1,4-Dichlorobenzene	ug/g	ND	0.30	ND	ND	ND	0.10	3034832
Dichlorodifluoromethane (FREON 12)	ug/g	ND	0.30	ND	ND	ND	0.10	3034832
1,1-Dichloroethane	ug/g	ND	0.30	ND	ND	ND	0.10	3034832
1,2-Dichloroethane	ug/g	ND	0.30	ND	ND	ND	0.10	3034832
1,1-Dichloroethylene	ug/g	ND	0.30	ND	ND	ND	0.10	3034832
cis-1,2-Dichloroethylene	ug/g	ND	0.30	ND	ND	ND	0.10	3034832
trans-1,2-Dichloroethylene	ug/g	ND	0.30	ND	ND	ND	0.10	3034832
1,2-Dichloropropane	ug/g	ND	0.30	ND	ND	ND	0.10	3034832
cis-1,3-Dichloropropene	ug/g	ND	0.18	ND	ND	ND	0.060	3034832
trans-1,3-Dichloropropene	ug/g	ND	0.24	ND	ND	ND	0.080	3034832
Ethylbenzene	ug/g	ND	0.12	ND	ND	ND	0.040	3034832
Ethylene Dibromide	ug/g	ND	0.30	ND	ND	ND	0.10	3034832
Hexane	ug/g	ND	0.30	ND	ND	ND	0.10	3034832
Methylene Chloride(Dichloromethane)	ug/g	ND	0.30	ND	ND	ND	0.10	3034832
Methyl Isobutyl Ketone	ug/g	ND	3.0	ND	ND	ND	1.0	3034832
Methyl Ethyl Ketone (2-Butanone)	ug/g	ND	3.0	ND	ND	ND	1.0	3034832
Methyl t-butyl ether (MTBE)	ug/g	ND	0.30	ND	ND	ND	0.10	3034832
Styrene	ug/g	ND	0.30	ND	ND	ND	0.10	3034832
1,1,1,2-Tetrachloroethane	ug/g	ND	0.30	ND	ND	ND	0.10	3034832
ND = Not detected RDL = Reportable Detection Limit QC Batch = Quality Control Batch								

Maxxam Job #: B2H6839  
Report Date: 2012/11/20

Ecoplans Limited  
Client Project #: 1412815  
Site Location: 770 SOMERSET ST. W  
Sampler Initials: PV

### VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		PO2448		PO2451	PO2452	PO2453		
Sampling Date		2012/11/08		2012/11/08	2012/11/08	2012/11/09		
COC Number		380818-05-01		380818-05-01	380818-05-01	380818-05-01		
	<b>Units</b>	<b>BH2 SS3</b>	<b>RDL</b>	<b>BH3 SS3</b>	<b>DUP 1</b>	<b>BH4 SS2</b>	<b>RDL</b>	<b>QC Batch</b>
1,1,2,2-Tetrachloroethane	ug/g	ND	0.30	ND	ND	ND	0.10	3034832
Tetrachloroethylene	ug/g	ND	0.30	ND	ND	ND	0.10	3034832
Toluene	ug/g	ND	0.12	ND	ND	ND	0.040	3034832
1,1,1-Trichloroethane	ug/g	ND	0.30	ND	ND	ND	0.10	3034832
1,1,2-Trichloroethane	ug/g	ND	0.30	ND	ND	ND	0.10	3034832
Trichloroethylene	ug/g	ND	0.30	ND	ND	ND	0.10	3034832
Vinyl Chloride	ug/g	ND	0.12	ND	ND	ND	0.040	3034832
p+m-Xylene	ug/g	ND	0.12	0.043	ND	ND	0.040	3034832
o-Xylene	ug/g	ND	0.12	ND	ND	ND	0.040	3034832
Xylene (Total)	ug/g	ND	0.12	0.043	ND	ND	0.040	3034832
Trichlorofluoromethane (FREON 11)	ug/g	ND	0.30	ND	ND	ND	0.10	3034832
<b>Surrogate Recovery (%)</b>								
4-Bromofluorobenzene	%	97		96	97	95		3034832
D10-o-Xylene	%	111		90	100	114		3034832
D4-1,2-Dichloroethane	%	105		103	104	101		3034832
D8-Toluene	%	99		100	101	101		3034832
ND = Not detected RDL = Reportable Detection Limit QC Batch = Quality Control Batch								



Maxxam Job #: B2H6839  
Report Date: 2012/11/20

Ecoplans Limited  
Client Project #: 1412815  
Site Location: 770 SOMERSET ST. W  
Sampler Initials: PV

### PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		PO2411	PO2413	PO2414	PO2415	PO2417		
Sampling Date		2012/11/09	2012/11/09	2012/11/09	2012/11/09	2012/11/08		
COC Number		380818-01-01	380818-01-01	380818-01-01	380818-01-01	380818-01-01		
	<b>Units</b>	<b>DUP 2</b>	<b>BH5 SS3</b>	<b>BH6 SS2</b>	<b>BH6 SS3</b>	<b>BH7 SS3</b>	<b>RDL</b>	<b>QC Batch</b>

<b>BTEX &amp; F1 Hydrocarbons</b>								
F1 (C6-C10)	ug/g	ND		ND	ND		10	3035391
F1 (C6-C10) - BTEX	ug/g	ND		ND	ND		10	3035391
<b>F2-F4 Hydrocarbons</b>								
F2 (C10-C16 Hydrocarbons)	ug/g	ND	ND	ND	ND	ND	10	3034122
F3 (C16-C34 Hydrocarbons)	ug/g	ND	12	ND	ND	ND	10	3034122
F4 (C34-C50 Hydrocarbons)	ug/g	ND	33	ND	ND	ND	10	3034122
Reached Baseline at C50	ug/g	Yes	Yes	Yes	Yes	Yes		3034122
<b>Surrogate Recovery (%)</b>								
1,4-Difluorobenzene	%	100		98	103			3035391
4-Bromofluorobenzene	%	103		103	92			3035391
D10-Ethylbenzene	%	102		111	101			3035391
D4-1,2-Dichloroethane	%	103		98	102			3035391
o-Terphenyl	%	72	68	68	67	69		3034122

ND = Not detected  
RDL = Reportable Detection Limit  
QC Batch = Quality Control Batch

Maxxam Job #: B2H6839  
Report Date: 2012/11/20

Ecoplans Limited  
Client Project #: 1412815  
Site Location: 770 SOMERSET ST. W  
Sampler Initials: PV

### PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		PO2418			PO2419	PO2446	PO2447		
Sampling Date		2012/11/08			2012/11/08	2012/11/08	2012/11/08		
COC Number		380818-01-01			380818-01-01	380818-05-01	380818-05-01		
	Units	BH8 SS2	RDL	QC Batch	BH8 SS3	BH1 SS3	BH2 SS2	RDL	QC Batch

<b>BTEX &amp; F1 Hydrocarbons</b>									
F1 (C6-C10)	ug/g	ND	30	3036934	ND	ND	ND	10	3035391
F1 (C6-C10) - BTEX	ug/g	ND	30	3036934	ND	ND	ND	10	3035391
<b>F2-F4 Hydrocarbons</b>									
F4G-sg (Grav. Heavy Hydrocarbons)	ug/g	5300	100	3041344					
F2 (C10-C16 Hydrocarbons)	ug/g	46	10	3036453	ND	ND	ND	10	3034122
F3 (C16-C34 Hydrocarbons)	ug/g	440	10	3036453	ND	ND	ND	10	3034122
F4 (C34-C50 Hydrocarbons)	ug/g	1400	10	3036453	ND	ND	ND	10	3034122
Reached Baseline at C50	ug/g	No		3036453	Yes	Yes	Yes		3034122
<b>Surrogate Recovery (%)</b>									
1,4-Difluorobenzene	%	99		3036934					
4-Bromofluorobenzene	%	102		3036934					
D10-Ethylbenzene	%	88		3036934					
D4-1,2-Dichloroethane	%	103		3036934					
1,4-Difluorobenzene	%				103	101	99		3035391
4-Bromofluorobenzene	%				99	105	106		3035391
D10-Ethylbenzene	%				111	96	109		3035391
D4-1,2-Dichloroethane	%				102	99	102		3035391
o-Terphenyl	%	108		3036453	69	67	69		3034122

ND = Not detected  
RDL = Reportable Detection Limit  
QC Batch = Quality Control Batch

Maxxam Job #: B2H6839  
Report Date: 2012/11/20

Ecoplans Limited  
Client Project #: 1412815  
Site Location: 770 SOMERSET ST. W  
Sampler Initials: PV

### PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		PO2448		PO2451	PO2452		
Sampling Date		2012/11/08		2012/11/08	2012/11/08		
COC Number		380818-05-01		380818-05-01	380818-05-01		
	Units	BH2 SS3	QC Batch	BH3 SS3	DUP 1	RDL	QC Batch
<b>BTEX &amp; F1 Hydrocarbons</b>							
F1 (C6-C10)	ug/g	ND	3035391	ND	ND	10	3035391
F1 (C6-C10) - BTEX	ug/g	ND	3035391	ND	ND	10	3035391
<b>F2-F4 Hydrocarbons</b>							
F4G-sg (Grav. Heavy Hydrocarbons)	ug/g			1900		100	3040430
F2 (C10-C16 Hydrocarbons)	ug/g	ND	3034122	ND	ND	10	3037099
F3 (C16-C34 Hydrocarbons)	ug/g	ND	3034122	140	ND	10	3037099
F4 (C34-C50 Hydrocarbons)	ug/g	ND	3034122	410	ND	10	3037099
Reached Baseline at C50	ug/g	Yes	3034122	No	Yes		3037099
<b>Surrogate Recovery (%)</b>							
1,4-Difluorobenzene	%	102	3035391	97	103		3035391
4-Bromofluorobenzene	%	101	3035391	97	81		3035391
D10-Ethylbenzene	%	109	3035391	117	106		3035391
D4-1,2-Dichloroethane	%	100	3035391	98	107		3035391
o-Terphenyl	%	66	3034122	64	63		3037099
ND = Not detected RDL = Reportable Detection Limit QC Batch = Quality Control Batch							

Maxxam Job #: B2H6839  
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Sampler Initials: PV

### PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		PO2453	PO2455		
Sampling Date		2012/11/09	2012/11/08		
COC Number		380818-05-01	380818-02-01		
	<b>Units</b>	<b>BH4 SS2</b>	<b>TCLP</b>	<b>RDL</b>	<b>QC Batch</b>

<b>BTEX &amp; F1 Hydrocarbons</b>					
F1 (C6-C10)	ug/g	ND		20	3036934
F1 (C6-C10) - BTEX	ug/g	ND		20	3036934
<b>F2-F4 Hydrocarbons</b>					
F2 (C10-C16 Hydrocarbons)	ug/g	ND		10	3036453
Leachable F2 (C10-C16 Hydrocarbons)	ug/L		ND	100	3037003
F3 (C16-C34 Hydrocarbons)	ug/g	ND		10	3036453
Leachable F3 (C16-C34 Hydrocarbons)	ug/L		ND	100	3037003
F4 (C34-C50 Hydrocarbons)	ug/g	ND		10	3036453
Leachable F4 (C34-C50 Hydrocarbons)	ug/L		ND	100	3037003
Reached Baseline at C50	ug/g	Yes			3036453
Leachable Reached Baseline at C50	ug/L		Yes	N/A	3037003
<b>Surrogate Recovery (%)</b>					
1,4-Difluorobenzene	%	98			3036934
4-Bromofluorobenzene	%	99			3036934
D10-Ethylbenzene	%	102			3036934
D4-1,2-Dichloroethane	%	101			3036934
Leachable o-Terphenyl	%		99		3037003
o-Terphenyl	%	108			3036453

ND = Not detected  
RDL = Reportable Detection Limit  
QC Batch = Quality Control Batch

Maxxam Job #: B2H6839  
Report Date: 2012/11/20

Ecoplans Limited  
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Site Location: 770 SOMERSET ST. W  
Sampler Initials: PV

### POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		PO2417	PO2419	PO2452	PO2455		
Sampling Date		2012/11/08	2012/11/08	2012/11/08	2012/11/08		
COC Number		380818-01-01	380818-01-01	380818-05-01	380818-02-01		
	<b>Units</b>	<b>BH7 SS3</b>	<b>BH8 SS3</b>	<b>DUP 1</b>	<b>TCLP</b>	<b>RDL</b>	<b>QC Batch</b>

<b>PCBs</b>							
Aroclor 1242	ug/g	ND	ND	ND		0.010	3036975
Aroclor 1248	ug/g	ND	ND	ND		0.010	3036975
Aroclor 1254	ug/g	ND	ND	ND		0.010	3036975
Aroclor 1260	ug/g	ND	ND	ND		0.010	3036975
Leachable Total PCB	ug/L				ND	3	3037202
Total PCB	ug/g	ND	ND	ND		0.010	3036975
<b>Surrogate Recovery (%)</b>							
Decachlorobiphenyl	%	96	98	101			3036975
Leachable Decachlorobiphenyl	%				119		3037202

ND = Not detected  
RDL = Reportable Detection Limit  
QC Batch = Quality Control Batch

Maxxam Job #: B2H6839  
Report Date: 2012/11/20

Ecoplans Limited  
Client Project #: 1412815  
Site Location: 770 SOMERSET ST. W  
Sampler Initials: PV

#### GENERAL COMMENTS

Sample PO2411-01: VOC Analysis: Detection limits were raised due to low weight of soil provided.

Sample PO2413-01: F2-F4 Analysis:  
Duplicate results exceeded RPD acceptance criteria for flagged analytes. This is likely due to sample heterogeneity.

VOC Analysis: Detection limits were raised due to low weight of soil provided.

Sample PO2414-01: VOC Analysis: Detection limits were raised due to low weight of soil provided.

Sample PO2415-01: VOC Analysis: Detection limits were raised due to low weight of soil provided.

Sample PO2417-01: VOC Analysis: Detection limits were raised due to low weight of soil provided.

Sample PO2418-01: VOC Analysis: Detection limits were raised due to low weight of soil provided.

F1-BTEX Analysis: Due to limited amount of sample available for analyses, a smaller than usual portion of the sample was used . Reporting limits were adjusted accordingly.

Sample PO2419-01: VOC Analysis: Detection limits were raised due to low weight of soil provided.

Sample PO2446-01: VOC Analysis: Detection limits were raised due to low weight of soil provided.

Sample PO2447-01: VOC Analysis: Detection limits were raised due to low weight of soil provided.

Sample PO2448-01: VOC Analysis: Detection limits were raised due to low weight of soil provided.

Sample PO2451-01: VOC Analysis: Detection limits were raised due to low weight of soil provided.

Sample PO2452-01: VOC Analysis: Detection limits were raised due to low weight of soil provided.

Sample PO2453-01: VOC Analysis: Detection limits were raised due to low weight of soil provided.

F1-BTEX Analysis: Due to limited amount of sample available for analyses, a smaller than usual portion of the sample was used . Reporting limits were adjusted accordingly.

**Results relate only to the items tested.**

Ecoplans Limited  
Attention: Peter Van Driel  
Client Project #: 1412815  
P.O. #:  
Site Location: 770 SOMERSET ST. W

### Quality Assurance Report

Maxxam Job Number: TB2H6839

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3034122 LHR	Matrix Spike [PO2411-02]	o-Terphenyl	2012/11/13		62	%	30 - 130
		F2 (C10-C16 Hydrocarbons)	2012/11/13		75	%	50 - 130
		F3 (C16-C34 Hydrocarbons)	2012/11/13		75	%	50 - 130
		F4 (C34-C50 Hydrocarbons)	2012/11/13		75	%	50 - 130
	Spiked Blank	o-Terphenyl	2012/11/13		68	%	30 - 130
		F2 (C10-C16 Hydrocarbons)	2012/11/13		82	%	80 - 120
		F3 (C16-C34 Hydrocarbons)	2012/11/13		82	%	80 - 120
		F4 (C34-C50 Hydrocarbons)	2012/11/13		82	%	80 - 120
	Method Blank	o-Terphenyl	2012/11/13		72	%	30 - 130
		F2 (C10-C16 Hydrocarbons)	2012/11/13	ND, RDL=10		ug/g	
		F3 (C16-C34 Hydrocarbons)	2012/11/13	ND, RDL=10		ug/g	
		F4 (C34-C50 Hydrocarbons)	2012/11/13	ND, RDL=10		ug/g	
	RPD [PO2413-01]	F2 (C10-C16 Hydrocarbons)	2012/11/13	NC		%	50
		F3 (C16-C34 Hydrocarbons)	2012/11/13	NC		%	50
		F4 (C34-C50 Hydrocarbons)	2012/11/13	NC		%	50
				12.3		%	50
3034270 HES	RPD [PO2413-01]	Moisture	2012/11/14			%	50
3034832 A_J	Matrix Spike	4-Bromofluorobenzene	2012/11/16		98	%	60 - 140
		D10-o-Xylene	2012/11/16		90	%	60 - 130
		D4-1,2-Dichloroethane	2012/11/16		105	%	60 - 140
		D8-Toluene	2012/11/16		99	%	60 - 140
		Acetone (2-Propanone)	2012/11/16		95	%	60 - 140
		Benzene	2012/11/16		100	%	60 - 140
		Bromodichloromethane	2012/11/16		107	%	60 - 140
		Bromoform	2012/11/16		84	%	60 - 140
		Bromomethane	2012/11/16		95	%	60 - 140
		Carbon Tetrachloride	2012/11/16		109	%	60 - 140
		Chlorobenzene	2012/11/16		93	%	60 - 140
		Chloroform	2012/11/16		103	%	60 - 140
		Dibromochloromethane	2012/11/16		87	%	60 - 140
		1,2-Dichlorobenzene	2012/11/16		98	%	60 - 140
		1,3-Dichlorobenzene	2012/11/16		100	%	60 - 140
		1,4-Dichlorobenzene	2012/11/16		99	%	60 - 140
		Dichlorodifluoromethane (FREON 12)	2012/11/16		90	%	60 - 140
		1,1-Dichloroethane	2012/11/16		89	%	60 - 140
		1,2-Dichloroethane	2012/11/16		103	%	60 - 140
		1,1-Dichloroethylene	2012/11/16		103	%	60 - 140
		cis-1,2-Dichloroethylene	2012/11/16		94	%	60 - 140
		trans-1,2-Dichloroethylene	2012/11/16		98	%	60 - 140
		1,2-Dichloropropane	2012/11/16		100	%	60 - 140
		cis-1,3-Dichloropropene	2012/11/16		99	%	60 - 140
		trans-1,3-Dichloropropene	2012/11/16		102	%	60 - 140
		Ethylbenzene	2012/11/16		102	%	60 - 140
		Ethylene Dibromide	2012/11/16		98	%	60 - 140
		Hexane	2012/11/16		93	%	60 - 140
		Methylene Chloride(Dichloromethane)	2012/11/16		90	%	60 - 140
		Methyl Isobutyl Ketone	2012/11/16		103	%	60 - 140
		Methyl Ethyl Ketone (2-Butanone)	2012/11/16		98	%	60 - 140
		Methyl t-butyl ether (MTBE)	2012/11/16		94	%	60 - 140
		Styrene	2012/11/16		97	%	60 - 140
		1,1,1,2-Tetrachloroethane	2012/11/16		103	%	60 - 140
		1,1,2,2-Tetrachloroethane	2012/11/16		94	%	60 - 140
		Tetrachloroethylene	2012/11/16		96	%	60 - 140
		Toluene	2012/11/16		100	%	60 - 140
		1,1,1-Trichloroethane	2012/11/16		95	%	60 - 140



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### Quality Assurance Report (Continued)

Maxxam Job Number: TB2H6839

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3034832 A_J	Matrix Spike	1,1,2-Trichloroethane	2012/11/16		95	%	60 - 140
		Trichloroethylene	2012/11/16		94	%	60 - 140
		Vinyl Chloride	2012/11/16		100	%	60 - 140
		p+m-Xylene	2012/11/16		104	%	60 - 140
		o-Xylene	2012/11/16		104	%	60 - 140
	Spiked Blank	Trichlorofluoromethane (FREON 11)	2012/11/16		101	%	60 - 140
		4-Bromofluorobenzene	2012/11/15		100	%	60 - 140
		D10-o-Xylene	2012/11/15		101	%	60 - 130
		D4-1,2-Dichloroethane	2012/11/15		108	%	60 - 140
		D8-Toluene	2012/11/15		99	%	60 - 140
		Acetone (2-Propanone)	2012/11/15		101	%	60 - 140
		Benzene	2012/11/15		100	%	60 - 130
		Bromodichloromethane	2012/11/15		110	%	60 - 130
		Bromoform	2012/11/15		88	%	60 - 130
		Bromomethane	2012/11/15		94	%	60 - 140
		Carbon Tetrachloride	2012/11/15		105	%	60 - 130
		Chlorobenzene	2012/11/15		94	%	60 - 130
		Chloroform	2012/11/15		105	%	60 - 130
		Dibromochloromethane	2012/11/15		91	%	60 - 130
		1,2-Dichlorobenzene	2012/11/15		100	%	60 - 130
		1,3-Dichlorobenzene	2012/11/15		101	%	60 - 130
		1,4-Dichlorobenzene	2012/11/15		101	%	60 - 130
		Dichlorodifluoromethane (FREON 12)	2012/11/15		91	%	60 - 140
		1,1-Dichloroethane	2012/11/15		89	%	60 - 130
		1,2-Dichloroethane	2012/11/15		107	%	60 - 130
		1,1-Dichloroethylene	2012/11/15		102	%	60 - 130
		cis-1,2-Dichloroethylene	2012/11/15		94	%	60 - 130
		trans-1,2-Dichloroethylene	2012/11/15		99	%	60 - 130
		1,2-Dichloropropane	2012/11/15		101	%	60 - 130
		cis-1,3-Dichloropropene	2012/11/15		106	%	60 - 130
		trans-1,3-Dichloropropene	2012/11/15		109	%	60 - 130
		Ethylbenzene	2012/11/15		102	%	60 - 130
		Ethylene Dibromide	2012/11/15		102	%	60 - 130
		Hexane	2012/11/15		101	%	60 - 130
		Methylene Chloride(Dichloromethane)	2012/11/15		92	%	60 - 130
		Methyl Isobutyl Ketone	2012/11/15		108	%	60 - 130
		Methyl Ethyl Ketone (2-Butanone)	2012/11/15		105	%	60 - 140
		Methyl t-butyl ether (MTBE)	2012/11/15		100	%	60 - 130
		Styrene	2012/11/15		100	%	60 - 130
		1,1,1,2-Tetrachloroethane	2012/11/15		104	%	60 - 130
		1,1,2,2-Tetrachloroethane	2012/11/15		100	%	60 - 130
		Tetrachloroethylene	2012/11/15		94	%	60 - 130
		Toluene	2012/11/15		99	%	60 - 130
		1,1,1-Trichloroethane	2012/11/15		96	%	60 - 130
		1,1,2-Trichloroethane	2012/11/15		99	%	60 - 130
		Trichloroethylene	2012/11/15		94	%	60 - 130
		Vinyl Chloride	2012/11/15		99	%	60 - 130
		p+m-Xylene	2012/11/15		105	%	60 - 130
		o-Xylene	2012/11/15		104	%	60 - 130
		Trichlorofluoromethane (FREON 11)	2012/11/15		99	%	60 - 130
	Method Blank	4-Bromofluorobenzene	2012/11/15		96	%	60 - 140
		D10-o-Xylene	2012/11/15		92	%	60 - 130
		D4-1,2-Dichloroethane	2012/11/15		103	%	60 - 140
		D8-Toluene	2012/11/15		100	%	60 - 140
		Acetone (2-Propanone)	2012/11/15	ND, RDL=0.50		ug/g	

Ecoplans Limited  
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### Quality Assurance Report (Continued)

Maxxam Job Number: TB2H6839

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3034832 A_J	Method Blank	Benzene	2012/11/15	ND, RDL=0.020		ug/g	
		Bromodichloromethane	2012/11/15	ND, RDL=0.050		ug/g	
		Bromoform	2012/11/15	ND, RDL=0.050		ug/g	
		Bromomethane	2012/11/15	ND, RDL=0.050		ug/g	
		Carbon Tetrachloride	2012/11/15	ND, RDL=0.050		ug/g	
		Chlorobenzene	2012/11/15	ND, RDL=0.050		ug/g	
		Chloroform	2012/11/15	ND, RDL=0.050		ug/g	
		Dibromochloromethane	2012/11/15	ND, RDL=0.050		ug/g	
		1,2-Dichlorobenzene	2012/11/15	ND, RDL=0.050		ug/g	
		1,3-Dichlorobenzene	2012/11/15	ND, RDL=0.050		ug/g	
		1,4-Dichlorobenzene	2012/11/15	ND, RDL=0.050		ug/g	
		Dichlorodifluoromethane (FREON 12)	2012/11/15	ND, RDL=0.050		ug/g	
		1,1-Dichloroethane	2012/11/15	ND, RDL=0.050		ug/g	
		1,2-Dichloroethane	2012/11/15	ND, RDL=0.050		ug/g	
		1,1-Dichloroethylene	2012/11/15	ND, RDL=0.050		ug/g	
		cis-1,2-Dichloroethylene	2012/11/15	ND, RDL=0.050		ug/g	
		trans-1,2-Dichloroethylene	2012/11/15	ND, RDL=0.050		ug/g	
		1,2-Dichloropropane	2012/11/15	ND, RDL=0.050		ug/g	
		cis-1,3-Dichloropropene	2012/11/15	ND, RDL=0.030		ug/g	
		trans-1,3-Dichloropropene	2012/11/15	ND, RDL=0.040		ug/g	
		Ethylbenzene	2012/11/15	ND, RDL=0.020		ug/g	
		Ethylene Dibromide	2012/11/15	ND, RDL=0.050		ug/g	
		Hexane	2012/11/15	ND, RDL=0.050		ug/g	
		Methylene Chloride(Dichloromethane)	2012/11/15	ND, RDL=0.050		ug/g	
		Methyl Isobutyl Ketone	2012/11/15	ND, RDL=0.50		ug/g	
		Methyl Ethyl Ketone (2-Butanone)	2012/11/15	ND, RDL=0.50		ug/g	
		Methyl t-butyl ether (MTBE)	2012/11/15	ND, RDL=0.050		ug/g	
		Styrene	2012/11/15	ND, RDL=0.050		ug/g	
		1,1,1,2-Tetrachloroethane	2012/11/15	ND, RDL=0.050		ug/g	
		1,1,2,2-Tetrachloroethane	2012/11/15	ND, RDL=0.050		ug/g	
		Tetrachloroethylene	2012/11/15	ND, RDL=0.050		ug/g	
		Toluene	2012/11/15	ND, RDL=0.020		ug/g	
		1,1,1-Trichloroethane	2012/11/15	ND, RDL=0.050		ug/g	
		1,1,2-Trichloroethane	2012/11/15	ND, RDL=0.050		ug/g	
		Trichloroethylene	2012/11/15	ND, RDL=0.050		ug/g	
		Vinyl Chloride	2012/11/15	ND, RDL=0.020		ug/g	
		p+m-Xylene	2012/11/15	ND, RDL=0.020		ug/g	
		o-Xylene	2012/11/15	ND, RDL=0.020		ug/g	
		Xylene (Total)	2012/11/15	ND, RDL=0.020		ug/g	
		Trichlorofluoromethane (FREON 11)	2012/11/15	ND, RDL=0.050		ug/g	
	RPD	Acetone (2-Propanone)	2012/11/15	NC		%	50
		Benzene	2012/11/15	NC		%	50
		Bromodichloromethane	2012/11/15	NC		%	50
		Bromoform	2012/11/15	NC		%	50
		Bromomethane	2012/11/15	NC		%	50
		Carbon Tetrachloride	2012/11/15	NC		%	50
		Chlorobenzene	2012/11/15	NC		%	50
		Chloroform	2012/11/15	NC		%	50
		Dibromochloromethane	2012/11/15	NC		%	50
		1,2-Dichlorobenzene	2012/11/15	NC		%	50
		1,3-Dichlorobenzene	2012/11/15	NC		%	50
		1,4-Dichlorobenzene	2012/11/15	NC		%	50
		Dichlorodifluoromethane (FREON 12)	2012/11/15	NC		%	50
		1,1-Dichloroethane	2012/11/15	NC		%	50
		1,2-Dichloroethane	2012/11/15	NC		%	50

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QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3034832 A_J	RPD	1,1-Dichloroethylene	2012/11/15	NC		%	50
		cis-1,2-Dichloroethylene	2012/11/15	NC		%	50
		trans-1,2-Dichloroethylene	2012/11/15	NC		%	50
		1,2-Dichloropropane	2012/11/15	NC		%	50
		cis-1,3-Dichloropropene	2012/11/15	NC		%	50
		trans-1,3-Dichloropropene	2012/11/15	NC		%	50
		Ethylbenzene	2012/11/15	NC		%	50
		Ethylene Dibromide	2012/11/15	NC		%	50
		Hexane	2012/11/15	NC		%	50
		Methylene Chloride(Dichloromethane)	2012/11/15	NC		%	50
		Methyl Isobutyl Ketone	2012/11/15	NC		%	50
		Methyl Ethyl Ketone (2-Butanone)	2012/11/15	NC		%	50
		Methyl t-butyl ether (MTBE)	2012/11/15	NC		%	50
		Styrene	2012/11/15	NC		%	50
		1,1,1,2-Tetrachloroethane	2012/11/15	NC		%	50
		1,1,2,2-Tetrachloroethane	2012/11/15	NC		%	50
		Tetrachloroethylene	2012/11/15	NC		%	50
		Toluene	2012/11/15	NC		%	50
		1,1,1-Trichloroethane	2012/11/15	NC		%	50
		1,1,2-Trichloroethane	2012/11/15	NC		%	50
		Trichloroethylene	2012/11/15	NC		%	50
		Vinyl Chloride	2012/11/15	NC		%	50
		p+m-Xylene	2012/11/15	NC		%	50
		o-Xylene	2012/11/15	NC		%	50
		Xylene (Total)	2012/11/15	NC		%	50
		Trichlorofluoromethane (FREON 11)	2012/11/15	NC		%	50
3035391 STE	Spiked Blank	1,4-Difluorobenzene	2012/11/14		99	%	60 - 140
		4-Bromofluorobenzene	2012/11/14		101	%	60 - 140
		D10-Ethylbenzene	2012/11/14		105	%	30 - 130
		D4-1,2-Dichloroethane	2012/11/14		102	%	60 - 140
		F1 (C6-C10)	2012/11/14		84	%	80 - 120
	RPD	F1 (C6-C10)	2012/11/14	7.6		%	50
	Method Blank	1,4-Difluorobenzene	2012/11/14		102	%	60 - 140
		4-Bromofluorobenzene	2012/11/14		101	%	60 - 140
		D10-Ethylbenzene	2012/11/14		95	%	30 - 130
		D4-1,2-Dichloroethane	2012/11/14		106	%	60 - 140
		F1 (C6-C10)	2012/11/14	ND, RDL=10		ug/g	
		F1 (C6-C10) - BTEX	2012/11/14	ND, RDL=10		ug/g	
3036084 MC	Matrix Spike	Leachable Mercury (Hg)	2012/11/15		104	%	80 - 120
	Leachate Blank	Leachable Mercury (Hg)	2012/11/15	ND, RDL=0.001		mg/L	
	Spiked Blank	Leachable Mercury (Hg)	2012/11/15		103	%	80 - 120
	Method Blank	Leachable Mercury (Hg)	2012/11/15	ND, RDL=0.001		mg/L	
	RPD	Leachable Mercury (Hg)	2012/11/15	NC		%	25
3036282 PBA	Matrix Spike	Leachable Arsenic (As)	2012/11/15		110	%	75 - 125
		Leachable Barium (Ba)	2012/11/15		109	%	75 - 125
		Leachable Boron (B)	2012/11/15		111	%	75 - 125
		Leachable Cadmium (Cd)	2012/11/15		110	%	75 - 125
		Leachable Chromium (Cr)	2012/11/15		110	%	75 - 125
		Leachable Lead (Pb)	2012/11/15		110	%	75 - 125
		Leachable Selenium (Se)	2012/11/15		116	%	75 - 125
		Leachable Silver (Ag)	2012/11/15		104	%	75 - 125
		Leachable Uranium (U)	2012/11/15		110	%	75 - 125
	Leachate Blank	Leachable Arsenic (As)	2012/11/15	ND, RDL=0.2		mg/L	
		Leachable Barium (Ba)	2012/11/15	ND, RDL=0.2		mg/L	
		Leachable Boron (B)	2012/11/15	ND, RDL=0.1		mg/L	

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QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3036282 PBA	Leachate Blank	Leachable Cadmium (Cd)	2012/11/15	ND, RDL=0.05		mg/L	
		Leachable Chromium (Cr)	2012/11/15	ND, RDL=0.1		mg/L	
		Leachable Lead (Pb)	2012/11/15	ND, RDL=0.1		mg/L	
		Leachable Selenium (Se)	2012/11/15	ND, RDL=0.1		mg/L	
		Leachable Silver (Ag)	2012/11/15	ND, RDL=0.01		mg/L	
		Leachable Uranium (U)	2012/11/15	ND, RDL=0.01		mg/L	
	Spiked Blank	Leachable Arsenic (As)	2012/11/15		105	%	75 - 125
		Leachable Barium (Ba)	2012/11/15		107	%	75 - 125
		Leachable Boron (B)	2012/11/15		110	%	75 - 125
		Leachable Cadmium (Cd)	2012/11/15		105	%	75 - 125
		Leachable Chromium (Cr)	2012/11/15		105	%	75 - 125
		Leachable Lead (Pb)	2012/11/15		107	%	75 - 125
		Leachable Selenium (Se)	2012/11/15		109	%	75 - 125
		Leachable Silver (Ag)	2012/11/15		102	%	75 - 125
		Leachable Uranium (U)	2012/11/15		103	%	75 - 125
	Method Blank	Leachable Arsenic (As)	2012/11/15	ND, RDL=0.2		mg/L	
		Leachable Barium (Ba)	2012/11/15	ND, RDL=0.2		mg/L	
		Leachable Boron (B)	2012/11/15	ND, RDL=0.1		mg/L	
		Leachable Cadmium (Cd)	2012/11/15	ND, RDL=0.05		mg/L	
		Leachable Chromium (Cr)	2012/11/15	ND, RDL=0.1		mg/L	
		Leachable Lead (Pb)	2012/11/15	ND, RDL=0.1		mg/L	
		Leachable Selenium (Se)	2012/11/15	ND, RDL=0.1		mg/L	
		Leachable Silver (Ag)	2012/11/15	ND, RDL=0.01		mg/L	
		Leachable Uranium (U)	2012/11/15	ND, RDL=0.01		mg/L	
	RPD	Leachable Arsenic (As)	2012/11/15	NC		%	35
		Leachable Barium (Ba)	2012/11/15	NC		%	35
		Leachable Boron (B)	2012/11/15	NC		%	35
		Leachable Cadmium (Cd)	2012/11/15	NC		%	35
		Leachable Chromium (Cr)	2012/11/15	NC		%	35
		Leachable Lead (Pb)	2012/11/15	NC		%	35
		Leachable Selenium (Se)	2012/11/15	NC		%	35
		Leachable Silver (Ag)	2012/11/15	NC		%	35
		Leachable Uranium (U)	2012/11/15	NC		%	35
		Chromium (VI)	2012/11/15			%	
3036385 SAC	Matrix Spike	Chromium (VI)	2012/11/15		36 (1)	%	75 - 125
	QC Standard	Chromium (VI)	2012/11/15		108	%	75 - 125
	Spiked Blank	Chromium (VI)	2012/11/15		98	%	80 - 120
	Method Blank	Chromium (VI)	2012/11/15	ND, RDL=0.2		ug/g	
	RPD	Chromium (VI)	2012/11/15	NC		%	35
3036405 H_W	Matrix Spike [PO2455-02]	Leachable (ZHE) 1,4-Difluorobenzene	2012/11/16		103	%	60 - 140
		Leachable (ZHE) 4-Bromofluorobenzene	2012/11/16		104	%	60 - 140
		Leachable (ZHE) D10-Ethylbenzene	2012/11/16		96	%	30 - 130
		Leachable (ZHE) D4-1,2-Dichloroethane	2012/11/16		93	%	60 - 140
		Leachable (ZHE) Benzene	2012/11/16		102	%	70 - 130
		Leachable (ZHE) Toluene	2012/11/16		93	%	70 - 130
		Leachable (ZHE) Ethylbenzene	2012/11/16		99	%	70 - 130
		Leachable (ZHE) o-Xylene	2012/11/16		94	%	70 - 130
		Leachable (ZHE) p+m-Xylene	2012/11/16		86	%	70 - 130
		Leachable (ZHE) F1 (C6-C10)	2012/11/16		99	%	70 - 130
	Leachate Blank	Leachable (ZHE) 1,4-Difluorobenzene	2012/11/16		103	%	60 - 140
		Leachable (ZHE) 4-Bromofluorobenzene	2012/11/16		99	%	60 - 140
		Leachable (ZHE) D10-Ethylbenzene	2012/11/16		95	%	30 - 130
		Leachable (ZHE) D4-1,2-Dichloroethane	2012/11/16		94	%	60 - 140
		Leachable (ZHE) Benzene	2012/11/16	ND, RDL=0.8		ug/L	
		Leachable (ZHE) Toluene	2012/11/16	ND, RDL=0.8		ug/L	

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3036405 H_W	Leachate Blank	Leachable (ZHE) Ethylbenzene	2012/11/16	ND, RDL=0.8		ug/L	
		Leachable (ZHE) o-Xylene	2012/11/16	ND, RDL=0.8		ug/L	
		Leachable (ZHE) p+m-Xylene	2012/11/16	ND, RDL=2		ug/L	
		Leachable (ZHE) Total Xylenes	2012/11/16	ND, RDL=2		ug/L	
		Leachable (ZHE) F1 (C6-C10)	2012/11/16	ND, RDL=1000		ug/L	
	Spiked Blank	Leachable (ZHE) F1 (C6-C10) - BTEX	2012/11/16	ND, RDL=300		ug/L	
		Leachable (ZHE) 1,4-Difluorobenzene	2012/11/16		102	%	60 - 140
		Leachable (ZHE) 4-Bromofluorobenzene	2012/11/16		103	%	60 - 140
		Leachable (ZHE) D10-Ethylbenzene	2012/11/16		96	%	30 - 130
		Leachable (ZHE) D4-1,2-Dichloroethane	2012/11/16		92	%	60 - 140
		Leachable (ZHE) Benzene	2012/11/16		102	%	70 - 130
		Leachable (ZHE) Toluene	2012/11/16		92	%	70 - 130
		Leachable (ZHE) Ethylbenzene	2012/11/16		98	%	70 - 130
		Leachable (ZHE) o-Xylene	2012/11/16		91	%	70 - 130
		Leachable (ZHE) p+m-Xylene	2012/11/16		85	%	70 - 130
	Method Blank	Leachable (ZHE) F1 (C6-C10)	2012/11/16		95	%	70 - 130
		Leachable (ZHE) 1,4-Difluorobenzene	2012/11/16		103	%	60 - 140
		Leachable (ZHE) 4-Bromofluorobenzene	2012/11/16		99	%	60 - 140
		Leachable (ZHE) D10-Ethylbenzene	2012/11/16		96	%	30 - 130
		Leachable (ZHE) D4-1,2-Dichloroethane	2012/11/16		96	%	60 - 140
		Leachable (ZHE) Benzene	2012/11/16	ND, RDL=0.8		ug/L	
		Leachable (ZHE) Toluene	2012/11/16	ND, RDL=0.8		ug/L	
		Leachable (ZHE) Ethylbenzene	2012/11/16	ND, RDL=0.8		ug/L	
		Leachable (ZHE) o-Xylene	2012/11/16	ND, RDL=0.8		ug/L	
		Leachable (ZHE) p+m-Xylene	2012/11/16	ND, RDL=2		ug/L	
	RPD [PO2455-02]	Leachable (ZHE) Total Xylenes	2012/11/16	ND, RDL=2		ug/L	
		Leachable (ZHE) F1 (C6-C10)	2012/11/16	ND, RDL=1000		ug/L	
		Leachable (ZHE) F1 (C6-C10) - BTEX	2012/11/16	ND, RDL=1000		ug/L	
		Leachable (ZHE) Benzene	2012/11/16	NC		%	40
		Leachable (ZHE) Toluene	2012/11/16	NC		%	40
		Leachable (ZHE) Ethylbenzene	2012/11/16	NC		%	40
		Leachable (ZHE) o-Xylene	2012/11/16	NC		%	40
		Leachable (ZHE) p+m-Xylene	2012/11/16	NC		%	40
		Leachable (ZHE) Total Xylenes	2012/11/16	NC		%	40
		Leachable (ZHE) F1 (C6-C10)	2012/11/16	NC		%	40
		Leachable (ZHE) F1 (C6-C10) - BTEX	2012/11/16	NC		%	40
3036453 DPO	Matrix Spike	o-Terphenyl	2012/11/15		108	%	50 - 130
		F2 (C10-C16 Hydrocarbons)	2012/11/15		98	%	50 - 130
		F3 (C16-C34 Hydrocarbons)	2012/11/15		90	%	50 - 130
		F4 (C34-C50 Hydrocarbons)	2012/11/15		108	%	50 - 130
	Spiked Blank	o-Terphenyl	2012/11/15		103	%	50 - 130
		F2 (C10-C16 Hydrocarbons)	2012/11/15		90	%	80 - 120
		F3 (C16-C34 Hydrocarbons)	2012/11/15		101	%	80 - 120
		F4 (C34-C50 Hydrocarbons)	2012/11/15		93	%	80 - 120
	Method Blank	o-Terphenyl	2012/11/15		110	%	50 - 130
		F2 (C10-C16 Hydrocarbons)	2012/11/15	ND, RDL=10		ug/g	
		F3 (C16-C34 Hydrocarbons)	2012/11/15	ND, RDL=10		ug/g	
		F4 (C34-C50 Hydrocarbons)	2012/11/15	ND, RDL=10		ug/g	
	RPD	F2 (C10-C16 Hydrocarbons)	2012/11/15	NC		%	30
		F3 (C16-C34 Hydrocarbons)	2012/11/15	7.1		%	30
		F4 (C34-C50 Hydrocarbons)	2012/11/15	NC		%	30
3036788 SAC	Matrix Spike						
	[PO2447-01]	Chromium (VI)	2012/11/17		80	%	75 - 125
	QC Standard	Chromium (VI)	2012/11/17		87	%	75 - 125
	Spiked Blank	Chromium (VI)	2012/11/17		98	%	80 - 120



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3036788 SAC	Method Blank	Chromium (VI)	2012/11/17	ND, RDL=0.2		ug/g	
	RPD [PO2447-01]	Chromium (VI)	2012/11/17	NC		%	35
3036794 DTI	Matrix Spike	D10-Anthracene	2012/11/15		93	%	50 - 130
		D14-Terphenyl (FS)	2012/11/15		93	%	50 - 130
		D8-Acenaphthylene	2012/11/15		79	%	50 - 130
		Acenaphthene	2012/11/15		84	%	50 - 130
		Acenaphthylene	2012/11/15		80	%	50 - 130
		Anthracene	2012/11/15		87	%	50 - 130
		Benzo(a)anthracene	2012/11/15		112	%	50 - 130
		Benzo(a)pyrene	2012/11/15		113	%	50 - 130
		Benzo(b/j)fluoranthene	2012/11/15		99	%	50 - 130
		Benzo(g,h,i)perylene	2012/11/15		107	%	50 - 130
		Benzo(k)fluoranthene	2012/11/15		93	%	50 - 130
		Chrysene	2012/11/15		106	%	50 - 130
		Dibenz(a,h)anthracene	2012/11/15		99	%	50 - 130
		Fluoranthene	2012/11/15		NC (2)	%	50 - 130
		Fluorene	2012/11/15		89	%	50 - 130
		Indeno(1,2,3-cd)pyrene	2012/11/15		109	%	50 - 130
		1-Methylnaphthalene	2012/11/15		72	%	50 - 130
		2-Methylnaphthalene	2012/11/15		72	%	50 - 130
		Naphthalene	2012/11/15		70	%	50 - 130
		Phenanthrene	2012/11/15		112	%	50 - 130
		Pyrene	2012/11/15		125	%	50 - 130
	Spiked Blank	D10-Anthracene	2012/11/15		87	%	50 - 130
		D14-Terphenyl (FS)	2012/11/15		91	%	50 - 130
		D8-Acenaphthylene	2012/11/15		83	%	50 - 130
		Acenaphthene	2012/11/15		87	%	50 - 130
		Acenaphthylene	2012/11/15		84	%	50 - 130
		Anthracene	2012/11/15		82	%	50 - 130
		Benzo(a)anthracene	2012/11/15		97	%	50 - 130
		Benzo(a)pyrene	2012/11/15		99	%	50 - 130
		Benzo(b/j)fluoranthene	2012/11/15		90	%	50 - 130
		Benzo(g,h,i)perylene	2012/11/15		99	%	50 - 130
		Benzo(k)fluoranthene	2012/11/15		101	%	50 - 130
		Chrysene	2012/11/15		93	%	50 - 130
		Dibenz(a,h)anthracene	2012/11/15		99	%	50 - 130
		Fluoranthene	2012/11/15		91	%	50 - 130
		Fluorene	2012/11/15		88	%	50 - 130
		Indeno(1,2,3-cd)pyrene	2012/11/15		98	%	50 - 130
		1-Methylnaphthalene	2012/11/15		83	%	50 - 130
		2-Methylnaphthalene	2012/11/15		81	%	50 - 130
		Naphthalene	2012/11/15		82	%	50 - 130
		Phenanthrene	2012/11/15		87	%	50 - 130
		Pyrene	2012/11/15		93	%	50 - 130
	Method Blank	D10-Anthracene	2012/11/15		83	%	50 - 130
		D14-Terphenyl (FS)	2012/11/15		85	%	50 - 130
		D8-Acenaphthylene	2012/11/15		78	%	50 - 130
		Acenaphthene	2012/11/15	ND, RDL=0.0050		ug/g	
		Acenaphthylene	2012/11/15	ND, RDL=0.0050		ug/g	
		Anthracene	2012/11/15	ND, RDL=0.0050		ug/g	
		Benzo(a)anthracene	2012/11/15	ND, RDL=0.0050		ug/g	
		Benzo(a)pyrene	2012/11/15	ND, RDL=0.0050		ug/g	
		Benzo(b/j)fluoranthene	2012/11/15	ND, RDL=0.0050		ug/g	
		Benzo(g,h,i)perylene	2012/11/15	ND, RDL=0.0050		ug/g	
		Benzo(k)fluoranthene	2012/11/15	ND, RDL=0.0050		ug/g	

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QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3036794 DTI	Method Blank	Chrysene	2012/11/15	ND, RDL=0.0050		ug/g	
		Dibenz(a,h)anthracene	2012/11/15	ND, RDL=0.0050		ug/g	
		Fluoranthene	2012/11/15	ND, RDL=0.0050		ug/g	
		Fluorene	2012/11/15	ND, RDL=0.0050		ug/g	
		Indeno(1,2,3-cd)pyrene	2012/11/15	ND, RDL=0.0050		ug/g	
		1-Methylnaphthalene	2012/11/15	ND, RDL=0.0050		ug/g	
		2-Methylnaphthalene	2012/11/15	ND, RDL=0.0050		ug/g	
		Naphthalene	2012/11/15	ND, RDL=0.0050		ug/g	
		Phenanthrene	2012/11/15	ND, RDL=0.0050		ug/g	
		Pyrene	2012/11/15	ND, RDL=0.0050		ug/g	
	RPD	Acenaphthene	2012/11/15	NC		%	40
		Acenaphthylene	2012/11/15	NC		%	40
		Anthracene	2012/11/15	NC		%	40
		Benzo(a)anthracene	2012/11/15	16.9		%	40
		Benzo(a)pyrene	2012/11/15	9.4		%	40
		Benzo(b/j)fluoranthene	2012/11/15	9.7		%	40
		Benzo(g,h,i)perylene	2012/11/15	3.3		%	40
		Benzo(k)fluoranthene	2012/11/15	NC		%	40
		Chrysene	2012/11/15	9.2		%	40
		Dibenz(a,h)anthracene	2012/11/15	NC		%	40
		Fluoranthene	2012/11/15	11.8		%	40
		Fluorene	2012/11/15	NC		%	40
		Indeno(1,2,3-cd)pyrene	2012/11/15	4.1		%	40
		1-Methylnaphthalene	2012/11/15	NC		%	40
		2-Methylnaphthalene	2012/11/15	NC		%	40
		Naphthalene	2012/11/15	NC		%	40
		Phenanthrene	2012/11/15	0.4		%	40
		Pyrene	2012/11/15	11.2		%	40
3036853 LHA	Matrix Spike	Free Cyanide	2012/11/15		100	%	75 - 125
	Spiked Blank	Free Cyanide	2012/11/15		104	%	80 - 120
	Method Blank	Free Cyanide	2012/11/15	ND, RDL=0.01		ug/g	
	RPD	Free Cyanide	2012/11/15	NC		%	35
3036890 BMO	Matrix Spike	Free Cyanide	2012/11/17		110	%	75 - 125
	[PO2447-01]	Free Cyanide	2012/11/17		97	%	80 - 120
	Spiked Blank	Free Cyanide	2012/11/17	ND, RDL=0.01		ug/g	
	Method Blank	Free Cyanide	2012/11/17	NC		%	35
3036934 SHK	Matrix Spike	1,4-Difluorobenzene	2012/11/15		100	%	60 - 140
		4-Bromofluorobenzene	2012/11/15		102	%	60 - 140
		D10-Ethylbenzene	2012/11/15		92	%	60 - 140
		D4-1,2-Dichloroethane	2012/11/15		101	%	60 - 140
		F1 (C6-C10)	2012/11/15		77	%	60 - 140
	Spiked Blank	1,4-Difluorobenzene	2012/11/15		98	%	60 - 140
		4-Bromofluorobenzene	2012/11/15		102	%	60 - 140
		D10-Ethylbenzene	2012/11/15		82	%	60 - 140
		D4-1,2-Dichloroethane	2012/11/15		100	%	60 - 140
		F1 (C6-C10)	2012/11/15		91	%	80 - 120
	Method Blank	1,4-Difluorobenzene	2012/11/15		100	%	60 - 140
		4-Bromofluorobenzene	2012/11/15		100	%	60 - 140
		D10-Ethylbenzene	2012/11/15		85	%	60 - 140
		D4-1,2-Dichloroethane	2012/11/15		103	%	60 - 140
		F1 (C6-C10)	2012/11/15	ND, RDL=10		ug/g	
	RPD	F1 (C6-C10) - BTEX	2012/11/15	ND, RDL=10		ug/g	
		F1 (C6-C10)	2012/11/15	NC		%	50
		F1 (C6-C10) - BTEX	2012/11/15	NC		%	50



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QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3036975 JZ	Matrix Spike	Decachlorobiphenyl	2012/11/16		93	%	60 - 130
		Aroclor 1260	2012/11/16		108	%	60 - 130
		Total PCB	2012/11/16		108	%	60 - 130
	Spiked Blank	Decachlorobiphenyl	2012/11/16		105	%	60 - 130
		Aroclor 1260	2012/11/16		123	%	60 - 130
		Total PCB	2012/11/16		123	%	60 - 130
	Method Blank	Decachlorobiphenyl	2012/11/16		104	%	60 - 130
		Aroclor 1242	2012/11/16	ND, RDL=0.010		ug/g	
		Aroclor 1248	2012/11/16	ND, RDL=0.010		ug/g	
		Aroclor 1254	2012/11/16	ND, RDL=0.010		ug/g	
		Aroclor 1260	2012/11/16	ND, RDL=0.010		ug/g	
		Total PCB	2012/11/16	ND, RDL=0.010		ug/g	
	RPD	Aroclor 1242	2012/11/16	NC		%	50
		Aroclor 1248	2012/11/16	NC		%	50
		Aroclor 1254	2012/11/16	NC		%	50
		Aroclor 1260	2012/11/16	NC		%	50
		Total PCB	2012/11/16	NC		%	50
3037003 KLI	Matrix Spike [PO2455-01]	Leachable o-Terphenyl	2012/11/16		101	%	60 - 130
		Leachable F2 (C10-C16 Hydrocarbons)	2012/11/16		95	%	50 - 130
		Leachable F3 (C16-C34 Hydrocarbons)	2012/11/16		96	%	50 - 130
		Leachable F4 (C34-C50 Hydrocarbons)	2012/11/16		94	%	50 - 130
	Leachate Blank	Leachable o-Terphenyl	2012/11/16		101	%	60 - 130
		Leachable F2 (C10-C16 Hydrocarbons)	2012/11/16	ND, RDL=100		ug/L	
		Leachable F3 (C16-C34 Hydrocarbons)	2012/11/16	ND, RDL=100		ug/L	
		Leachable F4 (C34-C50 Hydrocarbons)	2012/11/16	ND, RDL=100		ug/L	
	Spiked Blank	Leachable Reached Baseline at C50	2012/11/16	YES		ug/L	
		Leachable o-Terphenyl	2012/11/16		100	%	60 - 130
		Leachable F2 (C10-C16 Hydrocarbons)	2012/11/16		98	%	70 - 130
		Leachable F3 (C16-C34 Hydrocarbons)	2012/11/16		100	%	70 - 130
		Leachable F4 (C34-C50 Hydrocarbons)	2012/11/16		95	%	70 - 130
	Method Blank	Leachable o-Terphenyl	2012/11/16		101	%	60 - 130
		Leachable F2 (C10-C16 Hydrocarbons)	2012/11/16	ND, RDL=100		ug/L	
		Leachable F3 (C16-C34 Hydrocarbons)	2012/11/16	ND, RDL=100		ug/L	
		Leachable F4 (C34-C50 Hydrocarbons)	2012/11/16	ND, RDL=100		ug/L	
	RPD [PO2455-01]	Leachable F2 (C10-C16 Hydrocarbons)	2012/11/16	NC		%	40
		Leachable F3 (C16-C34 Hydrocarbons)	2012/11/16	NC		%	40
		Leachable F4 (C34-C50 Hydrocarbons)	2012/11/16	NC		%	40
		Leachable Reached Baseline at C50	2012/11/16	NC		%	40
3037099 LHR	Matrix Spike [PO2451-01]	o-Terphenyl	2012/11/16		62	%	30 - 130
		F2 (C10-C16 Hydrocarbons)	2012/11/16		86	%	50 - 130
		F3 (C16-C34 Hydrocarbons)	2012/11/16		86	%	50 - 130
		F4 (C34-C50 Hydrocarbons)	2012/11/16		86	%	50 - 130
	Spiked Blank	o-Terphenyl	2012/11/16		67	%	30 - 130
		F2 (C10-C16 Hydrocarbons)	2012/11/16		101	%	80 - 120
		F3 (C16-C34 Hydrocarbons)	2012/11/16		101	%	80 - 120
		F4 (C34-C50 Hydrocarbons)	2012/11/16		101	%	80 - 120
	Method Blank	o-Terphenyl	2012/11/16		70	%	30 - 130
		F2 (C10-C16 Hydrocarbons)	2012/11/16	ND, RDL=10		ug/g	
		F3 (C16-C34 Hydrocarbons)	2012/11/16	ND, RDL=10		ug/g	
		F4 (C34-C50 Hydrocarbons)	2012/11/16	ND, RDL=10		ug/g	
	RPD [PO2452-03]	F2 (C10-C16 Hydrocarbons)	2012/11/16	NC		%	50
		F3 (C16-C34 Hydrocarbons)	2012/11/16	NC		%	50
		F4 (C34-C50 Hydrocarbons)	2012/11/16	NC		%	50

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QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3037130 SAU	Matrix Spike	Leachable Fluoride (F-)	2012/11/15		96	%	80 - 120
	Leachate Blank	Leachable Fluoride (F-)	2012/11/15	ND, RDL=0.1		mg/L	
	Spiked Blank	Leachable Fluoride (F-)	2012/11/15		103	%	80 - 120
	Method Blank	Leachable Fluoride (F-)	2012/11/15	ND, RDL=0.1		mg/L	
	RPD	Leachable Fluoride (F-)	2012/11/15	NC		%	25
3037135 C_H	Matrix Spike	Leachable Nitrite (N)	2012/11/15		97	%	80 - 120
		Leachable Nitrate (N)	2012/11/15		90	%	80 - 120
		Leachable Nitrate + Nitrite	2012/11/15		92	%	80 - 120
	Leachate Blank	Leachable Nitrite (N)	2012/11/15	ND, RDL=0.1		mg/L	
		Leachable Nitrate (N)	2012/11/15	ND, RDL=1		mg/L	
		Leachable Nitrate + Nitrite	2012/11/15	ND, RDL=1		mg/L	
	Spiked Blank	Leachable Nitrite (N)	2012/11/15		101	%	85 - 115
		Leachable Nitrate (N)	2012/11/15		95	%	85 - 115
		Leachable Nitrate + Nitrite	2012/11/15		96	%	85 - 115
	Method Blank	Leachable Nitrite (N)	2012/11/15	ND, RDL=0.1		mg/L	
		Leachable Nitrate (N)	2012/11/15	ND, RDL=1		mg/L	
		Leachable Nitrate + Nitrite	2012/11/15	ND, RDL=1		mg/L	
	RPD	Leachable Nitrite (N)	2012/11/15	NC		%	25
		Leachable Nitrate (N)	2012/11/15	NC		%	25
		Leachable Nitrate + Nitrite	2012/11/15	NC		%	25
3037136 LHA	Matrix Spike	Leachable Free Cyanide	2012/11/15		106	%	80 - 120
	Leachate Blank	Leachable Free Cyanide	2012/11/15	ND, RDL=0.002		mg/L	
	Spiked Blank	Leachable Free Cyanide	2012/11/15		101	%	80 - 120
	Method Blank	Leachable Free Cyanide	2012/11/15	ND, RDL=0.002		mg/L	
	RPD	Leachable Free Cyanide	2012/11/15	NC		%	20
3037202 JZ	Spiked Blank	Leachable Decachlorobiphenyl	2012/11/16		113	%	60 - 130
		Leachable Total PCB	2012/11/16		91	%	60 - 130
	Method Blank	Leachable Decachlorobiphenyl	2012/11/16		110	%	60 - 130
		Leachable Total PCB	2012/11/16	ND, RDL=3		ug/L	
3037245 JL2	RPD [PO2412-02]	Moisture	2012/11/15	16.0		%	20
3037335 HES	RPD [PO2452-03]	Moisture	2012/11/16	1.2		%	50
3037667 VTH	RPD	Moisture	2012/11/15	4.5		%	20
3037809 VTH	RPD	Moisture	2012/11/15	9.1		%	20
3037905 BMO	Matrix Spike						
	[PO2450-01]	Free Cyanide	2012/11/16		97	%	75 - 125
	Spiked Blank	Free Cyanide	2012/11/16		99	%	80 - 120
	Method Blank	Free Cyanide	2012/11/16	ND, RDL=0.01		ug/g	
	RPD [PO2450-01]	Free Cyanide	2012/11/16	NC		%	35
3038041 SAC	Matrix Spike						
	[PO2450-01]	Chromium (VI)	2012/11/16		88	%	75 - 125
	QC Standard	Chromium (VI)	2012/11/16		95	%	75 - 125
	Spiked Blank	Chromium (VI)	2012/11/16		92	%	80 - 120
	Method Blank	Chromium (VI)	2012/11/16	ND, RDL=0.2		ug/g	
	RPD [PO2450-01]	Chromium (VI)	2012/11/16	NC		%	35
3038287 AFZ	Spiked Blank	Hot Water Ext. Boron (B)	2012/11/17		98	%	75 - 125
	Method Blank	Hot Water Ext. Boron (B)	2012/11/17	ND, RDL=0.050		ug/g	
3038348 AFZ	Spiked Blank	Hot Water Ext. Boron (B)	2012/11/16		99	%	75 - 125
	Method Blank	Hot Water Ext. Boron (B)	2012/11/16	ND, RDL=0.050		ug/g	
	RPD	Hot Water Ext. Boron (B)	2012/11/16	NC		%	35
3038515 NYS	QC Standard	Conductivity	2012/11/16		106	%	90 - 110
	Method Blank	Conductivity	2012/11/16	ND, RDL=0.002		mS/cm	
	RPD [PO2444-01]	Conductivity	2012/11/16	4.9		%	10
3038559 VIV	Matrix Spike	Acid Extractable Antimony (Sb)	2012/11/16		92	%	75 - 125
		Acid Extractable Arsenic (As)	2012/11/16		94	%	75 - 125
		Acid Extractable Barium (Ba)	2012/11/16		NC (3)	%	75 - 125

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QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3038559 VIV	Matrix Spike	Acid Extractable Beryllium (Be)	2012/11/16		98	%	75 - 125
		Acid Extractable Boron (B)	2012/11/16		94	%	75 - 125
		Acid Extractable Cadmium (Cd)	2012/11/16		95	%	75 - 125
		Acid Extractable Chromium (Cr)	2012/11/16		94	%	75 - 125
		Acid Extractable Cobalt (Co)	2012/11/16		90	%	75 - 125
		Acid Extractable Copper (Cu)	2012/11/16		NC (3)	%	75 - 125
		Acid Extractable Lead (Pb)	2012/11/16		90	%	75 - 125
		Acid Extractable Molybdenum (Mo)	2012/11/16		93	%	75 - 125
		Acid Extractable Nickel (Ni)	2012/11/16		93	%	75 - 125
		Acid Extractable Selenium (Se)	2012/11/16		95	%	75 - 125
		Acid Extractable Silver (Ag)	2012/11/16		93	%	75 - 125
		Acid Extractable Thallium (Tl)	2012/11/16		86	%	75 - 125
		Acid Extractable Uranium (U)	2012/11/16		94	%	75 - 125
		Acid Extractable Vanadium (V)	2012/11/16		96	%	75 - 125
		Acid Extractable Zinc (Zn)	2012/11/16		NC (3)	%	75 - 125
	Spiked Blank	Acid Extractable Mercury (Hg)	2012/11/16		81	%	75 - 125
		Acid Extractable Antimony (Sb)	2012/11/16		95	%	80 - 120
		Acid Extractable Arsenic (As)	2012/11/16		97	%	80 - 120
		Acid Extractable Barium (Ba)	2012/11/16		103	%	80 - 120
		Acid Extractable Beryllium (Be)	2012/11/16		101	%	80 - 120
		Acid Extractable Boron (B)	2012/11/16		97	%	80 - 120
		Acid Extractable Cadmium (Cd)	2012/11/16		97	%	80 - 120
		Acid Extractable Chromium (Cr)	2012/11/16		96	%	80 - 120
		Acid Extractable Cobalt (Co)	2012/11/16		95	%	80 - 120
		Acid Extractable Copper (Cu)	2012/11/16		94	%	80 - 120
		Acid Extractable Lead (Pb)	2012/11/16		96	%	80 - 120
		Acid Extractable Molybdenum (Mo)	2012/11/16		95	%	80 - 120
		Acid Extractable Nickel (Ni)	2012/11/16		101	%	80 - 120
		Acid Extractable Selenium (Se)	2012/11/16		100	%	80 - 120
		Acid Extractable Silver (Ag)	2012/11/16		96	%	80 - 120
		Acid Extractable Thallium (Tl)	2012/11/16		91	%	80 - 120
		Acid Extractable Uranium (U)	2012/11/16		103	%	80 - 120
		Acid Extractable Vanadium (V)	2012/11/16		96	%	80 - 120
		Acid Extractable Zinc (Zn)	2012/11/16		101	%	80 - 120
	Method Blank	Acid Extractable Mercury (Hg)	2012/11/16		94	%	80 - 120
		Acid Extractable Antimony (Sb)	2012/11/16	ND, RDL=0.20		ug/g	
		Acid Extractable Arsenic (As)	2012/11/16	ND, RDL=1.0		ug/g	
		Acid Extractable Barium (Ba)	2012/11/16	ND, RDL=0.50		ug/g	
		Acid Extractable Beryllium (Be)	2012/11/16	ND, RDL=0.20		ug/g	
		Acid Extractable Boron (B)	2012/11/16	ND, RDL=5.0		ug/g	
		Acid Extractable Cadmium (Cd)	2012/11/16	ND, RDL=0.10		ug/g	
		Acid Extractable Chromium (Cr)	2012/11/16	ND, RDL=1.0		ug/g	
		Acid Extractable Cobalt (Co)	2012/11/16	ND, RDL=0.10		ug/g	
		Acid Extractable Copper (Cu)	2012/11/16	ND, RDL=0.50		ug/g	
		Acid Extractable Lead (Pb)	2012/11/16	ND, RDL=1.0		ug/g	
		Acid Extractable Molybdenum (Mo)	2012/11/16	ND, RDL=0.50		ug/g	
		Acid Extractable Nickel (Ni)	2012/11/16	ND, RDL=0.50		ug/g	
		Acid Extractable Selenium (Se)	2012/11/16	ND, RDL=0.50		ug/g	
		Acid Extractable Silver (Ag)	2012/11/16	ND, RDL=0.20		ug/g	
		Acid Extractable Thallium (Tl)	2012/11/16	ND, RDL=0.050		ug/g	
		Acid Extractable Uranium (U)	2012/11/16	ND, RDL=0.050		ug/g	
		Acid Extractable Vanadium (V)	2012/11/16	ND, RDL=5.0		ug/g	
		Acid Extractable Zinc (Zn)	2012/11/16	ND, RDL=5.0		ug/g	
	RPD	Acid Extractable Mercury (Hg)	2012/11/16	ND, RDL=0.050		ug/g	
		Acid Extractable Antimony (Sb)	2012/11/16	NC		%	30

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3038559 VIV	RPD	Acid Extractable Arsenic (As)	2012/11/16	NC		%	30
		Acid Extractable Barium (Ba)	2012/11/16	6.7		%	30
		Acid Extractable Beryllium (Be)	2012/11/16	NC		%	30
		Acid Extractable Boron (B)	2012/11/16	NC		%	30
		Acid Extractable Cadmium (Cd)	2012/11/16	NC		%	30
		Acid Extractable Chromium (Cr)	2012/11/16	2.9		%	30
		Acid Extractable Cobalt (Co)	2012/11/16	7.9		%	30
		Acid Extractable Copper (Cu)	2012/11/16	8.0		%	30
		Acid Extractable Lead (Pb)	2012/11/16	3.3		%	30
		Acid Extractable Molybdenum (Mo)	2012/11/16	NC		%	30
		Acid Extractable Nickel (Ni)	2012/11/16	5.2		%	30
		Acid Extractable Selenium (Se)	2012/11/16	NC		%	30
		Acid Extractable Silver (Ag)	2012/11/16	NC		%	30
		Acid Extractable Thallium (Tl)	2012/11/16	NC		%	30
		Acid Extractable Uranium (U)	2012/11/16	0.9		%	30
		Acid Extractable Vanadium (V)	2012/11/16	NC		%	30
		Acid Extractable Zinc (Zn)	2012/11/16	5.7		%	30
3038581 VIV	Matrix Spike [PO2452-01]	Acid Extractable Antimony (Sb)	2012/11/16		92	%	75 - 125
		Acid Extractable Arsenic (As)	2012/11/16		104	%	75 - 125
		Acid Extractable Barium (Ba)	2012/11/16		NC	%	75 - 125
		Acid Extractable Beryllium (Be)	2012/11/16		102	%	75 - 125
		Acid Extractable Boron (B)	2012/11/16		109	%	75 - 125
		Acid Extractable Cadmium (Cd)	2012/11/16		102	%	75 - 125
		Acid Extractable Chromium (Cr)	2012/11/16		106	%	75 - 125
		Acid Extractable Cobalt (Co)	2012/11/16		100	%	75 - 125
		Acid Extractable Copper (Cu)	2012/11/16		NC	%	75 - 125
		Acid Extractable Lead (Pb)	2012/11/16		NC	%	75 - 125
		Acid Extractable Molybdenum (Mo)	2012/11/16		98	%	75 - 125
		Acid Extractable Nickel (Ni)	2012/11/16		104	%	75 - 125
		Acid Extractable Selenium (Se)	2012/11/16		104	%	75 - 125
		Acid Extractable Silver (Ag)	2012/11/16		102	%	75 - 125
		Acid Extractable Thallium (Tl)	2012/11/16		93	%	75 - 125
		Acid Extractable Uranium (U)	2012/11/16		108	%	75 - 125
		Acid Extractable Vanadium (V)	2012/11/16		104	%	75 - 125
		Acid Extractable Zinc (Zn)	2012/11/16		NC	%	75 - 125
	Spiked Blank	Acid Extractable Mercury (Hg)	2012/11/16		111	%	75 - 125
		Acid Extractable Antimony (Sb)	2012/11/16		97	%	80 - 120
		Acid Extractable Arsenic (As)	2012/11/16		101	%	80 - 120
		Acid Extractable Barium (Ba)	2012/11/16		101	%	80 - 120
		Acid Extractable Beryllium (Be)	2012/11/16		99	%	80 - 120
		Acid Extractable Boron (B)	2012/11/16		101	%	80 - 120
		Acid Extractable Cadmium (Cd)	2012/11/16		100	%	80 - 120
		Acid Extractable Chromium (Cr)	2012/11/16		98	%	80 - 120
		Acid Extractable Cobalt (Co)	2012/11/16		98	%	80 - 120
		Acid Extractable Copper (Cu)	2012/11/16		97	%	80 - 120
		Acid Extractable Lead (Pb)	2012/11/16		99	%	80 - 120
		Acid Extractable Molybdenum (Mo)	2012/11/16		95	%	80 - 120
		Acid Extractable Nickel (Ni)	2012/11/16		100	%	80 - 120
		Acid Extractable Selenium (Se)	2012/11/16		99	%	80 - 120
		Acid Extractable Silver (Ag)	2012/11/16		101	%	80 - 120
		Acid Extractable Thallium (Tl)	2012/11/16		89	%	80 - 120
		Acid Extractable Uranium (U)	2012/11/16		104	%	80 - 120
		Acid Extractable Vanadium (V)	2012/11/16		98	%	80 - 120
		Acid Extractable Zinc (Zn)	2012/11/16		100	%	80 - 120

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Client Project #: 1412815  
P.O. #:  
Site Location: 770 SOMERSET ST. W

### Quality Assurance Report (Continued)

Maxxam Job Number: TB2H6839

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3038581 VIV	Spiked Blank	Acid Extractable Mercury (Hg)	2012/11/16		105	%	80 - 120
	Method Blank	Acid Extractable Antimony (Sb)	2012/11/16	ND, RDL=0.20		ug/g	
		Acid Extractable Arsenic (As)	2012/11/16	ND, RDL=1.0		ug/g	
		Acid Extractable Barium (Ba)	2012/11/16	ND, RDL=0.50		ug/g	
		Acid Extractable Beryllium (Be)	2012/11/16	ND, RDL=0.20		ug/g	
		Acid Extractable Boron (B)	2012/11/16	ND, RDL=5.0		ug/g	
		Acid Extractable Cadmium (Cd)	2012/11/16	ND, RDL=0.10		ug/g	
		Acid Extractable Chromium (Cr)	2012/11/16	ND, RDL=1.0		ug/g	
		Acid Extractable Cobalt (Co)	2012/11/16	ND, RDL=0.10		ug/g	
		Acid Extractable Copper (Cu)	2012/11/16	ND, RDL=0.50		ug/g	
		Acid Extractable Lead (Pb)	2012/11/16	ND, RDL=1.0		ug/g	
		Acid Extractable Molybdenum (Mo)	2012/11/16	ND, RDL=0.50		ug/g	
		Acid Extractable Nickel (Ni)	2012/11/16	ND, RDL=0.50		ug/g	
		Acid Extractable Selenium (Se)	2012/11/16	ND, RDL=0.50		ug/g	
		Acid Extractable Silver (Ag)	2012/11/16	ND, RDL=0.20		ug/g	
		Acid Extractable Thallium (Tl)	2012/11/16	ND, RDL=0.050		ug/g	
		Acid Extractable Uranium (U)	2012/11/16	ND, RDL=0.050		ug/g	
		Acid Extractable Vanadium (V)	2012/11/16	ND, RDL=5.0		ug/g	
		Acid Extractable Zinc (Zn)	2012/11/16	ND, RDL=5.0		ug/g	
	RPD [PO2452-01]	Acid Extractable Mercury (Hg)	2012/11/16	ND, RDL=0.050		ug/g	
		Acid Extractable Antimony (Sb)	2012/11/16	NC		%	30
		Acid Extractable Arsenic (As)	2012/11/16	NC		%	30
		Acid Extractable Barium (Ba)	2012/11/16	0.05		%	30
		Acid Extractable Beryllium (Be)	2012/11/16	NC		%	30
		Acid Extractable Boron (B)	2012/11/16	NC		%	30
		Acid Extractable Cadmium (Cd)	2012/11/16	NC		%	30
		Acid Extractable Chromium (Cr)	2012/11/16	5.2		%	30
		Acid Extractable Cobalt (Co)	2012/11/16	4.4		%	30
		Acid Extractable Copper (Cu)	2012/11/16	4.2		%	30
		Acid Extractable Lead (Pb)	2012/11/16	5.1		%	30
		Acid Extractable Molybdenum (Mo)	2012/11/16	NC		%	30
		Acid Extractable Nickel (Ni)	2012/11/16	2.8		%	30
		Acid Extractable Selenium (Se)	2012/11/16	NC		%	30
		Acid Extractable Silver (Ag)	2012/11/16	NC		%	30
		Acid Extractable Thallium (Tl)	2012/11/16	NC		%	30
		Acid Extractable Uranium (U)	2012/11/16	10		%	30
		Acid Extractable Vanadium (V)	2012/11/16	NC		%	30
		Acid Extractable Zinc (Zn)	2012/11/16	3.4		%	30
		Acid Extractable Mercury (Hg)	2012/11/16	NC		%	30
3038695 NYS	QC Standard	Conductivity	2012/11/16		105	%	90 - 110
	Method Blank	Conductivity	2012/11/16	ND, RDL=0.002		mS/cm	
	RPD	Conductivity	2012/11/16	1.8		%	10
3038714 AFZ	Spiked Blank	Hot Water Ext. Boron (B)	2012/11/16		92	%	75 - 125
	Method Blank	Hot Water Ext. Boron (B)	2012/11/16	ND, RDL=0.050		ug/g	
3038770 VIV	Matrix Spike	Acid Extractable Antimony (Sb)	2012/11/16		88	%	75 - 125
		Acid Extractable Arsenic (As)	2012/11/16		95	%	75 - 125
		Acid Extractable Barium (Ba)	2012/11/16		NC	%	75 - 125
		Acid Extractable Beryllium (Be)	2012/11/16		98	%	75 - 125
		Acid Extractable Boron (B)	2012/11/16		91	%	75 - 125
		Acid Extractable Cadmium (Cd)	2012/11/16		100	%	75 - 125
		Acid Extractable Chromium (Cr)	2012/11/16		NC	%	75 - 125
		Acid Extractable Cobalt (Co)	2012/11/16		92	%	75 - 125
		Acid Extractable Copper (Cu)	2012/11/16		91	%	75 - 125
		Acid Extractable Lead (Pb)	2012/11/16		94	%	75 - 125
		Acid Extractable Molybdenum (Mo)	2012/11/16		94	%	75 - 125



Ecoplans Limited  
Attention: Peter Van Driel  
Client Project #: 1412815  
P.O. #:  
Site Location: 770 SOMERSET ST. W

### Quality Assurance Report (Continued)

Maxxam Job Number: TB2H6839

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3038770 VIV	Matrix Spike	Acid Extractable Nickel (Ni)	2012/11/16		96	%	75 - 125
		Acid Extractable Selenium (Se)	2012/11/16		98	%	75 - 125
		Acid Extractable Silver (Ag)	2012/11/16		97	%	75 - 125
		Acid Extractable Thallium (Tl)	2012/11/16		89	%	75 - 125
		Acid Extractable Uranium (U)	2012/11/16		99	%	75 - 125
		Acid Extractable Vanadium (V)	2012/11/16		NC	%	75 - 125
	Spiked Blank	Acid Extractable Zinc (Zn)	2012/11/16		NC	%	75 - 125
		Acid Extractable Mercury (Hg)	2012/11/16		94	%	75 - 125
		Acid Extractable Antimony (Sb)	2012/11/16		93	%	80 - 120
		Acid Extractable Arsenic (As)	2012/11/16		97	%	80 - 120
		Acid Extractable Barium (Ba)	2012/11/16		103	%	80 - 120
		Acid Extractable Beryllium (Be)	2012/11/16		100	%	80 - 120
		Acid Extractable Boron (B)	2012/11/16		96	%	80 - 120
		Acid Extractable Cadmium (Cd)	2012/11/16		99	%	80 - 120
		Acid Extractable Chromium (Cr)	2012/11/16		96	%	80 - 120
		Acid Extractable Cobalt (Co)	2012/11/16		95	%	80 - 120
		Acid Extractable Copper (Cu)	2012/11/16		94	%	80 - 120
		Acid Extractable Lead (Pb)	2012/11/16		97	%	80 - 120
		Acid Extractable Molybdenum (Mo)	2012/11/16		95	%	80 - 120
		Acid Extractable Nickel (Ni)	2012/11/16		99	%	80 - 120
		Acid Extractable Selenium (Se)	2012/11/16		99	%	80 - 120
		Acid Extractable Silver (Ag)	2012/11/16		97	%	80 - 120
		Acid Extractable Thallium (Tl)	2012/11/16		88	%	80 - 120
		Acid Extractable Uranium (U)	2012/11/16		102	%	80 - 120
		Acid Extractable Vanadium (V)	2012/11/16		96	%	80 - 120
		Acid Extractable Zinc (Zn)	2012/11/16		99	%	80 - 120
	Method Blank	Acid Extractable Mercury (Hg)	2012/11/16		95	%	80 - 120
		Acid Extractable Antimony (Sb)	2012/11/16	ND, RDL=0.20		ug/g	
		Acid Extractable Arsenic (As)	2012/11/16	ND, RDL=1.0		ug/g	
		Acid Extractable Barium (Ba)	2012/11/16	ND, RDL=0.50		ug/g	
		Acid Extractable Beryllium (Be)	2012/11/16	ND, RDL=0.20		ug/g	
		Acid Extractable Boron (B)	2012/11/16	ND, RDL=5.0		ug/g	
		Acid Extractable Cadmium (Cd)	2012/11/16	ND, RDL=0.10		ug/g	
		Acid Extractable Chromium (Cr)	2012/11/16	ND, RDL=1.0		ug/g	
		Acid Extractable Cobalt (Co)	2012/11/16	ND, RDL=0.10		ug/g	
		Acid Extractable Copper (Cu)	2012/11/16	ND, RDL=0.50		ug/g	
		Acid Extractable Lead (Pb)	2012/11/16	ND, RDL=1.0		ug/g	
		Acid Extractable Molybdenum (Mo)	2012/11/16	ND, RDL=0.50		ug/g	
		Acid Extractable Nickel (Ni)	2012/11/16	ND, RDL=0.50		ug/g	
		Acid Extractable Selenium (Se)	2012/11/16	ND, RDL=0.50		ug/g	
		Acid Extractable Silver (Ag)	2012/11/16	ND, RDL=0.20		ug/g	
		Acid Extractable Thallium (Tl)	2012/11/16	ND, RDL=0.050		ug/g	
		Acid Extractable Uranium (U)	2012/11/16	ND, RDL=0.050		ug/g	
		Acid Extractable Vanadium (V)	2012/11/16	ND, RDL=5.0		ug/g	
	RPD	Acid Extractable Zinc (Zn)	2012/11/16	ND, RDL=5.0		ug/g	
		Acid Extractable Mercury (Hg)	2012/11/16	ND, RDL=0.050		ug/g	
		Acid Extractable Antimony (Sb)	2012/11/16	NC		%	30
		Acid Extractable Arsenic (As)	2012/11/16	NC		%	30
		Acid Extractable Barium (Ba)	2012/11/16	7.5		%	30
		Acid Extractable Beryllium (Be)	2012/11/16	NC		%	30
		Acid Extractable Boron (B)	2012/11/16	NC		%	30
		Acid Extractable Cadmium (Cd)	2012/11/16	NC		%	30
		Acid Extractable Chromium (Cr)	2012/11/16	5.1		%	30
		Acid Extractable Cobalt (Co)	2012/11/16	4.1		%	30
		Acid Extractable Copper (Cu)	2012/11/16	6.0		%	30

Ecoplans Limited  
Attention: Peter Van Driel  
Client Project #: 1412815  
P.O. #:  
Site Location: 770 SOMERSET ST. W

### Quality Assurance Report (Continued)

Maxxam Job Number: TB2H6839

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3038770 VIV	RPD	Acid Extractable Lead (Pb)	2012/11/16	4.0		%	30
		Acid Extractable Molybdenum (Mo)	2012/11/16	NC		%	30
		Acid Extractable Nickel (Ni)	2012/11/16	6.0		%	30
		Acid Extractable Selenium (Se)	2012/11/16	NC		%	30
		Acid Extractable Silver (Ag)	2012/11/16	NC		%	30
		Acid Extractable Thallium (Tl)	2012/11/16	NC		%	30
		Acid Extractable Uranium (U)	2012/11/16	4.6		%	30
		Acid Extractable Vanadium (V)	2012/11/16	4.3		%	30
		Acid Extractable Zinc (Zn)	2012/11/16	5.1		%	30
		Acid Extractable Mercury (Hg)	2012/11/16	NC		%	30
3040430 LHR	Spiked Blank	F4G-sg (Grav. Heavy Hydrocarbons)	2012/11/19		104	%	65 - 135
	RPD	F4G-sg (Grav. Heavy Hydrocarbons)	2012/11/19	0.7		%	50
3041344 RUS	Method Blank	F4G-sg (Grav. Heavy Hydrocarbons)	2012/11/19	ND, RDL=100		ug/g	
	Matrix Spike	F4G-sg (Grav. Heavy Hydrocarbons)	2012/11/19		77	%	65 - 135
	Spiked Blank	F4G-sg (Grav. Heavy Hydrocarbons)	2012/11/19		103	%	65 - 135
	Method Blank	F4G-sg (Grav. Heavy Hydrocarbons)	2012/11/19	ND, RDL=100		ug/g	
	RPD	F4G-sg (Grav. Heavy Hydrocarbons)	2012/11/19	NC		%	50

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Leachate Blank: A blank matrix containing all reagents used in the leaching procedure. Used to determine any process contamination.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

( 1 ) The matrix spike recovery was below the lower control limit. This may be due in part to the reducing environment of the sample.

( 2 ) The recovery in the matrix spike was not calculated (NC). Because of the high concentration of this analyte in the parent sample, the relative difference between the spiked and unspiked concentrations is not sufficiently significant to permit a reliable recovery calculation.

( 3 ) The recovery in the matrix spike was not calculated (NC). Spiked concentration was less than 2x that native to the sample.



## Validation Signature Page

**Maxxam Job #: B2H6839**

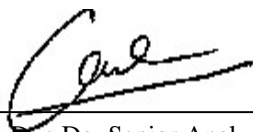
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The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

---

Ewa Pranjic, M.Sc., C.Chem, Scientific Specialist



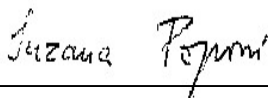
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Cuong Duc Do, Senior Analyst, Semi-Volatiles



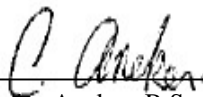
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Paul Rubinato, Analyst, Maxxam Analytics



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Suzana Popovic, Supervisor, Hydrocarbons



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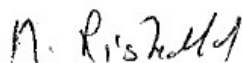
Charles Ancker, B.Sc., M.Sc., C.Chem, Senior Analyst

## Validation Signature Page

Maxxam Job #: B2H6839

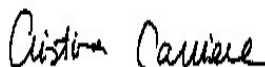
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The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



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Medhat Riskallah, Manager, Hydrocarbon Department





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Cristina Carriere, Scientific Services

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Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

<b>INVOICE INFORMATION:</b>		<b>REPORT INFORMATION (if differs from invoice):</b>		<b>PROJECT INFORMATION:</b>		<b>Laboratory Use Only:</b>	
Company Name:	#47490 Ecoplans Limited	Company Name:		Quotation #:	A79521	MAXXAM JOB #:	BOTTLE ORDER #:
Contact Name:	Peter Van Driel	Contact Name:	Peter Van Driel	P.O. #:			
Address:	72 Victoria St S Suite 100 Kitchener ON N2G 4Y9	Address:		Project #:	1412815	CHAIN OF CUSTODY #:	PROJECT MANAGER:
Phone:	(519)741-8850 x2280 Fax: (519)741-8884	Phone:	(519)741-8850 x2280 Fax:	Project Name:	710-5000000 S.W		Jolanta Goralczyk
Email:	pvandriel@ecoplans.com	Email:	pvandriel@ecoplans.com	Site #:	Ottawa		
				Sampled By:	Peter van Driel		


<b>Regulation 153 (2011)</b>		<b>Other Regulations</b>		<b>SPECIAL INSTRUCTIONS</b>		<b>ANALYSIS REQUESTED (Please be specific)</b>										<b>TURNAROUND TIME (TAT) REQUIRED:</b>			
<input type="checkbox"/> Table 1	<input type="checkbox"/> Res/Park	<input type="checkbox"/> Medium/Fine	<input type="checkbox"/> CCME	<input type="checkbox"/> Sanitary Sewer Bylaw		<input type="checkbox"/> Regulated Drinking Water ? (Y/N) <input type="checkbox"/> Metals Field Filtered ? (Y/N) <input type="checkbox"/> Soil: O'Reg 153 Metals & Inorgs <input type="checkbox"/> Soil: O'Reg 153 PAHs <input type="checkbox"/> Soil: O'Reg 153 VOCs (RSC) <input type="checkbox"/> Soil: O'Reg 153 PHCs <input type="checkbox"/> Soil: O'Reg 153 PCBs <input type="checkbox"/> O'Reg 558 TCLP Inorganics Package <input type="checkbox"/> O'Reg 558 TCLP PCBs <input type="checkbox"/> TCLP Petroleum Hydrocarbons <input type="checkbox"/> Water: O'Reg 153 Metals & Inorganics <input type="checkbox"/> Water: O'Reg 153 PHCs										<b>PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS</b> Regular (Standard) TAT: (will be applied if Rush TAT is not specified): Standard TAT = 5-7 Working days for most tests. Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details. Job Specific Rush TAT (if applies to entire submission): Date Required: _____ Time Required: _____ Rush Confirmation Number: _____ (call lab for #)			
<input type="checkbox"/> Table 2	<input type="checkbox"/> Ind/Comm	<input type="checkbox"/> Coarse	<input type="checkbox"/> Reg. 558	<input type="checkbox"/> Storm Sewer Bylaw															
<input type="checkbox"/> Table 3	<input type="checkbox"/> Agr/Other		<input type="checkbox"/> MISA	<input type="checkbox"/> Municipality															
<input type="checkbox"/> Table _____		<input type="checkbox"/> For RBC	<input type="checkbox"/> PWQO	<input type="checkbox"/> Other															
Include Criteria on Certificate of Analysis (Y/N)? _____																			
Note: For MOE regulated drinking water samples - please use the Drinking Water Chain of Custody Form																			
SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM																			

Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Regulated Drinking Water ? (Y/N)	Metals Field Filtered ? (Y/N)	Soil: O'Reg 153 Metals & Inorgs	Soil: O'Reg 153 PAHs	Soil: O'Reg 153 VOCs (RSC)	Soil: O'Reg 153 PHCs	Soil: O'Reg 153 PCBs	O'Reg 558 TCLP Inorganics Package	O'Reg 558 TCLP PCBs	TCLP Petroleum Hydrocarbons	Water: O'Reg 153 Metals & Inorganics	Water: O'Reg 153 PHCs	# of Bottles	Comments
1 BH5 SS1		9 Nov-12		S			✓											
2 Dup 2		9 Nov-12		S			✓		✓	✓								
3 BH5 SS2		9 Nov-12		S				✓										
4 BH5 SS-3		9 Nov-12		S					✓	✓								
5 BH6 SS-2		9 Nov-12		S					✓	✓								
6 BH6 SS-3		9 Nov-12		S					✓	✓								
7 BH7 SS-2		8 Nov-12		S			✓											
8 BH7 SS-3		8 Nov-12		S					✓	✓	✓							
9 BH8 SS-2		8 Nov-12		S			✓		✓	✓								
10 BH8 SS-3		8 Nov-12		S					✓	✓	✓							

<b>*RELINQUISHED BY: (Signature/Print)</b>		<b>Date: (YY/MM/DD)</b>	<b>Time:</b>	<b>RECEIVED BY: (Signature/Print)</b>		<b>Date: (YY/MM/DD)</b>	<b>Time:</b>	<b># Jars Used and Not Submitted</b>	<b>Laboratory Use Only</b>											
Peter van Driel		12/11/09	5:30 PM	Josh Freeman		2012/11/09	17:30		Time Sensitive	Temperature (°C) on Receipt	<table border="1"> <tr> <td>Custody Seal</td> <td>Yes</td> <td>No</td> </tr> <tr> <td>Present</td> <td></td> <td>✓</td> </tr> <tr> <td>Intact</td> <td></td> <td>✓</td> </tr> </table>	Custody Seal	Yes	No	Present		✓	Intact		✓
Custody Seal	Yes	No																		
Present		✓																		
Intact		✓																		

\* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

Maxxam Analytics International Corporation c/o Maxxam Analytics

9-Nov-12 17:30  
Jolanta Goralczyk  
  
B2H6839  
JOF OTT-002

REC'D IN OTTAWA

5/7/8  
7/8/9  
8/8/9 8/7/7

White: Maxxam Yellow: Client

<b>INVOICE INFORMATION:</b>		<b>REPORT INFORMATION (if differs from invoice):</b>		<b>PROJECT INFORMATION:</b>		<b>Laboratory Use Only:</b>	
Company Name:	#47490 Ecoplans Limited	Company Name:	Peter Van Driel	Quotation #:	A79521	MAXXAM JOB #:	BOTTLE ORDER #:
Contact Name:	Peter Van Driel	Contact Name:	Peter Van Driel	P.O. #:			
Address:	72 Victoria St S Suite 100 Kitchener ON N2G 4Y9	Address:		Project #:	1412815		
Phone:	(519)741-8850 x2280 Fax: (519)741-8884	Phone:	(519)741-8850 x2280 Fax:	Project Name:	770 Somerset St. W.	CHAIN OF CUSTODY #:	PROJECT MANAGER:
Email:	pvandriel@ecoplans.com	Email:	pvandriel@ecoplans.com	Site #:	Ottawa		Jolanta Gorskiy
				Sampled By:	Peter van Driel		

<b>Regulation 153 (2011)</b>		<b>Other Regulations</b>		<b>SPECIAL INSTRUCTIONS</b>		<b>ANALYSIS REQUESTED (Please be specific):</b>						<b>TURNAROUND TIME (TAT) REQUIRED:</b>							
<input type="checkbox"/> Table 1	<input type="checkbox"/> Res/Park	<input type="checkbox"/> Medium/Fine	<input type="checkbox"/> CCME	<input type="checkbox"/> Sanitary Sewer Bylaw		Regulated Drinking Water ? (Y/N)	Metals Field Filtered ? (Y/N)	Soil: O'Reg 153 Metals & Inorgs	Soil: O'Reg 153 PAHs	Soil: O'Reg 153 VOCs (RSC)	Soil: O'Reg 153 PHCs	Soil: O'Reg 153 PCBs	O'Reg 558 TCLP Inorganics Package	O'Reg 558 TCLP PCBs	TCLP Petroleum Hydrocarbons	Water: O'Reg 153 Metals & Inorganics	Water: O'Reg 153 PHCs	<b>PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS</b>	
<input type="checkbox"/> Table 2	<input type="checkbox"/> Ind/Comm	<input type="checkbox"/> Coarse	<input type="checkbox"/> Reg. 558	<input type="checkbox"/> Storm Sewer Bylaw														<b>Regular (Standard) TAT:</b>	
<input type="checkbox"/> Table 3	<input type="checkbox"/> Agri/Other		<input type="checkbox"/> MISA	<input type="checkbox"/> Municipality														<b>Job Specific Rush TAT (if applies to entire submission)</b>	
<input type="checkbox"/> Table		<input type="checkbox"/> For RSC	<input type="checkbox"/> PWQO	<input type="checkbox"/> Other														<b>Data Required:</b> _____ <b>Time Required:</b> _____	
Include Criteria on Certificate of Analysis (Y/N)? _____																			
Note: For MOE regulated drinking water samples - please use the Drinking Water Chain of Custody Form																			

SAMPLES MUST BE KEPT COOL ( < 10°C ) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM																	
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Regulated Drinking Water ? (Y/N)	Metals Field Filtered ? (Y/N)	Soil: O'Reg 153 Metals & Inorgs	Soil: O'Reg 153 PAHs	Soil: O'Reg 153 VOCs (RSC)	Soil: O'Reg 153 PHCs	Soil: O'Reg 153 PCBs	O'Reg 558 TCLP Inorganics Package	O'Reg 558 TCLP PCBs	TCLP Petroleum Hydrocarbons	Water: O'Reg 153 Metals & Inorganics	Water: O'Reg 153 PHCs	
1 BH1 SS1		8 Nov-12		S			✓										
2 BH1 SS2				S			✓										
3 BH1 SS3				S			✓		✓	✓							
4 BH2 SS2				S			✓	✓	✓	✓							
5 BH2 SS3				S					✓	✓							
6 BH3 SS1				S			✓										
7 BH3 SS2				S			✓										
8 BH3 SS3				S					✓	✓							
9 Dup 1		8 Nov-12		S			✓		✓	✓	✓						
10 BH4 SS2		9 Nov-12		S			✓		✓	✓							

<b>*RELINQUISHED BY: (Signature/Print)</b>		<b>Date: (YY/MM/DD)</b>	<b>Time:</b>	<b>RECEIVED BY: (Signature/Print)</b>		<b>Date: (YY/MM/DD)</b>	<b>Time:</b>	<b># Jars Used and</b>	<b>Laboratory Use Only</b>		
Peter van Driel		12/11/09	5:30 PM	Josh Freeman		2012/11/09	17:30	Not Submitted	Time Sanitized	Temperature (°C) on Receipt	Custody Seal
										5/7/8	Yes
										7/8/9	No
										8/8/9	Yes
										8/7/7	No

\* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

REC'D IN OTTAWA

Your Project #: 1412815  
Site Location: 1770 SOMERSET ST. W., OTTAWA  
Your C.O.C. #: 38081805, 380818-05-02

**Attention: Peter Van Driel**

Ecoplans Limited  
72 Victoria St S  
Suite 100  
Kitchener, ON  
N2G 4Y9

**Report Date: 2012/11/27**

**CERTIFICATE OF ANALYSIS**

**MAXXAM JOB #: B2I1463**

**Received: 2012/11/19, 08:00**

Sample Matrix: Water  
# Samples Received: 6

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
1,3-Dichloropropene Sum	6	N/A	2012/11/23	CAM SOP-00226	EPA 8260
Chloride by Automated Colourimetry	5	N/A	2012/11/21	CAM SOP-00463	EPA 325.2
Chromium (VI) in Water	3	N/A	2012/11/21	CAM SOP-00436	EPA 7199
Chromium (VI) in Water	1	N/A	2012/11/26	CAM SOP-00436	EPA 7199
Free (WAD) Cyanide	2	N/A	2012/11/21	CAM SOP-00457	Ontario MOE CN-E3015
Free (WAD) Cyanide	3	N/A	2012/11/22	CAM SOP-00457	Ontario MOE CN-E3015
Petroleum Hydro. CCME F1 & BTEX in Water	5	N/A	2012/11/23	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Water	5	2012/11/22	2012/11/23	CAM SOP-00316	CCME Hydrocarbons
Mercury	3	2012/11/21	2012/11/21	CAM SOP-00453	SW-846 7470A
Lab Filtered Metals by ICPMS	1	2012/11/21	2012/11/21	CAM SOP-00447	EPA 6020
Dissolved Metals by ICPMS	4	N/A	2012/11/26	CAM SOP-00447	EPA 6020
Polychlorinated Biphenyl in Water	1	2012/11/20	2012/11/21	CAM SOP-00309	SW846 8082
Volatile Organic Compounds in Water	6	N/A	2012/11/23	CAM SOP 00226	EPA 8260 modified

\* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

**Encryption Key**

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Jolanta Goralczyk, Project Manager  
Email: JGoralczyk@maxxam.ca  
Phone# (905) 817-5700

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Total cover pages: 1

Maxxam Job #: B2I1463  
Report Date: 2012/11/27

Ecoplans Limited  
Client Project #: 1412815  
Site Location: 1770 SOMERSET ST. W., OTTAWA

## RESULTS OF ANALYSES OF WATER

Maxxam ID		PQ7269			PQ7270			PQ7271		
Sampling Date		2012/11/16 15:00			2012/11/17 10:00			2012/11/17 10:00		
COC Number		380818-05-02			380818-05-02			380818-05-02		
	<b>Units</b>	<b>MW-1</b>	<b>RDL</b>	<b>QC Batch</b>	<b>MW-2</b>	<b>RDL</b>	<b>QC Batch</b>	<b>MW-4</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Inorganics</b>										
Free Cyanide	ug/L	10	2	3043130	10	2	3044855	8	2	3043130
Dissolved Chloride (Cl)	mg/L	7900	100	3043962	2600	30	3043962	4900	50	3043962

RDL = Reportable Detection Limit  
QC Batch = Quality Control Batch

Maxxam ID		PQ7272		PQ7273		
Sampling Date		2012/11/16 12:00		2012/11/16 18:00		
COC Number		380818-05-02		380818-05-02		
	<b>Units</b>	<b>MW-5</b>	<b>RDL</b>	<b>DUP</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Inorganics</b>						
Free Cyanide	ug/L	ND	2	8	2	3044855
Dissolved Chloride (Cl)	mg/L	4600	50	6800	80	3043962

ND = Not detected  
RDL = Reportable Detection Limit  
QC Batch = Quality Control Batch

Maxxam Job #: B2I1463  
Report Date: 2012/11/27

Ecoplans Limited  
Client Project #: 1412815  
Site Location: 1770 SOMERSET ST. W., OTTAWA

### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		PQ7269			PQ7270			PQ7271		
Sampling Date		2012/11/16 15:00			2012/11/17 10:00			2012/11/17 10:00		
COC Number		380818-05-02			380818-05-02			380818-05-02		
	<b>Units</b>	<b>MW-1</b>	<b>RDL</b>	<b>QC Batch</b>	<b>MW-2</b>	<b>RDL</b>	<b>QC Batch</b>	<b>MW-4</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Metals</b>										
Chromium (VI)	ug/L	ND	5.0	3043754	ND	5.0	3043354		5.0	
Mercury (Hg)	ug/L	ND	0.1	3043358		0.1			0.1	
Dissolved Antimony (Sb)	ug/L	ND	5.0	3046868	ND	2.5	3046868	ND	2.5	3043712
Dissolved Arsenic (As)	ug/L	ND	10	3046868	ND	5.0	3046868	ND	10	3043712
Dissolved Barium (Ba)	ug/L	230	20	3046868	88	10	3046868	320	10	3043712
Dissolved Beryllium (Be)	ug/L	ND	5.0	3046868	ND	2.5	3046868	ND	2.5	3043712
Dissolved Boron (B)	ug/L	ND	100	3046868	150	50	3046868	160	50	3043712
Dissolved Cadmium (Cd)	ug/L	ND	1.0	3046868	ND	0.50	3046868	ND	0.50	3043712
Dissolved Chromium (Cr)	ug/L	ND	50	3046868	ND	25	3046868	ND	25	3043712
Dissolved Cobalt (Co)	ug/L	7.4	5.0	3046868	ND	2.5	3046868	ND	2.5	3043712
Dissolved Copper (Cu)	ug/L	ND	10	3046868	ND	5.0	3046868	ND	5.0	3043712
Dissolved Lead (Pb)	ug/L	ND	5.0	3046868	ND	2.5	3046868	ND	2.5	3043712
Dissolved Molybdenum (Mo)	ug/L	ND	5.0	3046868	5.6	2.5	3046868	6.9	2.5	3043712
Dissolved Nickel (Ni)	ug/L	10	10	3046868	ND	5.0	3046868	5.9	5.0	3043712
Dissolved Selenium (Se)	ug/L	ND	20	3046868	ND	10	3046868	ND	10	3043712
Dissolved Silver (Ag)	ug/L	1.2	1.0	3046868	ND	0.50	3046868	ND	0.50	3043712
Dissolved Sodium (Na)	ug/L	4000000	1000	3046868	2100000	500	3046868	3200000	2500	3043712
Dissolved Thallium (Tl)	ug/L	ND	0.50	3046868	ND	0.25	3046868	ND	0.25	3043712
Dissolved Uranium (U)	ug/L	3.2	1.0	3046868	6.4	0.50	3046868	5.2	0.50	3043712
Dissolved Vanadium (V)	ug/L	8.8	5.0	3046868	5.7	2.5	3046868	ND	5.0	3043712
Dissolved Zinc (Zn)	ug/L	ND	50	3046868	ND	25	3046868	ND	25	3043712

ND = Not detected  
RDL = Reportable Detection Limit  
QC Batch = Quality Control Batch



Maxxam Job #: B2I1463  
Report Date: 2012/11/27

Ecoplans Limited  
Client Project #: 1412815  
Site Location: 1770 SOMERSET ST. W., OTTAWA

### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		PQ7272		PQ7273		
Sampling Date		2012/11/16 12:00		2012/11/16 18:00		
COC Number		380818-05-02		380818-05-02		
	<b>Units</b>	<b>MW-5</b>	<b>RDL</b>	<b>DUP</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Metals</b>						
Chromium (VI)	ug/L	ND	5.0	ND	5.0	3043754
Mercury (Hg)	ug/L	ND	0.1	ND	0.1	3043358
Dissolved Antimony (Sb)	ug/L	ND	2.5	ND	5.0	3046868
Dissolved Arsenic (As)	ug/L	ND	10	ND	10	3046868
Dissolved Barium (Ba)	ug/L	380	10	280	20	3046868
Dissolved Beryllium (Be)	ug/L	ND	2.5	ND	5.0	3046868
Dissolved Boron (B)	ug/L	180	50	120	100	3046868
Dissolved Cadmium (Cd)	ug/L	ND	0.50	ND	1.0	3046868
Dissolved Chromium (Cr)	ug/L	ND	25	ND	50	3046868
Dissolved Cobalt (Co)	ug/L	2.9	2.5	6.6	5.0	3046868
Dissolved Copper (Cu)	ug/L	ND	5.0	ND	10	3046868
Dissolved Lead (Pb)	ug/L	ND	2.5	ND	5.0	3046868
Dissolved Molybdenum (Mo)	ug/L	ND	2.5	ND	5.0	3046868
Dissolved Nickel (Ni)	ug/L	9.1	5.0	11	10	3046868
Dissolved Selenium (Se)	ug/L	ND	10	ND	20	3046868
Dissolved Silver (Ag)	ug/L	ND	0.50	1.9	1.0	3046868
Dissolved Sodium (Na)	ug/L	3200000	1000	4600000	1000	3046868
Dissolved Thallium (Tl)	ug/L	ND	0.25	ND	0.50	3046868
Dissolved Uranium (U)	ug/L	2.6	0.50	3.2	1.0	3046868
Dissolved Vanadium (V)	ug/L	5.7	5.0	11	10	3046868
Dissolved Zinc (Zn)	ug/L	ND	25	ND	50	3046868

ND = Not detected  
RDL = Reportable Detection Limit  
QC Batch = Quality Control Batch

Maxxam Job #: B211463  
Report Date: 2012/11/27

Ecoplans Limited  
Client Project #: 1412815  
Site Location: 1770 SOMERSET ST. W., OTTAWA

### VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		PQ7269	PQ7270	PQ7271	PQ7272		
Sampling Date		2012/11/16 15:00	2012/11/17 10:00	2012/11/17 10:00	2012/11/16 12:00		
COC Number		380818-05-02	380818-05-02	380818-05-02	380818-05-02		
	<b>Units</b>	<b>MW-1</b>	<b>MW-2</b>	<b>MW-4</b>	<b>MW-5</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Calculated Parameters</b>							
1,3-Dichloropropene (cis+trans)	ug/L	ND	ND	ND	ND	0.50	3041955
<b>Volatile Organics</b>							
Acetone (2-Propanone)	ug/L	ND	ND	ND	ND	10	3039445
Benzene	ug/L	ND	ND	ND	ND	0.20	3039445
Bromodichloromethane	ug/L	ND	ND	ND	ND	0.50	3039445
Bromoform	ug/L	ND	ND	ND	ND	1.0	3039445
Bromomethane	ug/L	ND	ND	ND	ND	0.50	3039445
Carbon Tetrachloride	ug/L	ND	ND	ND	ND	0.20	3039445
Chlorobenzene	ug/L	ND	ND	ND	ND	0.20	3039445
Chloroform	ug/L	ND	ND	ND	ND	0.20	3039445
Dibromochloromethane	ug/L	ND	ND	ND	ND	0.50	3039445
1,2-Dichlorobenzene	ug/L	ND	ND	ND	ND	0.50	3039445
1,3-Dichlorobenzene	ug/L	ND	ND	ND	ND	0.50	3039445
1,4-Dichlorobenzene	ug/L	ND	ND	ND	ND	0.50	3039445
Dichlorodifluoromethane (FREON 12)	ug/L	ND	ND	ND	ND	1.0	3039445
1,1-Dichloroethane	ug/L	ND	ND	ND	ND	0.20	3039445
1,2-Dichloroethane	ug/L	ND	ND	ND	ND	0.50	3039445
1,1-Dichloroethylene	ug/L	ND	ND	ND	ND	0.20	3039445
cis-1,2-Dichloroethylene	ug/L	ND	ND	ND	ND	0.50	3039445
trans-1,2-Dichloroethylene	ug/L	ND	ND	ND	ND	0.50	3039445
1,2-Dichloropropane	ug/L	ND	ND	ND	ND	0.20	3039445
cis-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	0.30	3039445
trans-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	0.40	3039445
Ethylbenzene	ug/L	ND	ND	ND	1.8	0.20	3039445
Ethylene Dibromide	ug/L	ND	ND	ND	ND	0.20	3039445
Hexane	ug/L	ND	ND	ND	ND	1.0	3039445
Methylene Chloride(Dichloromethane)	ug/L	ND	ND	ND	ND	2.0	3039445
Methyl Isobutyl Ketone	ug/L	ND	ND	ND	ND	5.0	3039445
Methyl Ethyl Ketone (2-Butanone)	ug/L	ND	ND	ND	ND	10	3039445
Methyl t-butyl ether (MTBE)	ug/L	ND	ND	ND	ND	0.50	3039445
Styrene	ug/L	ND	ND	ND	ND	0.50	3039445

ND = Not detected  
RDL = Reportable Detection Limit  
QC Batch = Quality Control Batch

Maxxam Job #: B2I1463  
Report Date: 2012/11/27

Ecoplans Limited  
Client Project #: 1412815  
Site Location: 1770 SOMERSET ST. W., OTTAWA

### VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		PQ7269	PQ7270	PQ7271	PQ7272		
Sampling Date		2012/11/16 15:00	2012/11/17 10:00	2012/11/17 10:00	2012/11/16 12:00		
COC Number		380818-05-02	380818-05-02	380818-05-02	380818-05-02		
	Units	MW-1	MW-2	MW-4	MW-5	RDL	QC Batch
1,1,1,2-Tetrachloroethane	ug/L	ND	ND	ND	ND	0.50	3039445
1,1,2,2-Tetrachloroethane	ug/L	ND	ND	ND	ND	0.50	3039445
Tetrachloroethylene	ug/L	ND	ND	ND	ND	0.20	3039445
Toluene	ug/L	ND	ND	ND	0.23	0.20	3039445
1,1,1-Trichloroethane	ug/L	2.1	ND	2.7	0.31	0.20	3039445
1,1,2-Trichloroethane	ug/L	ND	ND	ND	ND	0.50	3039445
Trichloroethylene	ug/L	ND	ND	ND	ND	0.20	3039445
Vinyl Chloride	ug/L	ND	ND	ND	ND	0.20	3039445
p+m-Xylene	ug/L	ND	ND	ND	2.9	0.20	3039445
o-Xylene	ug/L	ND	ND	ND	3.0	0.20	3039445
Xylene (Total)	ug/L	ND	ND	ND	5.9	0.20	3039445
Trichlorofluoromethane (FREON 11)	ug/L	ND	ND	ND	ND	0.50	3039445
<b>Surrogate Recovery (%)</b>							
4-Bromofluorobenzene	%	101	99	101	100		3039445
D4-1,2-Dichloroethane	%	93	91	92	93		3039445
D8-Toluene	%	102	102	103	102		3039445
ND = Not detected RDL = Reportable Detection Limit QC Batch = Quality Control Batch							

Maxxam Job #: B211463  
Report Date: 2012/11/27

Ecoplans Limited  
Client Project #: 1412815  
Site Location: 1770 SOMERSET ST. W., OTTAWA

### VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		PQ7273	PQ7484		
Sampling Date		2012/11/16 18:00	2012/11/16		
COC Number		380818-05-02	38081805		
	Units	DUP	TRIP BLANK	RDL	QC Batch

<b>Calculated Parameters</b>					
1,3-Dichloropropene (cis+trans)	ug/L	ND	ND	0.50	3041955
<b>Volatile Organics</b>					
Acetone (2-Propanone)	ug/L	ND	ND	10	3039445
Benzene	ug/L	ND	ND	0.20	3039445
Bromodichloromethane	ug/L	ND	ND	0.50	3039445
Bromoform	ug/L	ND	ND	1.0	3039445
Bromomethane	ug/L	ND	ND	0.50	3039445
Carbon Tetrachloride	ug/L	ND	ND	0.20	3039445
Chlorobenzene	ug/L	ND	ND	0.20	3039445
Chloroform	ug/L	ND	ND	0.20	3039445
Dibromochloromethane	ug/L	ND	ND	0.50	3039445
1,2-Dichlorobenzene	ug/L	ND	ND	0.50	3039445
1,3-Dichlorobenzene	ug/L	ND	ND	0.50	3039445
1,4-Dichlorobenzene	ug/L	ND	ND	0.50	3039445
Dichlorodifluoromethane (FREON 12)	ug/L	ND	ND	1.0	3039445
1,1-Dichloroethane	ug/L	ND	ND	0.20	3039445
1,2-Dichloroethane	ug/L	ND	ND	0.50	3039445
1,1-Dichloroethylene	ug/L	ND	ND	0.20	3039445
cis-1,2-Dichloroethylene	ug/L	ND	ND	0.50	3039445
trans-1,2-Dichloroethylene	ug/L	ND	ND	0.50	3039445
1,2-Dichloropropane	ug/L	ND	ND	0.20	3039445
cis-1,3-Dichloropropene	ug/L	ND	ND	0.30	3039445
trans-1,3-Dichloropropene	ug/L	ND	ND	0.40	3039445
Ethylbenzene	ug/L	ND	ND	0.20	3039445
Ethylene Dibromide	ug/L	ND	ND	0.20	3039445
Hexane	ug/L	ND	ND	1.0	3039445
Methylene Chloride(Dichloromethane)	ug/L	ND	ND	2.0	3039445
Methyl Isobutyl Ketone	ug/L	ND	ND	5.0	3039445
Methyl Ethyl Ketone (2-Butanone)	ug/L	ND	ND	10	3039445
Methyl t-butyl ether (MTBE)	ug/L	ND	ND	0.50	3039445
Styrene	ug/L	ND	ND	0.50	3039445
ND = Not detected RDL = Reportable Detection Limit QC Batch = Quality Control Batch					

Maxxam Job #: B2I1463  
Report Date: 2012/11/27

Ecoplans Limited  
Client Project #: 1412815  
Site Location: 1770 SOMERSET ST. W., OTTAWA

### VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		PQ7273	PQ7484		
Sampling Date		2012/11/16 18:00	2012/11/16		
COC Number		380818-05-02	38081805		
	<b>Units</b>	<b>DUP</b>	<b>TRIP BLANK</b>	<b>RDL</b>	<b>QC Batch</b>
1,1,1,2-Tetrachloroethane	ug/L	ND	ND	0.50	3039445
1,1,2,2-Tetrachloroethane	ug/L	ND	ND	0.50	3039445
Tetrachloroethylene	ug/L	ND	ND	0.20	3039445
Toluene	ug/L	ND	ND	0.20	3039445
1,1,1-Trichloroethane	ug/L	1.9	ND	0.20	3039445
1,1,2-Trichloroethane	ug/L	ND	ND	0.50	3039445
Trichloroethylene	ug/L	ND	ND	0.20	3039445
Vinyl Chloride	ug/L	ND	ND	0.20	3039445
p+m-Xylene	ug/L	ND	ND	0.20	3039445
o-Xylene	ug/L	ND	ND	0.20	3039445
Xylene (Total)	ug/L	ND	ND	0.20	3039445
Trichlorofluoromethane (FREON 11)	ug/L	ND	ND	0.50	3039445
<b>Surrogate Recovery (%)</b>					
4-Bromofluorobenzene	%	99	98		3039445
D4-1,2-Dichloroethane	%	95	89		3039445
D8-Toluene	%	101	103		3039445
ND = Not detected RDL = Reportable Detection Limit QC Batch = Quality Control Batch					

Maxxam Job #: B2I1463  
Report Date: 2012/11/27

Ecoplans Limited  
Client Project #: 1412815  
Site Location: 1770 SOMERSET ST. W., OTTAWA

### PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		PQ7269	PQ7270	PQ7271	PQ7272		
Sampling Date		2012/11/16 15:00	2012/11/17 10:00	2012/11/17 10:00	2012/11/16 12:00		
COC Number		380818-05-02	380818-05-02	380818-05-02	380818-05-02		
	<b>Units</b>	<b>MW-1</b>	<b>MW-2</b>	<b>MW-4</b>	<b>MW-5</b>	<b>RDL</b>	<b>QC Batch</b>

<b>BTEX &amp; F1 Hydrocarbons</b>							
F1 (C6-C10)	ug/L	ND	ND	ND	35	25	3046919
F1 (C6-C10) - BTEX	ug/L	ND	ND	ND	29	25	3046919
<b>F2-F4 Hydrocarbons</b>							
F2 (C10-C16 Hydrocarbons)	ug/L	ND	ND	ND	ND	100	3046022
F3 (C16-C34 Hydrocarbons)	ug/L	ND	ND	ND	ND	100	3046022
F4 (C34-C50 Hydrocarbons)	ug/L	ND	ND	ND	ND	100	3046022
Reached Baseline at C50	ug/L	Yes	Yes	Yes	Yes		3046022
<b>Surrogate Recovery (%)</b>							
1,4-Difluorobenzene	%	98	100	99	97		3046919
4-Bromofluorobenzene	%	100	102	103	100		3046919
D10-Ethylbenzene	%	92	98	93	92		3046919
D4-1,2-Dichloroethane	%	96	97	96	97		3046919
o-Terphenyl	%	109	109	106	108		3046022

ND = Not detected  
RDL = Reportable Detection Limit  
QC Batch = Quality Control Batch

Maxxam Job #: B2I1463  
Report Date: 2012/11/27

Ecoplans Limited  
Client Project #: 1412815  
Site Location: 1770 SOMERSET ST. W., OTTAWA

### PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		PQ7273		
Sampling Date		2012/11/16 18:00		
COC Number		380818-05-02		
	<b>Units</b>	<b>DUP</b>	<b>RDL</b>	<b>QC Batch</b>

<b>BTEX &amp; F1 Hydrocarbons</b>				
F1 (C6-C10)	ug/L	ND	25	3046919
F1 (C6-C10) - BTEX	ug/L	ND	25	3046919
<b>F2-F4 Hydrocarbons</b>				
F2 (C10-C16 Hydrocarbons)	ug/L	ND	100	3046022
F3 (C16-C34 Hydrocarbons)	ug/L	ND	100	3046022
F4 (C34-C50 Hydrocarbons)	ug/L	ND	100	3046022
Reached Baseline at C50	ug/L	Yes		3046022
<b>Surrogate Recovery (%)</b>				
1,4-Difluorobenzene	%	100		3046919
4-Bromofluorobenzene	%	102		3046919
D10-Ethylbenzene	%	96		3046919
D4-1,2-Dichloroethane	%	96		3046919
o-Terphenyl	%	107		3046022
ND = Not detected RDL = Reportable Detection Limit QC Batch = Quality Control Batch				



Maxxam Job #: B2I1463  
Report Date: 2012/11/27

Ecoplans Limited  
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### POLYCHLORINATED BIPHENYLS BY GC-ECD (WATER)

Maxxam ID		PQ7272		
Sampling Date		2012/11/16 12:00		
COC Number		380818-05-02		
	<b>Units</b>	<b>MW-5</b>	<b>RDL</b>	<b>QC Batch</b>

<b>PCBs</b>				
Aroclor 1242	ug/L	ND	0.05	3042577
Aroclor 1248	ug/L	ND	0.05	3042577
Aroclor 1254	ug/L	ND	0.05	3042577
Aroclor 1260	ug/L	ND	0.05	3042577
Total PCB	ug/L	ND	0.05	3042577
<b>Surrogate Recovery (%)</b>				
Decachlorobiphenyl	%	92		3042577

ND = Not detected  
RDL = Reportable Detection Limit  
QC Batch = Quality Control Batch

Maxxam Job #: B2I1463  
Report Date: 2012/11/27

Ecoplans Limited  
Client Project #: 1412815  
Site Location: 1770 SOMERSET ST. W., OTTAWA

#### GENERAL COMMENTS

VOC Trip Blank was received in Maxxam Waterloo and added to this submission.

Sample PQ7269-01: Metal analysis: Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.

Sample PQ7270-01: Metal analysis: Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.

Sample PQ7271-01: Metal analysis: Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.

Sample PQ7272-01: Metal analysis: Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.

F1/BTEX Analysis:

The BTEX results used for the F1-BTEX calculation were obtained from Headspace-GC analysis.

Sample PQ7273-01: Metal analysis: Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.

**Results relate only to the items tested.**

Ecoplans Limited  
Attention: Peter Van Driel  
Client Project #: 1412815  
P.O. #:  
Site Location: 1770 SOMERSET ST. W., OTTAWA

Quality Assurance Report  
Maxxam Job Number: MB2I1463

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3039445 AZ	Matrix Spike	4-Bromofluorobenzene	2012/11/22		100	%	70 - 130
		D4-1,2-Dichloroethane	2012/11/22		99	%	70 - 130
		D8-Toluene	2012/11/22		101	%	70 - 130
		Acetone (2-Propanone)	2012/11/22		77	%	60 - 140
		Benzene	2012/11/22		105	%	70 - 130
		Bromodichloromethane	2012/11/22		103	%	70 - 130
		Bromoform	2012/11/22		101	%	70 - 130
		Bromomethane	2012/11/22		97	%	60 - 140
		Carbon Tetrachloride	2012/11/22		104	%	70 - 130
		Chlorobenzene	2012/11/22		97	%	70 - 130
		Chloroform	2012/11/22		108	%	70 - 130
		Dibromochloromethane	2012/11/22		105	%	70 - 130
		1,2-Dichlorobenzene	2012/11/22		100	%	70 - 130
		1,3-Dichlorobenzene	2012/11/22		103	%	70 - 130
		1,4-Dichlorobenzene	2012/11/22		102	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2012/11/22		88	%	60 - 140
		1,1-Dichloroethane	2012/11/22		88	%	70 - 130
		1,2-Dichloroethane	2012/11/22		100	%	70 - 130
		1,1-Dichloroethylene	2012/11/22		97	%	70 - 130
		cis-1,2-Dichloroethylene	2012/11/22		95	%	70 - 130
		trans-1,2-Dichloroethylene	2012/11/22		100	%	70 - 130
		1,2-Dichloropropane	2012/11/22		99	%	70 - 130
		cis-1,3-Dichloropropene	2012/11/22		97	%	70 - 130
		trans-1,3-Dichloropropene	2012/11/22		97	%	70 - 130
		Ethylbenzene	2012/11/22		98	%	70 - 130
		Ethylene Dibromide	2012/11/22		98	%	70 - 130
		Hexane	2012/11/22		92	%	70 - 130
		Methylene Chloride(Dichloromethane)	2012/11/22		91	%	70 - 130
		Methyl Isobutyl Ketone	2012/11/22		90	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2012/11/22		93	%	60 - 140
		Methyl t-butyl ether (MTBE)	2012/11/22		95	%	70 - 130
		Styrene	2012/11/22		94	%	70 - 130
		1,1,1,2-Tetrachloroethane	2012/11/22		101	%	70 - 130
		1,1,2,2-Tetrachloroethane	2012/11/22		93	%	70 - 130
		Tetrachloroethylene	2012/11/22		103	%	70 - 130
		Toluene	2012/11/22		97	%	70 - 130
		1,1,1-Trichloroethane	2012/11/22		96	%	70 - 130
		1,1,2-Trichloroethane	2012/11/22		99	%	70 - 130
		Trichloroethylene	2012/11/22		101	%	70 - 130
		Vinyl Chloride	2012/11/22		93	%	70 - 130
		p+m-Xylene	2012/11/22		98	%	70 - 130
		o-Xylene	2012/11/22		99	%	70 - 130
	Trichlorofluoromethane (FREON 11)	2012/11/22		101	%	70 - 130	
Spiked Blank	4-Bromofluorobenzene	2012/11/22		99	%	70 - 130	
	D4-1,2-Dichloroethane	2012/11/22		90	%	70 - 130	
	D8-Toluene	2012/11/22		103	%	70 - 130	
	Acetone (2-Propanone)	2012/11/22		67	%	60 - 140	
	Benzene	2012/11/22		105	%	70 - 130	
	Bromodichloromethane	2012/11/22		97	%	70 - 130	
	Bromoform	2012/11/22		91	%	70 - 130	
	Bromomethane	2012/11/22		92	%	60 - 140	
	Carbon Tetrachloride	2012/11/22		103	%	70 - 130	
	Chlorobenzene	2012/11/22		98	%	70 - 130	
	Chloroform	2012/11/22		105	%	70 - 130	
Dibromochloromethane	2012/11/22		98	%	70 - 130		

Ecoplans Limited  
Attention: Peter Van Driel  
Client Project #: 1412815  
P.O. #:  
Site Location: 1770 SOMERSET ST. W., OTTAWA

### Quality Assurance Report (Continued)

Maxxam Job Number: MB2I1463

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3039445 AZ	Spiked Blank	1,2-Dichlorobenzene	2012/11/22		100	%	70 - 130
		1,3-Dichlorobenzene	2012/11/22		107	%	70 - 130
		1,4-Dichlorobenzene	2012/11/22		106	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2012/11/22		85	%	60 - 140
		1,1-Dichloroethane	2012/11/22		86	%	70 - 130
		1,2-Dichloroethane	2012/11/22		92	%	70 - 130
		1,1-Dichloroethylene	2012/11/22		99	%	70 - 130
		cis-1,2-Dichloroethylene	2012/11/22		93	%	70 - 130
		trans-1,2-Dichloroethylene	2012/11/22		100	%	70 - 130
		1,2-Dichloropropane	2012/11/22		96	%	70 - 130
		cis-1,3-Dichloropropene	2012/11/22		87	%	70 - 130
		trans-1,3-Dichloropropene	2012/11/22		86	%	70 - 130
		Ethylbenzene	2012/11/22		105	%	70 - 130
		Ethylene Dibromide	2012/11/22		91	%	70 - 130
		Hexane	2012/11/22		95	%	70 - 130
		Methylene Chloride(Dichloromethane)	2012/11/22		87	%	70 - 130
		Methyl Isobutyl Ketone	2012/11/22		80	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2012/11/22		80	%	60 - 140
		Methyl t-butyl ether (MTBE)	2012/11/22		95	%	70 - 130
		Styrene	2012/11/22		97	%	70 - 130
		1,1,1,2-Tetrachloroethane	2012/11/22		99	%	70 - 130
		1,1,2,2-Tetrachloroethane	2012/11/22		84	%	70 - 130
		Tetrachloroethylene	2012/11/22		104	%	70 - 130
		Toluene	2012/11/22		101	%	70 - 130
		1,1,1-Trichloroethane	2012/11/22		95	%	70 - 130
		1,1,2-Trichloroethane	2012/11/22		93	%	70 - 130
		Trichloroethylene	2012/11/22		102	%	70 - 130
		Vinyl Chloride	2012/11/22		94	%	70 - 130
		p+m-Xylene	2012/11/22		107	%	70 - 130
		o-Xylene	2012/11/22		106	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2012/11/22		100	%	70 - 130
	Method Blank	4-Bromofluorobenzene	2012/11/22		99	%	70 - 130
		D4-1,2-Dichloroethane	2012/11/22		90	%	70 - 130
		D8-Toluene	2012/11/22		103	%	70 - 130
		Acetone (2-Propanone)	2012/11/22	ND, RDL=10		ug/L	
		Benzene	2012/11/22	ND, RDL=0.20		ug/L	
		Bromodichloromethane	2012/11/22	ND, RDL=0.50		ug/L	
		Bromoform	2012/11/22	ND, RDL=1.0		ug/L	
		Bromomethane	2012/11/22	ND, RDL=0.50		ug/L	
		Carbon Tetrachloride	2012/11/22	ND, RDL=0.20		ug/L	
		Chlorobenzene	2012/11/22	ND, RDL=0.20		ug/L	
		Chloroform	2012/11/22	ND, RDL=0.20		ug/L	
		Dibromochloromethane	2012/11/22	ND, RDL=0.50		ug/L	
		1,2-Dichlorobenzene	2012/11/22	ND, RDL=0.50		ug/L	
		1,3-Dichlorobenzene	2012/11/22	ND, RDL=0.50		ug/L	
		1,4-Dichlorobenzene	2012/11/22	ND, RDL=0.50		ug/L	
		Dichlorodifluoromethane (FREON 12)	2012/11/22	ND, RDL=1.0		ug/L	
		1,1-Dichloroethane	2012/11/22	ND, RDL=0.20		ug/L	
		1,2-Dichloroethane	2012/11/22	ND, RDL=0.50		ug/L	
		1,1-Dichloroethylene	2012/11/22	ND, RDL=0.20		ug/L	
		cis-1,2-Dichloroethylene	2012/11/22	ND, RDL=0.50		ug/L	
		trans-1,2-Dichloroethylene	2012/11/22	ND, RDL=0.50		ug/L	
		1,2-Dichloropropane	2012/11/22	ND, RDL=0.20		ug/L	
		cis-1,3-Dichloropropene	2012/11/22	ND, RDL=0.30		ug/L	
		trans-1,3-Dichloropropene	2012/11/22	ND, RDL=0.40		ug/L	

Ecoplans Limited  
Attention: Peter Van Driel  
Client Project #: 1412815  
P.O. #:  
Site Location: 1770 SOMERSET ST. W., OTTAWA

### Quality Assurance Report (Continued)

Maxxam Job Number: MB2I1463

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3039445 AZ	Method Blank	Ethylbenzene	2012/11/22	ND, RDL=0.20		ug/L	
		Ethylene Dibromide	2012/11/22	ND, RDL=0.20		ug/L	
		Hexane	2012/11/22	ND, RDL=1.0		ug/L	
		Methylene Chloride(Dichloromethane)	2012/11/22	ND, RDL=2.0		ug/L	
		Methyl Isobutyl Ketone	2012/11/22	ND, RDL=5.0		ug/L	
		Methyl Ethyl Ketone (2-Butanone)	2012/11/22	ND, RDL=10		ug/L	
		Methyl t-butyl ether (MTBE)	2012/11/22	ND, RDL=0.50		ug/L	
		Styrene	2012/11/22	ND, RDL=0.50		ug/L	
		1,1,1,2-Tetrachloroethane	2012/11/22	ND, RDL=0.50		ug/L	
		1,1,2,2-Tetrachloroethane	2012/11/22	ND, RDL=0.50		ug/L	
		Tetrachloroethylene	2012/11/22	ND, RDL=0.20		ug/L	
		Toluene	2012/11/22	ND, RDL=0.20		ug/L	
		1,1,1-Trichloroethane	2012/11/22	ND, RDL=0.20		ug/L	
		1,1,2-Trichloroethane	2012/11/22	ND, RDL=0.50		ug/L	
		Trichloroethylene	2012/11/22	ND, RDL=0.20		ug/L	
		Vinyl Chloride	2012/11/22	ND, RDL=0.20		ug/L	
		p+m-Xylene	2012/11/22	ND, RDL=0.20		ug/L	
		o-Xylene	2012/11/22	ND, RDL=0.20		ug/L	
		Xylene (Total)	2012/11/22	ND, RDL=0.20		ug/L	
		Trichlorofluoromethane (FREON 11)	2012/11/22	ND, RDL=0.50		ug/L	
	RPD	Acetone (2-Propanone)	2012/11/22	NC		%	30
		Benzene	2012/11/22	NC		%	30
		Bromodichloromethane	2012/11/22	NC		%	30
		Bromoform	2012/11/22	NC		%	30
		Bromomethane	2012/11/22	NC		%	30
		Carbon Tetrachloride	2012/11/22	NC		%	30
		Chlorobenzene	2012/11/22	NC		%	30
		Chloroform	2012/11/22	NC		%	30
		Dibromochloromethane	2012/11/22	NC		%	30
		1,2-Dichlorobenzene	2012/11/22	NC		%	30
		1,3-Dichlorobenzene	2012/11/22	NC		%	30
		1,4-Dichlorobenzene	2012/11/22	NC		%	30
		Dichlorodifluoromethane (FREON 12)	2012/11/22	NC		%	30
		1,1-Dichloroethane	2012/11/22	NC		%	30
		1,2-Dichloroethane	2012/11/22	NC		%	30
		1,1-Dichloroethylene	2012/11/22	NC		%	30
		cis-1,2-Dichloroethylene	2012/11/22	NC		%	30
		trans-1,2-Dichloroethylene	2012/11/22	NC		%	30
		1,2-Dichloropropane	2012/11/22	NC		%	30
		cis-1,3-Dichloropropene	2012/11/22	NC		%	30
		trans-1,3-Dichloropropene	2012/11/22	NC		%	30
		Ethylbenzene	2012/11/22	NC		%	30
		Ethylene Dibromide	2012/11/22	NC		%	30
		Hexane	2012/11/22	NC		%	30
		Methylene Chloride(Dichloromethane)	2012/11/22	NC		%	30
		Methyl Isobutyl Ketone	2012/11/22	NC		%	30
		Methyl Ethyl Ketone (2-Butanone)	2012/11/22	NC		%	30
		Methyl t-butyl ether (MTBE)	2012/11/22	NC		%	30
		Styrene	2012/11/22	NC		%	30
		1,1,1,2-Tetrachloroethane	2012/11/22	NC		%	30
		1,1,2,2-Tetrachloroethane	2012/11/22	NC		%	30
		Tetrachloroethylene	2012/11/22	NC		%	30
		Toluene	2012/11/22	NC		%	30
		1,1,1-Trichloroethane	2012/11/22	NC		%	30
		1,1,2-Trichloroethane	2012/11/22	NC		%	30

Ecoplans Limited  
Attention: Peter Van Driel  
Client Project #: 1412815  
P.O. #:  
Site Location: 1770 SOMERSET ST. W., OTTAWA

### Quality Assurance Report (Continued)

Maxxam Job Number: MB2I1463

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3039445 AZ	RPD	Trichloroethylene	2012/11/22	NC		%	30
		Vinyl Chloride	2012/11/22	NC		%	30
		p+m-Xylene	2012/11/22	NC (1)		%	30
		o-Xylene	2012/11/22	NC		%	30
		Xylene (Total)	2012/11/22	NC		%	30
		Trichlorofluoromethane (FREON 11)	2012/11/22	NC		%	30
3042577 LPG	Matrix Spike	Decachlorobiphenyl	2012/11/21		74	%	60 - 130
		Aroclor 1260	2012/11/21		60	%	60 - 130
		Total PCB	2012/11/21		60	%	60 - 130
	Spiked Blank	Decachlorobiphenyl	2012/11/20		101	%	60 - 130
		Aroclor 1260	2012/11/20		111	%	60 - 130
		Total PCB	2012/11/20		111	%	60 - 130
	Method Blank	Decachlorobiphenyl	2012/11/20		88	%	60 - 130
		Aroclor 1242	2012/11/20	ND, RDL=0.05		ug/L	
		Aroclor 1248	2012/11/20	ND, RDL=0.05		ug/L	
		Aroclor 1254	2012/11/20	ND, RDL=0.05		ug/L	
		Aroclor 1260	2012/11/20	ND, RDL=0.05		ug/L	
		Total PCB	2012/11/20	ND, RDL=0.05		ug/L	
	RPD	Aroclor 1242	2012/11/21	NC		%	30
		Aroclor 1248	2012/11/21	NC		%	30
		Aroclor 1254	2012/11/21	NC		%	30
		Aroclor 1260	2012/11/21	NC		%	30
		Total PCB	2012/11/21	NC		%	40
3043130 LHA	Matrix Spike	Free Cyanide	2012/11/21		101	%	80 - 120
	Spiked Blank	Free Cyanide	2012/11/21		106	%	80 - 120
	Method Blank	Free Cyanide	2012/11/21	ND, RDL=2		ug/L	
	RPD	Free Cyanide	2012/11/21	NC		%	20
3043354 SAC	Matrix Spike	Chromium (VI)	2012/11/26		96	%	80 - 120
	Spiked Blank	Chromium (VI)	2012/11/26		90	%	80 - 120
	Method Blank	Chromium (VI)	2012/11/26	ND, RDL=5.0		ug/L	
	RPD	Chromium (VI)	2012/11/26	NC		%	20
3043358 LCH	Matrix Spike	Mercury (Hg)	2012/11/21		113	%	75 - 125
	Spiked Blank	Mercury (Hg)	2012/11/21		107	%	80 - 120
	Method Blank	Mercury (Hg)	2012/11/21	ND, RDL=0.1		ug/L	
	RPD	Mercury (Hg)	2012/11/21	NC		%	20
3043712 HRE	Matrix Spike	Dissolved Antimony (Sb)	2012/11/21		108	%	80 - 120
		Dissolved Arsenic (As)	2012/11/21		112	%	80 - 120
		Dissolved Barium (Ba)	2012/11/21		103	%	80 - 120
		Dissolved Beryllium (Be)	2012/11/21		105	%	80 - 120
		Dissolved Boron (B)	2012/11/21		105	%	80 - 120
		Dissolved Cadmium (Cd)	2012/11/21		104	%	80 - 120
		Dissolved Chromium (Cr)	2012/11/21		100	%	80 - 120
		Dissolved Cobalt (Co)	2012/11/21		99	%	80 - 120
		Dissolved Copper (Cu)	2012/11/21		93	%	80 - 120
		Dissolved Lead (Pb)	2012/11/21		99	%	80 - 120
		Dissolved Molybdenum (Mo)	2012/11/21		109	%	80 - 120
		Dissolved Nickel (Ni)	2012/11/21		96	%	80 - 120
		Dissolved Selenium (Se)	2012/11/21		112	%	80 - 120
		Dissolved Silver (Ag)	2012/11/21		92	%	80 - 120
		Dissolved Sodium (Na)	2012/11/21		NC	%	80 - 120
		Dissolved Thallium (Tl)	2012/11/21		105	%	80 - 120
		Dissolved Uranium (U)	2012/11/21		106	%	80 - 120
		Dissolved Vanadium (V)	2012/11/21		101	%	80 - 120
		Dissolved Zinc (Zn)	2012/11/21		101	%	80 - 120
	Spiked Blank	Dissolved Antimony (Sb)	2012/11/21		99	%	80 - 120

Ecoplans Limited  
Attention: Peter Van Driel  
Client Project #: 1412815  
P.O. #:  
Site Location: 1770 SOMERSET ST. W., OTTAWA

### Quality Assurance Report (Continued)

Maxxam Job Number: MB211463

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3043712 HRE	Spiked Blank	Dissolved Arsenic (As)	2012/11/21		99	%	80 - 120
		Dissolved Barium (Ba)	2012/11/21		97	%	80 - 120
		Dissolved Beryllium (Be)	2012/11/21		99	%	80 - 120
		Dissolved Boron (B)	2012/11/21		99	%	80 - 120
		Dissolved Cadmium (Cd)	2012/11/21		98	%	80 - 120
		Dissolved Chromium (Cr)	2012/11/21		99	%	80 - 120
		Dissolved Cobalt (Co)	2012/11/21		96	%	80 - 120
		Dissolved Copper (Cu)	2012/11/21		95	%	80 - 120
		Dissolved Lead (Pb)	2012/11/21		95	%	80 - 120
		Dissolved Molybdenum (Mo)	2012/11/21		99	%	80 - 120
		Dissolved Nickel (Ni)	2012/11/21		97	%	80 - 120
		Dissolved Selenium (Se)	2012/11/21		100	%	80 - 120
		Dissolved Silver (Ag)	2012/11/21		95	%	80 - 120
		Dissolved Sodium (Na)	2012/11/21		104	%	80 - 120
		Dissolved Thallium (Tl)	2012/11/21		99	%	80 - 120
		Dissolved Uranium (U)	2012/11/21		101	%	80 - 120
		Dissolved Vanadium (V)	2012/11/21		98	%	80 - 120
		Dissolved Zinc (Zn)	2012/11/21		102	%	80 - 120
	Method Blank	Dissolved Antimony (Sb)	2012/11/21	ND, RDL=0.50		ug/L	
		Dissolved Arsenic (As)	2012/11/21	ND, RDL=1.0		ug/L	
		Dissolved Barium (Ba)	2012/11/21	ND, RDL=2.0		ug/L	
		Dissolved Beryllium (Be)	2012/11/21	ND, RDL=0.50		ug/L	
		Dissolved Boron (B)	2012/11/21	ND, RDL=10		ug/L	
		Dissolved Cadmium (Cd)	2012/11/21	ND, RDL=0.10		ug/L	
		Dissolved Chromium (Cr)	2012/11/21	ND, RDL=5.0		ug/L	
		Dissolved Cobalt (Co)	2012/11/21	ND, RDL=0.50		ug/L	
		Dissolved Copper (Cu)	2012/11/21	ND, RDL=1.0		ug/L	
		Dissolved Lead (Pb)	2012/11/21	ND, RDL=0.50		ug/L	
		Dissolved Molybdenum (Mo)	2012/11/21	ND, RDL=0.50		ug/L	
		Dissolved Nickel (Ni)	2012/11/21	ND, RDL=1.0		ug/L	
		Dissolved Selenium (Se)	2012/11/21	ND, RDL=2.0		ug/L	
		Dissolved Silver (Ag)	2012/11/21	ND, RDL=0.10		ug/L	
		Dissolved Sodium (Na)	2012/11/21	ND, RDL=100		ug/L	
		Dissolved Thallium (Tl)	2012/11/21	ND, RDL=0.050		ug/L	
		Dissolved Uranium (U)	2012/11/21	ND, RDL=0.10		ug/L	
		Dissolved Vanadium (V)	2012/11/21	ND, RDL=0.50		ug/L	
		Dissolved Zinc (Zn)	2012/11/21	ND, RDL=5.0		ug/L	
3043754 SAC	Matrix Spike						
	[PQ7273-05]	Chromium (VI)	2012/11/21		106	%	80 - 120
	Spiked Blank	Chromium (VI)	2012/11/21		97	%	80 - 120
	Method Blank	Chromium (VI)	2012/11/21	ND, RDL=5.0		ug/L	
	RPD [PQ7273-05]	Chromium (VI)	2012/11/21	NC		%	20
3043962 ADB	Matrix Spike						
	[PQ7271-02]	Dissolved Chloride (Cl)	2012/11/21		NC	%	80 - 120
	Spiked Blank	Dissolved Chloride (Cl)	2012/11/21		104	%	80 - 120
	Method Blank	Dissolved Chloride (Cl)	2012/11/21	ND, RDL=1		mg/L	
	RPD [PQ7271-02]	Dissolved Chloride (Cl)	2012/11/21	3.3		%	20
3044855 LHA	Matrix Spike	Free Cyanide	2012/11/22		95	%	80 - 120
	Spiked Blank	Free Cyanide	2012/11/22		110	%	80 - 120
	Method Blank	Free Cyanide	2012/11/22	ND, RDL=2		ug/L	
	RPD	Free Cyanide	2012/11/22	NC		%	20
3046022 BWW	Matrix Spike	o-Terphenyl	2012/11/22		111	%	50 - 130
		F2 (C10-C16 Hydrocarbons)	2012/11/22		101	%	50 - 130
		F3 (C16-C34 Hydrocarbons)	2012/11/22		110	%	50 - 130
		F4 (C34-C50 Hydrocarbons)	2012/11/22		100	%	50 - 130



Ecoplans Limited  
Attention: Peter Van Driel  
Client Project #: 1412815  
P.O. #:  
Site Location: 1770 SOMERSET ST. W., OTTAWA

### Quality Assurance Report (Continued)

Maxxam Job Number: MB211463

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3046022 BWW	Spiked Blank	o-Terphenyl	2012/11/22		110	%	50 - 130
		F2 (C10-C16 Hydrocarbons)	2012/11/22		94	%	70 - 130
		F3 (C16-C34 Hydrocarbons)	2012/11/22		113	%	70 - 130
		F4 (C34-C50 Hydrocarbons)	2012/11/22		98	%	70 - 130
	Method Blank	o-Terphenyl	2012/11/22		107	%	50 - 130
		F2 (C10-C16 Hydrocarbons)	2012/11/22	ND, RDL=100		ug/L	
		F3 (C16-C34 Hydrocarbons)	2012/11/22	ND, RDL=100		ug/L	
		F4 (C34-C50 Hydrocarbons)	2012/11/22	ND, RDL=100		ug/L	
	RPD	F2 (C10-C16 Hydrocarbons)	2012/11/23	NC		%	30
		F3 (C16-C34 Hydrocarbons)	2012/11/23	NC		%	30
		F4 (C34-C50 Hydrocarbons)	2012/11/23	NC		%	30
3046868 HRE	Matrix Spike	Dissolved Antimony (Sb)	2012/11/26		106	%	80 - 120
		Dissolved Arsenic (As)	2012/11/26		100	%	80 - 120
		Dissolved Barium (Ba)	2012/11/26		NC	%	80 - 120
		Dissolved Beryllium (Be)	2012/11/26		100	%	80 - 120
		Dissolved Boron (B)	2012/11/26		NC	%	80 - 120
		Dissolved Cadmium (Cd)	2012/11/26		104	%	80 - 120
		Dissolved Chromium (Cr)	2012/11/26		94	%	80 - 120
		Dissolved Cobalt (Co)	2012/11/26		97	%	80 - 120
		Dissolved Copper (Cu)	2012/11/26		NC	%	80 - 120
		Dissolved Lead (Pb)	2012/11/26		100	%	80 - 120
		Dissolved Molybdenum (Mo)	2012/11/26		105	%	80 - 120
		Dissolved Nickel (Ni)	2012/11/26		NC	%	80 - 120
		Dissolved Selenium (Se)	2012/11/26		96	%	80 - 120
		Dissolved Silver (Ag)	2012/11/26		NC	%	80 - 120
		Dissolved Sodium (Na)	2012/11/26		99	%	80 - 120
		Dissolved Thallium (Tl)	2012/11/26		100	%	80 - 120
		Dissolved Uranium (U)	2012/11/26		104	%	80 - 120
		Dissolved Vanadium (V)	2012/11/26		NC	%	80 - 120
	Spiked Blank	Dissolved Zinc (Zn)	2012/11/26		NC	%	80 - 120
		Dissolved Antimony (Sb)	2012/11/26		99	%	80 - 120
		Dissolved Arsenic (As)	2012/11/26		95	%	80 - 120
		Dissolved Barium (Ba)	2012/11/26		95	%	80 - 120
		Dissolved Beryllium (Be)	2012/11/26		97	%	80 - 120
		Dissolved Boron (B)	2012/11/26		98	%	80 - 120
		Dissolved Cadmium (Cd)	2012/11/26		96	%	80 - 120
		Dissolved Chromium (Cr)	2012/11/26		93	%	80 - 120
		Dissolved Cobalt (Co)	2012/11/26		92	%	80 - 120
		Dissolved Copper (Cu)	2012/11/26		92	%	80 - 120
		Dissolved Lead (Pb)	2012/11/26		96	%	80 - 120
		Dissolved Molybdenum (Mo)	2012/11/26		99	%	80 - 120
		Dissolved Nickel (Ni)	2012/11/26		92	%	80 - 120
		Dissolved Selenium (Se)	2012/11/26		92	%	80 - 120
	Method Blank	Dissolved Silver (Ag)	2012/11/26		94	%	80 - 120
		Dissolved Sodium (Na)	2012/11/26		95	%	80 - 120
		Dissolved Thallium (Tl)	2012/11/26		96	%	80 - 120
		Dissolved Uranium (U)	2012/11/26		99	%	80 - 120
		Dissolved Vanadium (V)	2012/11/26		93	%	80 - 120
		Dissolved Zinc (Zn)	2012/11/26		96	%	80 - 120
		Dissolved Antimony (Sb)	2012/11/26	ND, RDL=0.50		ug/L	
		Dissolved Arsenic (As)	2012/11/26	ND, RDL=1.0		ug/L	
		Dissolved Barium (Ba)	2012/11/26	ND, RDL=2.0		ug/L	
		Dissolved Beryllium (Be)	2012/11/26	ND, RDL=0.50		ug/L	
		Dissolved Boron (B)	2012/11/26	ND, RDL=10		ug/L	
		Dissolved Cadmium (Cd)	2012/11/26	ND, RDL=0.10		ug/L	

Ecoplans Limited  
Attention: Peter Van Driel  
Client Project #: 1412815  
P.O. #:  
Site Location: 1770 SOMERSET ST. W., OTTAWA

### Quality Assurance Report (Continued)

Maxxam Job Number: MB2I1463

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3046868 HRE	Method Blank	Dissolved Chromium (Cr)	2012/11/26	ND, RDL=5.0		ug/L	
		Dissolved Cobalt (Co)	2012/11/26	ND, RDL=0.50		ug/L	
		Dissolved Copper (Cu)	2012/11/26	ND, RDL=1.0		ug/L	
		Dissolved Lead (Pb)	2012/11/26	ND, RDL=0.50		ug/L	
		Dissolved Molybdenum (Mo)	2012/11/26	ND, RDL=0.50		ug/L	
		Dissolved Nickel (Ni)	2012/11/26	ND, RDL=1.0		ug/L	
		Dissolved Selenium (Se)	2012/11/26	ND, RDL=2.0		ug/L	
		Dissolved Silver (Ag)	2012/11/26	ND, RDL=0.10		ug/L	
		Dissolved Sodium (Na)	2012/11/26	ND, RDL=100		ug/L	
		Dissolved Thallium (Tl)	2012/11/26	ND, RDL=0.050		ug/L	
		Dissolved Uranium (U)	2012/11/26	ND, RDL=0.10		ug/L	
		Dissolved Vanadium (V)	2012/11/26	0.65, RDL=0.50		ug/L	
	RPD	Dissolved Zinc (Zn)	2012/11/26	ND, RDL=5.0		ug/L	
		Dissolved Antimony (Sb)	2012/11/26	3.3		%	20
		Dissolved Arsenic (As)	2012/11/26	6.1		%	20
		Dissolved Barium (Ba)	2012/11/26	3.1		%	20
		Dissolved Beryllium (Be)	2012/11/26	3.2		%	20
		Dissolved Boron (B)	2012/11/26	6.0		%	20
		Dissolved Cadmium (Cd)	2012/11/26	3.1		%	20
		Dissolved Chromium (Cr)	2012/11/26	3.2		%	20
		Dissolved Copper (Cu)	2012/11/26	4.0		%	20
		Dissolved Lead (Pb)	2012/11/26	2.6		%	20
		Dissolved Molybdenum (Mo)	2012/11/26	3.5		%	20
		Dissolved Nickel (Ni)	2012/11/26	3.5		%	20
		Dissolved Selenium (Se)	2012/11/26	4.9		%	20
		Dissolved Silver (Ag)	2012/11/26	2.5		%	20
		Dissolved Thallium (Tl)	2012/11/26	2.1		%	20
		Dissolved Vanadium (V)	2012/11/26	3.8		%	20
		Dissolved Zinc (Zn)	2012/11/26	1.7		%	20
3046919 LRA	Matrix Spike	1,4-Difluorobenzene	2012/11/24		101	%	70 - 130
		4-Bromofluorobenzene	2012/11/24		101	%	70 - 130
		D10-Ethylbenzene	2012/11/24		100	%	70 - 130
		D4-1,2-Dichloroethane	2012/11/24		96	%	70 - 130
		F1 (C6-C10)	2012/11/24		86	%	70 - 130
	Spiked Blank	1,4-Difluorobenzene	2012/11/23		103	%	70 - 130
		4-Bromofluorobenzene	2012/11/23		105	%	70 - 130
		D10-Ethylbenzene	2012/11/23		95	%	70 - 130
		D4-1,2-Dichloroethane	2012/11/23		96	%	70 - 130
		F1 (C6-C10)	2012/11/23		100	%	70 - 130
	Method Blank	1,4-Difluorobenzene	2012/11/23		102	%	70 - 130
		4-Bromofluorobenzene	2012/11/23		102	%	70 - 130
		D10-Ethylbenzene	2012/11/23		101	%	70 - 130
		D4-1,2-Dichloroethane	2012/11/23		95	%	70 - 130
		F1 (C6-C10)	2012/11/23	ND, RDL=25		ug/L	
	RPD	F1 (C6-C10) - BTEX	2012/11/23	ND, RDL=25		ug/L	
		F1 (C6-C10)	2012/11/24	NC		%	30
		F1 (C6-C10) - BTEX	2012/11/24	NC		%	30

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.

Ecoplans Limited  
Attention: Peter Van Driel  
Client Project #: 1412815  
P.O. #:  
Site Location: 1770 SOMERSET ST. W., OTTAWA

### Quality Assurance Report (Continued)

Maxxam Job Number: MB211463

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

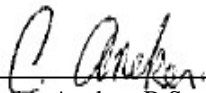
( 1 ) VOC Analysis: Detection limit was raised due to instrument background.

## Validation Signature Page

**Maxxam Job #: B2I1463**

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The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



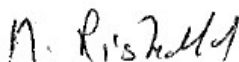

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Charles Ancker, B.Sc., M.Sc., C.Chem, Senior Analyst




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Ewa Pranjic, M.Sc., C.Chem, Scientific Specialist




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Medhat Riskallah, Manager, Hydrocarbon Department



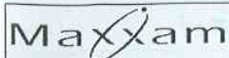

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Mamdouh Salib, Analyst, Hydrocarbons

=====

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.





Maxxam Analytics International Corporation o/a Maxxam Analytics

6740 Campbell Road, Mississauga, Ontario Canada L5N 2L8 Tel: (905) 817-5700 Toll-free 800-563-6266 Fax: (905) 817-5779 www.maxxam.ca

CHAIN OF CUSTODY

19-Nov-12 08:00

Jolanta Goralczyk

Page of

## INVOICE INFORMATION:

Company Name: #47490 Ecoplans Limited  
Contact Name: Peter Van Driel  
Address: 72 Victoria St S Suite 100  
Kitchener ON N2G 4Y9  
Phone: (519) 741-8850 x2280 Fax: (519) 741-8884  
Email: pvandriel@ecoplans.com

## REPORT INFORMATION (if differs from invoice):

Company Name: MMM (Ecoplans)  
Contact Name: Peter Van Driel  
Address: 72 Victoria St S Suite 100  
Kitchener ON N2G-4Y9  
Phone: (519) 741-8850 x2280 Fax:  
Email: pvandriel@ecoplans.com

## PROJECT INFORMATION:

Quotation #: A79521  
P.O. #:  
Project #: 1412815  
Project Name:  
Site #: Ottawa 1770 Somerset St W  
Sampled By: Peter van Driel



B211463

M\_P

ENV-576

Only:

BOTTLE ORDER #:



380818

PROJECT MANAGER:

Jolanta Goralczyk

## Regulation 153 (2011)

## Other Regulations

## SPECIAL INSTRUCTIONS

☒ Table 1  
☒ Table 2  
☐ Table 3  
☐ Table

Res/Park

Ind/Comm

Agri/Other

Medium/Fine

Coarse

For RSC

☐ CCME  
☐ Reg. 558  
☐ MISA  
☐ PWQO  
☐ Other

☐ Sanitary Sewer Bylaw  
☐ Storm Sewer Bylaw  
☐ Municipality

Include Criteria on Certificate of Analysis (Y/N)? ☒

Note: For MOE regulated drinking water samples - please use the Drinking Water Chain of Custody Form

SAMPLES MUST BE KEPT COOL (&lt; 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

## ANALYSIS REQUESTED (Please be specific):

Regulated Drinking Water? (Y/N)

Metals Field Filtered? (Y/N)

Water: O. Reg. 153 VOCs

Water: O. Reg. 153

Petroleum Hydrocarbons FI-FL

Water: O. Reg. 153

Metals + Inorganics

Water: O. Reg. 153

PCBs

## TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT:

(will be applied if Rush TAT is not specified):

Standard TAT = 5-7 Working days for most tests.

Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are &gt; 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)

Date Required: Time Required: ☐

Rush Confirmation Number: (call lab for #)

# of Bottles Comments

Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Regulated Drinking Water? (Y/N)	Metals Field Filtered? (Y/N)	Water: O. Reg. 153 VOCs	Water: O. Reg. 153	Petroleum Hydrocarbons FI-FL	Water: O. Reg. 153	Metals + Inorganics	Water: O. Reg. 153	PCBs	# of Bottles	Comments
1 MW-1		16-Nov-12	3:00 PM	GW			✓	✓	✓					14	All sample bottles filled
2 MW-2		17-Nov-12	10:00 AM	GW			✓	✓	✓					14	Couldn't get enough water for Chromium VI or Mercury
3 M-4		17-Nov-12	10:00 AM	GW			✓	✓	✓					14	Couldn't get enough water for all PHCs or metals bottles.
4 MW-5		16-Nov-12	12:00 PM	GW			✓	✓	✓	✓				16	All sample bottles filled
5 Dup		16-Nov-12	6:00 PM	GW			✓	✓	✓					14	All sample bottles filled. <del>in enclosed Trip Blank pack</del>
6 Trip Blank		-		Water			✓	✓	✓						In enclosed Trip Blank pack
7															
8															
9															
10															

\*RELINQUISHED BY: (Signature/Print)

Date: (YY/MM/DD)

Time:

RECEIVED BY: (Signature/Print)

Date: (YY/MM/DD)

Time:

# Jars Used and

Not Submitted

## Laboratory Use Only

Temperature (°C) on Receipt

Custody Seal

Yes

No

-11/3/3°C

Intact

White: Maxxam Yellow: Client



\* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.  
Maxxam Analytics International Corporation o/a Maxxam Analytics



Maxxam Analytics International Corporation o/a Maxxam Analytics  
6740 Campbell Road, Mississauga, Ontario Canada L5N 2L8 Tel: (905) 817-5700 Toll-free: 800-563-6266 Fax: (905) 817-5779 www.maxxam.ca

# CHAIN OF CUSTODY RECORD

Page  of

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#47490 Ecoplans Limited	Company Name:	Peter Van Driel	Quotation #:	A79521	MAXXAM JOB #:	BOTTLE ORDER #:
Contact Name:	Peter Van Driel	Contact Name:	Peter Van Driel	P.O. #:			
Address:	72 Victoria St S Suite 100 Kitchener ON N2G 4Y9	Address:		Project #:		CHAIN OF CUSTODY #:	PROJECT MANAGER:
Phone:	(519)741-8850 x2280 Fax: (519)741-8884	Phone:	(519)741-8850 x2280 Fax:	Project Name:			Jolanta Goralczyk
Email:	pvandriel@ecoplans.com	Email:	pvandriel@ecoplans.com	Site #:	Ottawa	C#380818-01-02	

<b>Regulation 153 (2011)</b>		<b>Other Regulations</b>		<b>SPECIAL INSTRUCTIONS</b>		<b>ANALYSIS REQUESTED (Please be specific):</b>		<b>TURNAROUND TIME (TAT) REQUIRED:</b>	
<input type="checkbox"/> Table 1 <input checked="" type="checkbox"/> Table 2 <input type="checkbox"/> Table 3 <input type="checkbox"/> Table 4		<input type="checkbox"/> Res/Park <input type="checkbox"/> Ind/Comm <input type="checkbox"/> Agri/Other <input checked="" type="checkbox"/> For RSC		<input type="checkbox"/> CCME <input type="checkbox"/> Reg. 558 <input type="checkbox"/> MISA <input type="checkbox"/> PWQO <input type="checkbox"/> Other		<input type="checkbox"/> Sanitary Sewer Bylaw <input type="checkbox"/> Storm Sewer Bylaw Municipality: _____		<div style="background-color: black; color: white; padding: 2px; text-align: center;">PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS</div>	
Include Criteria on Certificate of Analysis (Y/N)? _____						Regular (Standard) TAT: (will be applied if Rush TAT is not specified): Standard TAT = 5-7 Working days for most tests. Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details. Job Specific Rush TAT (if applies to entire submission)			

Note: For MOE regulated drinking water samples - please use the Drinking Water Chain of Custody Form

SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Regulated Drinking Water ? (Y/N)	Metals Field Filtered ? (Y/N)	Water: O.Reg 153 VOCs (RSC)	ANALYSIS REQUESTED (Please be specific)	Confirmation Number:	Comments
1 Trip Blank		19-Nov-12	1:00PM						B211463  PQ7484-01 TRIP BLANK VOCB E 3 of 3	
2										
3										
4										
5										
6										
7										
8										
9										
10										

REC'D IN WATERLOO

*RELINQUISHED BY: (Signature/Print)		Date: (YY/MM/DD)	Time:	RECEIVED BY: (Signature/Print)		Date: (YY/MM/DD)	Time:	# Jars Used and	Laboratory Use Only				
Peter van Driel		Nov, 19/12		Jolanta Goralczyk		2012-11-18	13:18	Not Submitted	Time Sensitive	Temperature (°C) on Receipt	Custody Seal	Yes	No
											Present		
											Intact		

\* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

Maxxam Analytics International Corporation o/a Maxxam Analytics

White: Maxxam Yellow: Client

Client: Ecoplans  
72 Victoria Street, Suite 100  
Kitchener, ON  
N2G 4Y9  
Attention: Peter van Driel  
PO#:  
Invoice to: Ecoplans

Report Number: 1323765  
Date Submitted: 2013-10-24  
Date Reported: 2013-10-31  
Project: 1412815  
COC #: 175640

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**Dear Peter van Driel:**

**Please find attached the analytical results for your samples. If you have any questions regarding this report, please do not hesitate to call (613-727-5692).**

Report Comments:

APPROVAL: \_\_\_\_\_

Lorna Wilson  
Laboratory Supervisor, Inorganics

APPROVAL: \_\_\_\_\_

Charlie (Long) Qu  
Laboratory Supervisor, Organics

Exova (Ottawa) is certified and accredited for specific parameters by:

CALA, Canadian Association for Laboratory Accreditation (to ISO 17025), OMAFRA, Ontario Ministry of Agriculture, Food and Rural Affairs (for farm soils), Licensed by Ontario MOE for specific tests in drinking water.

Exova (Mississauga) is certified and accredited for specific parameters by:

SCC, Standards Council of Canada (to ISO 17025)

Please note: Field data, where presented on the report, has been provided by the client and is presented for informational purposes only.



Client: Ecoplans  
72 Victoria Street, Suite 100  
Kitchener, ON  
N2G 4Y9  
Attention: Peter van Driel  
PO#:   
Invoice to: Ecoplans

Report Number: 1323765  
Date Submitted: 2013-10-24  
Date Reported: 2013-10-31  
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Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.			
					1068269 Soil 2013-10-23 MW 10-2	1068270 Soil 2013-10-23 MW 11-2	1068271 Soil 2013-10-23 MW 11A-2	1068272 Soil 2013-10-23 MW 9B-2
Inorganics	Antimony	1	ug/g	STD-7.5	<1	<1		<1
	Arsenic	1	ug/g	STD-11	<1	1		<1
	Barium	1	ug/g	STD-390	20	57		31
	Beryllium	1	ug/g	STD-4	<1	<1		<1
	Boron (Hot Water Soluble)	0.5	ug/g	STD-1.5	<0.5	<0.5		<0.5
	Boron (total)	10	ug/g	STD-120	<10	10		10
	Cadmium	0.5	ug/g	STD-1	<0.5	<0.5		<0.5
	Chromium Total	1	ug/g	STD-160	10	25		10
	Chromium VI	0.50	ug/g	STD-8	<0.50	<0.50		<0.50
	Cobalt	1	ug/g	STD-22	3	6		4
	Copper	1	ug/g	STD-140	8	20		15
	Cyanide (CN-)	0.03	ug/g	STD-0.051	<0.03	<0.03		<0.03
	Lead	1	ug/g	STD-45	3	23		4
	Mercury	0.1	ug/g	STD-0.25	<0.1	<0.1		<0.1
	Molybdenum	1	ug/g	STD-6.9	<1	<1		<1
	Nickel	1	ug/g	STD-100	7	16		9
	Selenium	1	ug/g	STD-2.4	<1	<1		<1
	Silver	0.2	ug/g	STD-20	<0.2	<0.2		<0.2
	Thallium	1	ug/g	STD-1	<1	<1		<1
	Uranium	0.5	ug/g	STD-23	<0.5	<0.5		<0.5
	Vanadium	2	ug/g	STD-86	13	30		19
	Zinc	2	ug/g	STD-340	15	38		15
Misc/Others	Electrical Conductivity	0.05	mS/cm	STD-0.7	0.17	0.31		0.85*
	pH - CaCl2	2.0			7.2	7.3		7.8
	Sodium Adsorption Ratio	0.01		STD-5	2.71	1.54		16.0*
Moisture	Moisture	0.1	%		0.8	3.6		7.6

Guideline = O.Reg 153-T2-Soil-Agri-Coarse

\* = Guideline Exceedence

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					Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1068269 Soil  2013-10-23 MW 10-2	1068270 Soil  2013-10-23 MW 11-2	1068271 Soil  2013-10-23 MW 11A-2	1068272 Soil  2013-10-23 MW 9B-2
Group	Analyte	MRL	Units	Guideline					
Petroleum Hydrocarbons	Petroleum Hydrocarbons F1	10	ug/g	STD-55		<10	<10		<10
	Petroleum Hydrocarbons F1-BTEX	10	ug/g			<10	<10		<10
	Petroleum Hydrocarbons F2	10	ug/g	STD-98		<10	<10		<10
	Petroleum Hydrocarbons F3	20	ug/g	STD-300		<20	<20		<20
	Petroleum Hydrocarbons F4	20	ug/g	STD-2800		<20	<20		<20
Semi-Volatiles	Acenaphthene	0.05	ug/g	STD-7.9		<0.05		<0.05	<0.05
	Acenaphthylene	0.05	ug/g	STD-0.15		<0.05		<0.05	<0.05
	Anthracene	0.05	ug/g	STD-0.67		<0.05		<0.05	<0.05
	Benz[a]anthracene	0.05	ug/g	STD-0.5		<0.05		<0.05	<0.05
	Benzo[a]pyrene	0.05	ug/g	STD-0.078		<0.05		<0.05	<0.05
	Benzo[b]fluoranthene	0.05	ug/g	STD-0.78		<0.05		<0.05	<0.05
	Benzo[ghi]perylene	0.05	ug/g	STD-6.6		<0.05		<0.05	<0.05
	Benzo[k]fluoranthene	0.05	ug/g	STD-0.78		<0.05		<0.05	<0.05
	Chrysene	0.05	ug/g	STD-7		<0.05		<0.05	<0.05
	Dibenz[a h]anthracene	0.05	ug/g	STD-0.1		<0.05		<0.05	<0.05
	Fluoranthene	0.05	ug/g	STD-0.69		<0.05		<0.05	<0.05
	Fluorene	0.05	ug/g	STD-62		<0.05		<0.05	<0.05
	Indeno[1 2 3-cd]pyrene	0.05	ug/g	STD-0.38		<0.05		<0.05	<0.05
	Methlynaphthalene, 1-	0.05	ug/g	STD-0.99		<0.05		<0.05	<0.05
	Methlynaphthalene, 2-	0.05	ug/g	STD-0.99		<0.05		<0.05	<0.05
	Naphthalene	0.05	ug/g	STD-0.6		<0.05		<0.05	<0.05
	Phenanthrene	0.05	ug/g	STD-6.2		<0.05		<0.05	<0.05
	Pyrene	0.05	ug/g	STD-78		<0.05		<0.05	<0.05
VOCs	Acetone	0.50	ug/g	STD-16		<0.50	<0.50		<0.50
	Benzene	0.02	ug/g	STD-0.21		<0.02	<0.02		<0.02
	Bromodichloromethane	0.05	ug/g	STD-1.5		<0.05	<0.05		<0.05

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					Lab I.D.	1068269	1068270	1068271	1068272
					Sample Matrix	Soil	Soil	Soil	Soil
					Sample Type				
					Sampling Date	2013-10-23	2013-10-23	2013-10-23	2013-10-23
					Sample I.D.	MW 10-2	MW 11-2	MW 11A-2	MW 9B-2
Group	Analyte	MRL	Units	Guideline					
VOCs	Bromoform	0.05	ug/g	STD-0.27		<0.05	<0.05		<0.05
	c-1,3-Dichloropropylene	0.05	ug/g			<0.05	<0.05		<0.05
	Carbon Tetrachloride	0.05	ug/g	STD-0.05		<0.05	<0.05		<0.05
	Chlorobenzene	0.05	ug/g	STD-2.4		<0.05	<0.05		<0.05
	Chloroform	0.05	ug/g	STD-0.05		<0.05	<0.05		<0.05
	Dichlorobenzene, 1,2-	0.05	ug/g	STD-1.2		<0.05	<0.05		<0.05
	Dichlorobenzene, 1,3-	0.05	ug/g	STD-4.8		<0.05	<0.05		<0.05
	Dichlorobenzene, 1,4-	0.05	ug/g	STD-0.083		<0.05	<0.05		<0.05
	Dichlorodifluoromethane	0.05	ug/g	STD-16		<0.05	<0.05		<0.05
	Dichloroethane, 1,1-	0.05	ug/g	STD-0.47		<0.05	<0.05		<0.05
	Dichloroethane, 1,2-	0.05	ug/g	STD-0.05		<0.05	<0.05		<0.05
	Dichloroethylene, 1,1-	0.05	ug/g	STD-0.05		<0.05	<0.05		<0.05
	Dichloroethylene, 1,2-cis-	0.05	ug/g	STD-1.9		<0.05	<0.05		<0.05
	Dichloroethylene, 1,2-trans-	0.05	ug/g	STD-0.084		<0.05	<0.05		<0.05
	Dichloropropane, 1,2-	0.05	ug/g	STD-0.05		<0.05	<0.05		<0.05
	Dichloropropene, 1,3-	0.05	ug/g	STD-0.05		<0.05	<0.05		<0.05
	Ethylbenzene	0.05	ug/g	STD-1.1		<0.05	<0.05		<0.05
	Ethylene dibromide	0.05	ug/g	STD-0.05		<0.05	<0.05		<0.05
	Hexane (n)	0.05	ug/g	STD-2.8		<0.05	<0.05		<0.05
	m/p-xylene	0.05	ug/g			<0.05	<0.05		<0.05
	Methyl Ethyl Ketone	0.50	ug/g	STD-16		<0.50	<0.50		<0.50
	Methyl Isobutyl Ketone	0.50	ug/g	STD-1.7		<0.50	<0.50		<0.50
	Methyl tert-Butyl Ether (MTBE)	0.05	ug/g	STD-0.75		<0.05	<0.05		<0.05
	Methylene Chloride	0.05	ug/g	STD-0.1		<0.05	<0.05		<0.05
	o-xylene	0.05	ug/g			<0.05	<0.05		<0.05
	Styrene	0.05	ug/g	STD-0.7		<0.05	<0.05		<0.05

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					Lab I.D.	1068269	1068270	1068271	1068272
					Sample Matrix	Soil	Soil	Soil	Soil
					Sample Type				
					Sampling Date	2013-10-23	2013-10-23	2013-10-23	2013-10-23
					Sample I.D.	MW 10-2	MW 11-2	MW 11A-2	MW 9B-2
Group	Analyte	MRL	Units	Guideline					
VOCs	t-1,3-Dichloropropylene	0.05	ug/g			<0.05	<0.05		<0.05
	Tetrachloroethane, 1,1,1,2-	0.05	ug/g	STD-0.058		<0.05	<0.05		<0.05
	Tetrachloroethane, 1,1,2,2-	0.05	ug/g	STD-0.05		<0.05	<0.05		<0.05
	Tetrachloroethylene	0.05	ug/g	STD-0.28		<0.05	<0.05		<0.05
	Toluene	0.20	ug/g	STD-2.3		<0.20	<0.20		<0.20
	Trichloroethane, 1,1,1-	0.05	ug/g	STD-0.38		<0.05	<0.05		<0.05
	Trichloroethane, 1,1,2-	0.05	ug/g	STD-0.05		<0.05	<0.05		<0.05
	Trichloroethylene	0.05	ug/g	STD-0.061		<0.05	<0.05		<0.05
	Trichlorofluoromethane	0.05	ug/g	STD-4		<0.05	<0.05		<0.05
	Vinyl Chloride	0.02	ug/g	STD-0.02		<0.02	<0.02		<0.02
	Xylene Mixture	0.05	ug/g	STD-3.1		<0.05	<0.05		<0.05
VOCs Surrogates (%REC)	1,2-dichloroethane-d4	0	%			113	109		111
	4-bromofluorobenzene	0	%			116	116		118
	Toluene-d8	0	%			101	103		105

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					Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1068273 Soil  2013-10-23 Dup - 1	1068274 Soil  2013-10-23 MW 9B - 3
Group	Analyte	MRL	Units	Guideline			
Inorganics	Antimony	1	ug/g	STD-7.5	<1		
	Arsenic	1	ug/g	STD-11	2		
	Barium	1	ug/g	STD-390	53		
	Beryllium	1	ug/g	STD-4	<1		
	Boron (Hot Water Soluble)	0.5	ug/g	STD-1.5	<0.5		
	Boron (total)	10	ug/g	STD-120	20		
	Cadmium	0.5	ug/g	STD-1	<0.5		
	Chromium Total	1	ug/g	STD-160	22		
	Chromium VI	0.50	ug/g	STD-8	<0.50		
	Cobalt	1	ug/g	STD-22	7		
	Copper	1	ug/g	STD-140	25		
	Cyanide (CN-)	0.03	ug/g	STD-0.051	<0.03		
	Lead	1	ug/g	STD-45	7		
	Mercury	0.1	ug/g	STD-0.25	<0.1		
	Molybdenum	1	ug/g	STD-6.9	1		
	Nickel	1	ug/g	STD-100	19		
	Selenium	1	ug/g	STD-2.4	<1		
	Silver	0.2	ug/g	STD-20	<0.2		
	Thallium	1	ug/g	STD-1	<1		
	Uranium	0.5	ug/g	STD-23	0.5		
	Vanadium	2	ug/g	STD-86	29		
	Zinc	2	ug/g	STD-340	26		
Misc/Others	Electrical Conductivity	0.05	mS/cm	STD-0.7	1.08*		
	pH - CaCl2	2.0			7.7		
	Sodium Adsorption Ratio	0.01		STD-5	3.31		
Moisture	Moisture	0.1	%		6.4		

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					Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1068273 Soil  2013-10-23 Dup - 1	1068274 Soil  2013-10-23 MW 9B - 3
Group	Analyte	MRL	Units	Guideline			
Petroleum Hydrocarbons	Petroleum Hydrocarbons F1	10	ug/g	STD-55	<10	<10	
	Petroleum Hydrocarbons F1-BTEX	10	ug/g		<10		
	Petroleum Hydrocarbons F2	10	ug/g	STD-98	<10		
	Petroleum Hydrocarbons F3	20	ug/g	STD-300	<20		
	Petroleum Hydrocarbons F4	20	ug/g	STD-2800	<20		
Semi-Volatiles	Acenaphthene	0.05	ug/g	STD-7.9	<0.05		
	Acenaphthylene	0.05	ug/g	STD-0.15	<0.05		
	Anthracene	0.05	ug/g	STD-0.67	<0.05		
	Benz[a]anthracene	0.05	ug/g	STD-0.5	<0.05		
	Benzo[a]pyrene	0.05	ug/g	STD-0.078	<0.05		
	Benzo[b]fluoranthene	0.05	ug/g	STD-0.78	<0.05		
	Benzo[ghi]perylene	0.05	ug/g	STD-6.6	<0.05		
	Benzo[k]fluoranthene	0.05	ug/g	STD-0.78	<0.05		
	Chrysene	0.05	ug/g	STD-7	<0.05		
	Dibenz[a h]anthracene	0.05	ug/g	STD-0.1	<0.05		
	Fluoranthene	0.05	ug/g	STD-0.69	<0.05		
	Fluorene	0.05	ug/g	STD-62	<0.05		
	Indeno[1 2 3-cd]pyrene	0.05	ug/g	STD-0.38	<0.05		
	Methlynaphthalene, 1-	0.05	ug/g	STD-0.99	<0.05		
	Methlynaphthalene, 2-	0.05	ug/g	STD-0.99	<0.05		
	Naphthalene	0.05	ug/g	STD-0.6	<0.05		
	Phenanthrene	0.05	ug/g	STD-6.2	<0.05		
	Pyrene	0.05	ug/g	STD-78	<0.05		
VOCs	Acetone	0.50	ug/g	STD-16	<0.50	<0.50	
	Benzene	0.02	ug/g	STD-0.21	<0.02	<0.02	
	Bromodichloromethane	0.05	ug/g	STD-1.5	<0.05	<0.05	

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					Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1068273 Soil  2013-10-23 Dup - 1	1068274 Soil  2013-10-23 MW 9B - 3
Group	Analyte	MRL	Units	Guideline			
VOCs	Bromoform	0.05	ug/g	STD-0.27		<0.05	<0.05
	c-1,3-Dichloropropylene	0.05	ug/g			<0.05	<0.05
	Carbon Tetrachloride	0.05	ug/g	STD-0.05		<0.05	<0.05
	Chlorobenzene	0.05	ug/g	STD-2.4		<0.05	<0.05
	Chloroform	0.05	ug/g	STD-0.05		<0.05	<0.05
	Dichlorobenzene, 1,2-	0.05	ug/g	STD-1.2		<0.05	<0.05
	Dichlorobenzene, 1,3-	0.05	ug/g	STD-4.8		<0.05	<0.05
	Dichlorobenzene, 1,4-	0.05	ug/g	STD-0.083		<0.05	<0.05
	Dichlorodifluoromethane	0.05	ug/g	STD-16		<0.05	<0.05
	Dichloroethane, 1,1-	0.05	ug/g	STD-0.47		<0.05	<0.05
	Dichloroethane, 1,2-	0.05	ug/g	STD-0.05		<0.05	<0.05
	Dichloroethylene, 1,1-	0.05	ug/g	STD-0.05		<0.05	<0.05
	Dichloroethylene, 1,2-cis-	0.05	ug/g	STD-1.9		<0.05	<0.05
	Dichloroethylene, 1,2-trans-	0.05	ug/g	STD-0.084		<0.05	<0.05
	Dichloropropane, 1,2-	0.05	ug/g	STD-0.05		<0.05	<0.05
	Dichloropropene, 1,3-	0.05	ug/g	STD-0.05		<0.05	<0.05
	Ethylbenzene	0.05	ug/g	STD-1.1		<0.05	<0.05
	Ethylene dibromide	0.05	ug/g	STD-0.05		<0.05	<0.05
	Hexane (n)	0.05	ug/g	STD-2.8		<0.05	<0.05
	m/p-xylene	0.05	ug/g			<0.05	<0.05
	Methyl Ethyl Ketone	0.50	ug/g	STD-16		<0.50	<0.50
	Methyl Isobutyl Ketone	0.50	ug/g	STD-1.7		<0.50	<0.50
	Methyl tert-Butyl Ether (MTBE)	0.05	ug/g	STD-0.75		<0.05	<0.05
	Methylene Chloride	0.05	ug/g	STD-0.1		<0.05	<0.05
	o-xylene	0.05	ug/g			<0.05	<0.05
	Styrene	0.05	ug/g	STD-0.7		<0.05	<0.05

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\*\* - Analysis completed in Mississauga

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Client: Ecoplans  
72 Victoria Street, Suite 100  
Kitchener, ON  
N2G 4Y9  
Attention: Peter van Driel  
PO#:   
Invoice to: Ecoplans

Report Number: 1323765  
Date Submitted: 2013-10-24  
Date Reported: 2013-10-31  
Project: 1412815  
COC #: 175640

					Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1068273 Soil  2013-10-23 Dup - 1	1068274 Soil  2013-10-23 MW 9B - 3
Group	Analyte	MRL	Units	Guideline			
VOCs	t-1,3-Dichloropropylene	0.05	ug/g			<0.05	<0.05
	Tetrachloroethane, 1,1,1,2-	0.05	ug/g	STD-0.058		<0.05	<0.05
	Tetrachloroethane, 1,1,2,2-	0.05	ug/g	STD-0.05		<0.05	<0.05
	Tetrachloroethylene	0.05	ug/g	STD-0.28		<0.05	<0.05
	Toluene	0.20	ug/g	STD-2.3		<0.20	<0.20
	Trichloroethane, 1,1,1-	0.05	ug/g	STD-0.38		<0.05	<0.05
	Trichloroethane, 1,1,2-	0.05	ug/g	STD-0.05		<0.05	<0.05
	Trichloroethylene	0.05	ug/g	STD-0.061		<0.05	<0.05
	Trichlorofluoromethane	0.05	ug/g	STD-4		<0.05	<0.05
	Vinyl Chloride	0.02	ug/g	STD-0.02		<0.02	<0.02
	Xylene Mixture	0.05	ug/g	STD-3.1		<0.05	<0.05
VOCs Surrogates (%REC)	1,2-dichloroethane-d4	0	%			109	111
	4-bromofluorobenzene	0	%			111	116
	Toluene-d8	0	%			101	103

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 COC #: 175640

### QC Summary

Analyte	Blank	QC % Rec	QC Limits
Run No 260006	Analysis Date 2013-10-28	Method EPA 200.8	
Silver	<0.2 ug/g	91	70-130
Arsenic	<1 ug/g	96	70-130
Barium	<1 ug/g	95	70-130
Beryllium	<1 ug/g	98	70-130
Cadmium	<0.5 ug/g	94	70-130
Cobalt	<1 ug/g	103	70-130
Chromium Total	<1 ug/g	101	70-130
Copper	<1 ug/g	100	70-130
Molybdenum	<1 ug/g	99	70-130
Nickel	<1 ug/g	103	70-130
Lead	<1 ug/g	103	70-130
Antimony	<1 ug/g	84	70-130
Selenium	<1 ug/g	99	70-130
Thallium	<1 ug/g	100	70-130

Guideline = O.Reg 153-T2-Soil-Agri-Coarse

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### QC Summary

Analyte	Blank	QC % Rec	QC Limits
Uranium	<0.5 ug/g	93	70-130
Vanadium	<2 ug/g	106	70-130
Zinc	<2 ug/g	104	70-130
<b>Run No</b> 260045 <b>Analysis Date</b> 2013-10-29 <b>Method</b> Ag Soil			
Sodium Adsorption Ratio	<0.01		
<b>Run No</b> 260048 <b>Analysis Date</b> 2013-10-28 <b>Method</b> P 8270			
Methlynaphthalene, 1-	<0.05 ug/g	60	20-150
Methlynaphthalene, 2-	<0.05 ug/g	69	20-150
Acenaphthene	<0.05 ug/g	64	20-150
Acenaphthylene	<0.05 ug/g	61	20-150
Anthracene	<0.05 ug/g	69	20-150
Benz[a]anthracene	<0.05 ug/g	69	20-150
Benzo[a]pyrene	<0.05 ug/g	75	20-150
Benzo[b]fluoranthene	<0.05 ug/g	60	20-150
Benzo[ghi]perylene	<0.05 ug/g	78	20-150
Benzo[k]fluoranthene	<0.05 ug/g	119	20-150
Chrysene	<0.05 ug/g	71	20-150

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**QC Summary**

Analyte	Blank	QC % Rec	QC Limits
Dibenz[a h]anthracene	<0.05 ug/g	78	20-150
Fluoranthene	<0.05 ug/g	72	20-150
Fluorene	<0.05 ug/g	65	20-150
Indeno[1 2 3-cd]pyrene	<0.05 ug/g	75	20-150
Naphthalene	<0.05 ug/g	59	20-150
Phenanthrene	<0.05 ug/g	71	20-150
Pyrene	<0.05 ug/g	70	20-150
<b>Run No</b> 260088 <b>Analysis Date</b> 2013-10-29 <b>Method</b> M SM3120B-3050B			
Boron (total)	<10 ug/g	82	
<b>Run No</b> 260093 <b>Analysis Date</b> 2013-10-29 <b>Method</b> M SM3112B-3500B			
Mercury	<0.1 ug/g	87	70-130
<b>Run No</b> 260103 <b>Analysis Date</b> 2013-10-28 <b>Method</b> Ag Soil			
Electrical Conductivity			80-120
pH - CaCl2			90-110
<b>Run No</b> 260104 <b>Analysis Date</b> 2013-10-28 <b>Method</b> M US EPA			
Chromium VI	<0.50 ug/g		65-135
<b>Run No</b> 260108 <b>Analysis Date</b> 2013-10-29 <b>Method</b> Boron HWE			

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### QC Summary

Analyte	Blank	QC % Rec	QC Limits
Boron (Hot Water Soluble)	<0.5 ug/g	96	70-130
<b>Run No</b> 260136 <b>Analysis Date</b> 2013-10-29 <b>Method</b> V 8260B			
Tetrachloroethane, 1,1,1,2-	<0.05 ug/g	110	80-120
Trichloroethane, 1,1,1-	<0.05 ug/g	115	80-120
Tetrachloroethane, 1,1,2,2-	<0.05 ug/g	89	80-120
Trichloroethane, 1,1,2-	<0.05 ug/g	86	80-120
Dichloroethane, 1,1-	<0.05 ug/g	118	80-120
Dichloroethylene, 1,1-	<0.05 ug/g	117	80-120
Dichlorobenzene, 1,2-	<0.05 ug/g	114	80-120
Dichloroethane, 1,2-	<0.05 ug/g	116	80-120
1,2-dichloroethane-d4	100 %	106	
Dichloropropane, 1,2-	<0.05 ug/g	114	80-120
Dichlorobenzene, 1,3-	<0.05 ug/g	99	80-120
Dichlorobenzene, 1,4-	<0.05 ug/g	96	80-120
Benzene	<0.02 ug/g	117	80-120
Bromodichloromethane	<0.05 ug/g	115	80-120
Bromoform	<0.05 ug/g	81	80-100

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### QC Summary

Analyte	Blank	QC % Rec	QC Limits
Dichloroethylene, 1,2-cis-	<0.05 ug/g	118	80-120
Dichloropropene,1,3-cis-	<0.05 ug/g	84	80-120
Carbon Tetrachloride	<0.05 ug/g	116	80-120
Chloroform	<0.05 ug/g	112	80-120
Dichlorodifluoromethane	<0.05 ug/g	98	70-130
Methylene Chloride	<0.05 ug/g	83	70-130
Ethylbenzene	<0.05 ug/g	116	80-120
Ethylene dibromide	<0.05 ug/g	85	80-120
Hexane (n)	<0.05 ug/g	114	70-130
m/p-xylene	<0.05 ug/g	119	80-120
Chlorobenzene	<0.05 ug/g	88	80-120
o-xylene	<0.05 ug/g	117	80-120
Styrene	<0.05 ug/g	115	80-120
Dichloroethylene, 1,2-trans-	<0.05 ug/g	108	80-120
Dichloropropene,1,3-trans-	<0.05 ug/g	107	80-120
Tetrachloroethylene	<0.05 ug/g	93	80-120
Toluene	<0.20 ug/g	117	80-120

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### QC Summary

Analyte	Blank	QC % Rec	QC Limits
Toluene-d8	103 %	103	
Trichloroethylene	<0.05 ug/g	117	80-120
Trichlorofluoromethane	<0.05 ug/g	116	70-130
Vinyl Chloride	<0.02 ug/g	105	80-120
<b>Run No</b> 260147 <b>Analysis Date</b> 2013-10-30 <b>Method</b> V 8260B			
Dichloropropene,1,3-			
Acetone	<0.50 ug/g	118	70-130
Methyl Ethyl Ketone	<0.50 ug/g	112	70-130
Methyl Isobutyl Ketone	<0.50 ug/g	97	70-130
Methyl tert-Butyl Ether (MTBE)	<0.05 ug/g	106	70-130
Xylene Mixture			
<b>Run No</b> 260152 <b>Analysis Date</b> 2013-10-30 <b>Method</b> CCME			
Petroleum Hydrocarbons F2	<10 ug/g	80	50-120
Petroleum Hydrocarbons F3	<20 ug/g	80	50-120
Petroleum Hydrocarbons F4	<20 ug/g	80	50-120
Moisture	<0.1 %	100	80-120
<b>Run No</b> 260153 <b>Analysis Date</b> 2013-10-30 <b>Method</b> CCME			

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**QC Summary**

Analyte	Blank	QC % Rec	QC Limits
Petroleum Hydrocarbons F1	<10 ug/g	98	80-120
Petroleum Hydrocarbons F1-BTEX			
<b>Run No</b> 260174 <b>Analysis Date</b> 2013-10-30 <b>Method</b> C SM4500-CNC			
Cyanide (CN-)	<0.03 ug/g	87	75-125

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Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO  
= Interim Provincial Water Quality Objective, TDR = Typical Desired Range



# CHAIN OF CUSTODY

175640

- ☐ 146 Colonnade Rd., Unit 8, Ottawa, ON K2E 7Y1 Ph: (613) 727-5692 Fax: (613) 727-5222  
☐ 608 Norris Court, Kingston, ON K7P 2R9 Ph: (613) 634-9307 Fax: (613) 634-9308  
☐ 380 Vansickle Rd., Unit 630, St. Catharines, ON L2R 6P7 Ph: (905) 680-8887 Fax: (905) 680-4256  
☐ 2395 Speakman Drive, Mississauga, ON, L5K 1B3 Phone: (905) 822-4111 Fax: (905) 823-1446

## LABORATORY USE ONLY

Report #: 1323765

<b>Report Information*:</b> Client: <u>Peter van Driel</u> Contact: <u>Peter van Driel</u> Address: <u>72 Victoria St. S. Suite 100</u> <u>Kitchener ON N2G-4V9</u> Email: <u>pvanriel@ecoplans.com</u> Phone: <u>519 741-8850</u> Project: <u>1412815</u>		<b>Criteria Required*:</b> <input type="checkbox"/> ODWSOG <input type="checkbox"/> Other, Specify: _____ <input type="checkbox"/> PWQO <input type="checkbox"/> Ont. Reg. 558 <input type="checkbox"/> CCME <input type="checkbox"/> Sanitary Sewer, City: _____ <input type="checkbox"/> Storm Sewer, City: _____ <input checked="" type="checkbox"/> Ont. Reg 153/04 Table # <u>2</u> <u>Coarse</u> /Fine, Surface/Subsurface Type: Com-Ind / Res-Park / Agri / GW / Other The sample results from this submission will form part of a formal Record of Site Condition (RSC) under O.Reg. 153/04 *: <u>YES</u> / NO Is this a drinking water sample? YES / <u>NO</u> If yes, complete the drinking water COC		<b>Additional Email/Fax:</b> 1. Email: <u>adamsc@mmmm.ca</u> 2. Email: <u>phayer@ecoplans.com</u> 3. Email: _____ Fax: <u>519 741-8854</u> <b>Report Format:</b> <input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> Excel <input type="checkbox"/> Other, Specify: _____ <b>Turnaround Time (rush surcharges may apply)*:</b> <input checked="" type="checkbox"/> 5 Business Days (Standard) <input type="checkbox"/> 3 Business Days (Rush) <input type="checkbox"/> 2 Business Days (Rush) <input type="checkbox"/> 1 Business Day (Rush) <input type="checkbox"/> Other (specify date): _____ <b>Notes:</b> <u>Pricing and Analysis as per Quote 130599</u>	
<b>Invoice Information*:</b> Invoice to the same as above? <u>Yes</u> No, or: Client: _____ Contact: _____ Address: _____ Email: _____ Phone: _____ Purchase Order #: _____ Exova Quote #: _____					

\* Indicates a required field

Please note that incomplete information may result in turnaround time delays.

Samples should be kept cool (4-10°C) from sampling time through drop-off at the laboratory.

Sample ID*	Date/Time Sampled*	Sample Matrix*	# Bottles	Sample Location	Parameters										Lab Use Only														
MW10-2	23-Oct-13 10AM	Soil	7		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	1068269														
MW11-2	23-Oct-13 4PM	↓	3		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	70														
MW11A-2	23-Oct-13 4:30PM	↓	1		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	71														
MW9B-2	23 Oct-13 12:00PM	↓	4		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	72														
Dupl MW9B-3	21 11		4		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	73														
															74														
Samples Relinquished By: <u>Peter van Driel</u>					Date/Time: <u>Oct 24/13 5:00AM</u>					Samples Received By: _____					Date/Time: _____					Temperature: <u>90</u>					Condition: _____				
Samples Relinquished By: _____					Date/Time: _____					Samples Received By: <u>KU</u>					Date/Time: <u>24/10/2013</u>					Page # _____ of _____									

Client: MMM Group Limited  
72 Victoria Street, Suite 100  
Kitchener, ON  
N2G 4Y9  
Attention: Peter van Driel  
PO#:  
Invoice to: MMM Group Limited

Report Number: 1324044  
Date Submitted: 2013-10-30  
Date Reported: 2013-11-07  
Project: 1412815  
COC #: 175641

Page 1 of 17

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**Dear Peter van Driel:**

**Please find attached the analytical results for your samples. If you have any questions regarding this report, please do not hesitate to call (613-727-5692).**

Report Comments:

APPROVAL: \_\_\_\_\_

Lorna Wilson  
Laboratory Supervisor, Inorganics

APPROVAL: \_\_\_\_\_

Charlie (Long) Qu  
Laboratory Supervisor, Organics

Exova (Ottawa) is certified and accredited for specific parameters by:

CALA, Canadian Association for Laboratory Accreditation (to ISO 17025), OMAFRA, Ontario Ministry of Agriculture, Food and Rural Affairs (for farm soils), Licensed by Ontario MOE for specific tests in drinking water.

Exova (Mississauga) is certified and accredited for specific parameters by:

SCC, Standards Council of Canada (to ISO 17025)

Please note: Field data, where presented on the report, has been provided by the client and is presented for informational purposes only.

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					Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1069237 Groundwater  2013-10-29 MW9A	1069238 Groundwater  2013-10-28 MW9B	1069239 Groundwater  2013-10-28 MW10	1069240 Groundwater  2013-10-28 MW11
Group	Analyte	MRL	Units	Guideline					
Inorganics	Antimony	0.5	ug/L	STD-6	<0.5	<0.5	0.5	<0.5	
	Arsenic	1	ug/L	STD-25	<1			<1	
		10	ug/L	STD-25		<10	<10		
	Barium	10	ug/L	STD-1000	360	180	380	410	
	Beryllium	0.5	ug/L	STD-4	<0.5	<0.5	<0.5	<0.5	
	Boron (total)	10	ug/L	STD-5000	400	110	220	80	
	Cadmium	0.1	ug/L	STD-2.7	<0.1	<0.1	<0.1	<0.1	
	Chromium Total	1	ug/L	STD-50	<1	3	3	3	
	Cobalt	0.2	ug/L	STD-3.8	0.6	4.0*	3.4	1.6	
	Copper	1	ug/L	STD-87	<1	5	4	2	
	Cyanide (CN-)	5	ug/L	STD-66	<5	<5	<5	<5	
	Lead	1	ug/L	STD-10	<1	<1	<1	<1	
	Mercury	0.1	ug/L	STD-0.29	<0.1	<0.1	<0.1	<0.1	
	Molybdenum	5	ug/L	STD-70	<5	<5	10	5	
	Nickel	5	ug/L	STD-100	<5	17	21	11	
	Selenium	1	ug/L	STD-10	<1	<1	<1	<1	
	Silver	0.1	ug/L	STD-1.5	<0.1	0.4	<0.1	<0.1	
	Sodium	2000	ug/L	STD-490000	370000	3590000*	2110000*	1540000*	
	Thallium	0.1	ug/L	STD-2	<0.1	<0.1	0.2	0.2	
	Uranium	1	ug/L	STD-20	2	3	5	1	
	Vanadium	1	ug/L	STD-6.2	<1	<1	<1	<1	
Zinc	10	ug/L	STD-1100	<10	<10	40	<10		
Misc/Others	Chloride	1	ug/L	STD-790000	703000				
		1000	ug/L	STD-790000		5530000*	3720000*	2544000*	
	Conductivity	5	uS/cm		2570	17200	12300	8740	
	pH	1.00			7.69	7.50	7.38	7.57	

Guideline = O.Reg 153-T2-Groundwater

\* = Guideline Exceedence

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Project: 1412815  
COC #: 175641

					Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1069237 Groundwater  2013-10-29 MW9A	1069238 Groundwater  2013-10-28 MW9B	1069239 Groundwater  2013-10-28 MW10	1069240 Groundwater  2013-10-28 MW11
Group	Analyte	MRL	Units	Guideline					
Petroleum Hydrocarbons	Petroleum Hydrocarbons F1	100	ug/L	STD-750		<100	<100	<100	<100
	Petroleum Hydrocarbons F1-BTEX	100	ug/L			<100	<100	<100	<100
	Petroleum Hydrocarbons F2	100	ug/L	STD-150		<100	<100	<100	<100
	Petroleum Hydrocarbons F3	200	ug/L	STD-500		<200	600*	200	<200
	Petroleum Hydrocarbons F4	200	ug/L	STD-500		<200	<200	<200	<200
Semi-Volatiles	Acenaphthene	0.1	ug/L	STD-4.1		<0.1	<0.1	<0.1	<0.1
	Acenaphthylene	0.1	ug/L	STD-1		<0.1	<0.1	<0.1	<0.1
	Anthracene	0.1	ug/L	STD-2.4		<0.1	<0.1	<0.1	<0.1
	Benz[a]anthracene	0.1	ug/L	STD-1		<0.1	<0.1	<0.1	<0.1
	Benzo[a]pyrene	0.01	ug/L	STD-0.01		<0.01	0.01	<0.01	<0.01
	Benzo[b]fluoranthene	0.05	ug/L	STD-0.1		<0.05	<0.05	<0.05	<0.05
	Benzo[ghi]perylene	0.1	ug/L	STD-0.2		<0.1	<0.1	<0.1	<0.1
	Benzo[k]fluoranthene	0.05	ug/L	STD-0.1		<0.05	<0.05	<0.05	<0.05
	Chrysene	0.05	ug/L	STD-0.1		<0.05	<0.05	<0.05	<0.05
	Dibenz[a h]anthracene	0.1	ug/L	STD-0.2		<0.1	<0.1	<0.1	<0.1
	Fluoranthene	0.1	ug/L	STD-0.41		<0.1	<0.1	<0.1	<0.1
	Fluorene	0.1	ug/L	STD-120		<0.1	<0.1	<0.1	<0.1
	Indeno[1 2 3-cd]pyrene	0.1	ug/L	STD-0.2		<0.1	<0.1	<0.1	<0.1
	Methlynaphthalene, 1-	0.1	ug/L	STD-3.2		<0.1	<0.1	<0.1	<0.1
	Methlynaphthalene, 2-	0.1	ug/L	STD-3.2		<0.1	<0.1	<0.1	<0.1
	Naphthalene	0.1	ug/L	STD-11		<0.1	<0.1	<0.1	<0.1
	Phenanthrene	0.1	ug/L	STD-1		<0.1	<0.1	<0.1	<0.1
	Pyrene	0.1	ug/L	STD-4.1		<0.1	<0.1	<0.1	<0.1
Subcontracted	Chromium VI	10	ug/L	STD-25		<10	<10	<10	<10
VOCs	Acetone	50	ug/L	STD-2700		<50	<50	<50	<50
	Benzene	0.5	ug/L	STD-5		<0.5	<0.5	<0.5	<0.5

Guideline = O.Reg 153-T2-Groundwater

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Client: MMM Group Limited  
72 Victoria Street, Suite 100  
Kitchener, ON  
N2G 4Y9  
Attention: Peter van Driel  
PO#:   
Invoice to: MMM Group Limited

Report Number: 1324044  
Date Submitted: 2013-10-30  
Date Reported: 2013-11-07  
Project: 1412815  
COC #: 175641

Group	Analyte	MRL	Units	Guideline	Lab I.D.	Sample Matrix	Sample Type	Sampling Date	Sample I.D.
					1069237	1069238	1069239	1069240	
					Groundwater	Groundwater	Groundwater	Groundwater	
					2013-10-29	2013-10-28	2013-10-28	2013-10-28	
					MW9A	MW9B	MW10	MW11	
VOCs	Bromodichloromethane	0.3	ug/L	STD-16	1.0	<0.3	<0.3	<0.3	
	Bromoform	0.4	ug/L	STD-25	<0.4	<0.4	<0.4	<0.4	
	Bromomethane	0.5	ug/L	STD-0.89	<0.5	<0.5	<0.5	<0.5	
	c-1,3-Dichloropropylene	0.2	ug/L		<0.2	<0.2	<0.2	<0.2	
	Carbon Tetrachloride	0.2	ug/L	STD-0.79	<0.2	<0.2	<0.2	<0.2	
	Chlorobenzene	0.2	ug/L	STD-30	<0.2	<0.2	<0.2	<0.2	
	Chloroform	0.5	ug/L	STD-2.4	7.5*	<0.5	<0.5	<0.5	
	Dibromochloromethane	0.3	ug/L	STD-25	<0.3	<0.3	<0.3	<0.3	
	Dichlorobenzene, 1,2-	0.4	ug/L	STD-3	<0.4	<0.4	<0.4	<0.4	
	Dichlorobenzene, 1,3-	0.4	ug/L	STD-59	<0.4	<0.4	<0.4	<0.4	
	Dichlorobenzene, 1,4-	0.4	ug/L	STD-1	<0.4	<0.4	<0.4	<0.4	
	Dichlorodifluoromethane	0.5	ug/L	STD-590	<0.5	<0.5	<0.5	<0.5	
	Dichloroethane, 1,1-	0.4	ug/L	STD-5	<0.4	<0.4	<0.4	<0.4	
	Dichloroethane, 1,2-	0.2	ug/L	STD-1.6	<0.2	<0.2	<0.2	<0.2	
	Dichloroethylene, 1,1-	0.5	ug/L	STD-1.6	<0.5	<0.5	<0.5	<0.5	
	Dichloroethylene, 1,2-cis-	0.4	ug/L	STD-1.6	<0.4	<0.4	<0.4	<0.4	
	Dichloroethylene, 1,2-trans-	0.4	ug/L	STD-1.6	<0.4	<0.4	<0.4	<0.4	
	Dichloropropane, 1,2-	0.5	ug/L	STD-5	<0.5	<0.5	<0.5	<0.5	
	Ethylbenzene	0.5	ug/L	STD-2.4	<0.5	<0.5	<0.5	<0.5	
	Ethylene dibromide	0.2	ug/L	STD-0.2	<0.2	<0.2	<0.2	<0.2	
	Hexane (n)	5	ug/L	STD-51	<5	<5	<5	<5	
	m/p-xylene	0.5	ug/L		<0.5	<0.5	<0.5	<0.5	
	Methyl Ethyl Ketone	10	ug/L	STD-1800	<10	<10	<10	<10	
	Methyl Isobutyl Ketone	10	ug/L	STD-640	<10	<10	<10	<10	
	Methyl tert-Butyl Ether (MTBE)	10	ug/L	STD-15	<10	<10	<10	<10	
	Methylene Chloride	4.0	ug/L	STD-50	<4.0	<4.0	<4.0	<4.0	

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Client: MMM Group Limited  
72 Victoria Street, Suite 100  
Kitchener, ON  
N2G 4Y9  
Attention: Peter van Driel  
PO#:   
Invoice to: MMM Group Limited

Report Number: 1324044  
Date Submitted: 2013-10-30  
Date Reported: 2013-11-07  
Project: 1412815  
COC #: 175641

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.			
					1069237 Groundwater  2013-10-29 MW9A	1069238 Groundwater  2013-10-28 MW9B	1069239 Groundwater  2013-10-28 MW10	1069240 Groundwater  2013-10-28 MW11
VOCs	o-xylene	0.5	ug/L		<0.5	<0.5	<0.5	<0.5
	Styrene	0.5	ug/L	STD-5.4	<0.5	<0.5	<0.5	<0.5
	t-1,3-Dichloropropylene	0.2	ug/L		<0.2	<0.2	<0.2	<0.2
	Tetrachloroethane, 1,1,1,2-	0.5	ug/L	STD-1.1	<0.5	<0.5	<0.5	<0.5
	Tetrachloroethane, 1,1,2,2-	0.5	ug/L	STD-1	<0.5	<0.5	<0.5	<0.5
	Tetrachloroethylene	0.3	ug/L	STD-1.6	<0.3	<0.3	<0.3	<0.3
	Toluene	0.5	ug/L	STD-24	<0.5	<0.5	<0.5	<0.5
	Trichloroethane, 1,1,1-	0.4	ug/L	STD-200	<0.4	<0.4	0.5	<0.4
	Trichloroethane, 1,1,2-	0.4	ug/L	STD-4.7	<0.4	<0.4	<0.4	<0.4
	Trichloroethylene	0.3	ug/L	STD-1.6	<0.3	<0.3	<0.3	<0.3
	Trichlorofluoromethane	0.5	ug/L	STD-150	<0.5	<0.5	<0.5	<0.5
	Vinyl Chloride	0.2	ug/L	STD-0.5	<0.2	<0.2	<0.2	<0.2
	Xylene Mixture	1.0	ug/L	STD-300	<1.0	<1.0	<1.0	<1.0
VOCs Surrogates (%REC)	1,2-dichloroethane-d4	0	%		100	102	96	99
	4-bromofluorobenzene	0	%		98	97	93	96
	Toluene-d8	0	%		99	98	96	98

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Client: MMM Group Limited  
72 Victoria Street, Suite 100  
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N2G 4Y9  
Attention: Peter van Driel  
PO#:   
Invoice to: MMM Group Limited

Report Number: 1324044  
Date Submitted: 2013-10-30  
Date Reported: 2013-11-07  
Project: 1412815  
COC #: 175641

					Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1069241 Groundwater  2013-10-28 DUP 1	1069242 Groundwater  2013-10-29 Dup 2	1069243 Groundwater  2013-10-29 Field Blank
Group	Analyte	MRL	Units	Guideline				
Inorganics	Antimony	0.5	ug/L	STD-6		<0.5	<0.5	
	Arsenic	1	ug/L	STD-25			<1	
		10	ug/L	STD-25		<10		
	Barium	10	ug/L	STD-1000		180	370	
	Beryllium	0.5	ug/L	STD-4		<0.5	<0.5	
	Boron (total)	10	ug/L	STD-5000		110	390	
	Cadmium	0.1	ug/L	STD-2.7		<0.1	<0.1	
	Chromium Total	1	ug/L	STD-50		2	1	
	Cobalt	0.2	ug/L	STD-3.8		3.3	0.6	
	Copper	1	ug/L	STD-87		6	<1	
	Cyanide (CN-)	5	ug/L	STD-66			<5	
	Lead	1	ug/L	STD-10		<1	<1	
	Mercury	0.1	ug/L	STD-0.29		<0.1	<0.1	
	Molybdenum	5	ug/L	STD-70		<5	<5	
	Nickel	5	ug/L	STD-100		17	<5	
	Selenium	1	ug/L	STD-10		<1	<1	
	Silver	0.1	ug/L	STD-1.5		0.1	<0.1	
	Sodium	2000	ug/L	STD-490000		3460000*	307000	
	Thallium	0.1	ug/L	STD-2		<0.1	<0.1	
	Uranium	1	ug/L	STD-20		2	2	
Vanadium	1	ug/L	STD-6.2		<1	<1		
Zinc	10	ug/L	STD-1100		<10	<10		
Misc/Others	Chloride	1000	ug/L	STD-790000		5400000*	560000	
	Conductivity	5	uS/cm			17400	2080	
	pH	1.00				7.55	7.86	
Petroleum Hydrocarbo	Petroleum Hydrocarbons F1	100	ug/L	STD-750		<100		

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Client: MMM Group Limited  
72 Victoria Street, Suite 100  
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Attention: Peter van Driel  
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Invoice to: MMM Group Limited

Report Number: 1324044  
Date Submitted: 2013-10-30  
Date Reported: 2013-11-07  
Project: 1412815  
COC #: 175641

					Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1069241 Groundwater  2013-10-28 DUP 1	1069242 Groundwater  2013-10-29 Dup 2	1069243 Groundwater  2013-10-29 Field Blank
Group	Analyte	MRL	Units	Guideline				
Petroleum Hydrocarbons	Petroleum Hydrocarbons F1-BTEX	100	ug/L			<100		
	Petroleum Hydrocarbons F2	100	ug/L	STD-150		<100		
	Petroleum Hydrocarbons F3	200	ug/L	STD-500		310		
	Petroleum Hydrocarbons F4	200	ug/L	STD-500		<200		
Semi-Volatiles	Acenaphthene	0.1	ug/L	STD-4.1		<0.1		
	Acenaphthylene	0.1	ug/L	STD-1		<0.1		
	Anthracene	0.1	ug/L	STD-2.4		<0.1		
	Benz[a]anthracene	0.1	ug/L	STD-1		<0.1		
	Benzo[a]pyrene	0.01	ug/L	STD-0.01		<0.01		
	Benzo[b]fluoranthene	0.05	ug/L	STD-0.1		<0.05		
	Benzo[ghi]perylene	0.1	ug/L	STD-0.2		<0.1		
	Benzo[k]fluoranthene	0.05	ug/L	STD-0.1		<0.05		
	Chrysene	0.05	ug/L	STD-0.1		<0.05		
	Dibenz[a h]anthracene	0.1	ug/L	STD-0.2		<0.1		
	Fluoranthene	0.1	ug/L	STD-0.41		<0.1		
	Fluorene	0.1	ug/L	STD-120		<0.1		
	Indeno[1 2 3-cd]pyrene	0.1	ug/L	STD-0.2		<0.1		
	Methlynaphthalene, 1-	0.1	ug/L	STD-3.2		<0.1		
	Methlynaphthalene, 2-	0.1	ug/L	STD-3.2		<0.1		
	Naphthalene	0.1	ug/L	STD-11		<0.1		
	Phenanthrene	0.1	ug/L	STD-1		<0.1		
	Pyrene	0.1	ug/L	STD-4.1		<0.1		
Subcontracted	Chromium VI	10	ug/L	STD-25		<10		
VOCs	Acetone	50	ug/L	STD-2700		<50		<50
	Benzene	0.5	ug/L	STD-5		<0.5		<0.5
	Bromodichloromethane	0.3	ug/L	STD-16		<0.3		<0.3

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Client: MMM Group Limited  
72 Victoria Street, Suite 100  
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N2G 4Y9  
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Invoice to: MMM Group Limited

Report Number: 1324044  
Date Submitted: 2013-10-30  
Date Reported: 2013-11-07  
Project: 1412815  
COC #: 175641

					1069241 Groundwater  2013-10-28 DUP 1	1069242 Groundwater  2013-10-29 Dup 2	1069243 Groundwater  2013-10-29 Field Blank
Group	Analyte	MRL	Units	Guideline			
VOCs	Bromoform	0.4	ug/L	STD-25	<0.4		<0.4
	Bromomethane	0.5	ug/L	STD-0.89	<0.5		<0.5
	c-1,3-Dichloropropylene	0.2	ug/L		<0.2		<0.2
	Carbon Tetrachloride	0.2	ug/L	STD-0.79	<0.2		<0.2
	Chlorobenzene	0.2	ug/L	STD-30	<0.2		<0.2
	Chloroform	0.5	ug/L	STD-2.4	<0.5		<0.5
	Dibromochloromethane	0.3	ug/L	STD-25	<0.3		<0.3
	Dichlorobenzene, 1,2-	0.4	ug/L	STD-3	<0.4		<0.4
	Dichlorobenzene, 1,3-	0.4	ug/L	STD-59	<0.4		<0.4
	Dichlorobenzene, 1,4-	0.4	ug/L	STD-1	<0.4		<0.4
	Dichlorodifluoromethane	0.5	ug/L	STD-590	<0.5		<0.5
	Dichloroethane, 1,1-	0.4	ug/L	STD-5	<0.4		<0.4
	Dichloroethane, 1,2-	0.2	ug/L	STD-1.6	<0.2		<0.2
	Dichloroethylene, 1,1-	0.5	ug/L	STD-1.6	<0.5		<0.5
	Dichloroethylene, 1,2-cis-	0.4	ug/L	STD-1.6	<0.4		<0.4
	Dichloroethylene, 1,2-trans-	0.4	ug/L	STD-1.6	<0.4		<0.4
	Dichloropropane, 1,2-	0.5	ug/L	STD-5	<0.5		<0.5
	Ethylbenzene	0.5	ug/L	STD-2.4	<0.5		<0.5
	Ethylene dibromide	0.2	ug/L	STD-0.2	<0.2		<0.2
	Hexane (n)	5	ug/L	STD-51	<5		<5
	m/p-xylene	0.5	ug/L		<0.5		<0.5
	Methyl Ethyl Ketone	10	ug/L	STD-1800	<10		<10
	Methyl Isobutyl Ketone	10	ug/L	STD-640	<10		<10
	Methyl tert-Butyl Ether (MTBE)	10	ug/L	STD-15	<10		<10
	Methylene Chloride	4.0	ug/L	STD-50	<4.0		<4.0
	o-xylene	0.5	ug/L		<0.5		<0.5

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Client: MMM Group Limited  
 72 Victoria Street, Suite 100  
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 N2G 4Y9  
 Attention: Peter van Driel  
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 Invoice to: MMM Group Limited

Report Number: 1324044  
 Date Submitted: 2013-10-30  
 Date Reported: 2013-11-07  
 Project: 1412815  
 COC #: 175641

					Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1069241 Groundwater  2013-10-28 DUP 1	1069242 Groundwater  2013-10-29 Dup 2	1069243 Groundwater  2013-10-29 Field Blank
Group	Analyte	MRL	Units	Guideline				
VOCs	Styrene	0.5	ug/L	STD-5.4		<0.5		<0.5
	t-1,3-Dichloropropylene	0.2	ug/L			<0.2		<0.2
	Tetrachloroethane, 1,1,1,2-	0.5	ug/L	STD-1.1		<0.5		<0.5
	Tetrachloroethane, 1,1,2,2-	0.5	ug/L	STD-1		<0.5		<0.5
	Tetrachloroethylene	0.3	ug/L	STD-1.6		<0.3		<0.3
	Toluene	0.5	ug/L	STD-24		<0.5		<0.5
	Trichloroethane, 1,1,1-	0.4	ug/L	STD-200		<0.4		<0.4
	Trichloroethane, 1,1,2-	0.4	ug/L	STD-4.7		<0.4		<0.4
	Trichloroethylene	0.3	ug/L	STD-1.6		<0.3		<0.3
	Trichlorofluoromethane	0.5	ug/L	STD-150		<0.5		<0.5
	Vinyl Chloride	0.2	ug/L	STD-0.5		<0.2		<0.2
	Xylene Mixture	1.0	ug/L	STD-300		<1.0		<1.0
VOCs Surrogates (%REC)	1,2-dichloroethane-d4	0	%			96		100
	4-bromofluorobenzene	0	%			97		97
	Toluene-d8	0	%			98		97

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Client: MMM Group Limited  
72 Victoria Street, Suite 100  
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Attention: Peter van Driel  
PO#:   
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Report Number: 1324044  
Date Submitted: 2013-10-30  
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COC #: 175641

## QC Summary

Analyte	Blank	QC % Rec	QC Limits
<b>Run No</b> 0 <b>Analysis Date</b> 2013-11-01 <b>Method</b> V 8260B			
Xylene Mixture			
<b>Run No</b> 260217 <b>Analysis Date</b> 2013-11-05 <b>Method</b> SM 4110C			
Chloride	<1 ug/L	95	90-110
<b>Run No</b> 260259 <b>Analysis Date</b> 2013-10-31 <b>Method</b> O CCME Reg 153			
Petroleum Hydrocarbons F1	<100 ug/L	90	80-120
Petroleum Hydrocarbons F1-BTEX			
<b>Run No</b> 260297 <b>Analysis Date</b> 2013-10-31 <b>Method</b> P 8270			
Methlynaphthalene, 1-	<0.1 ug/L	60	20-140
Methlynaphthalene, 2-	<0.1 ug/L	70	20-140
Acenaphthene	<0.1 ug/L	64	20-140
Acenaphthylene	<0.1 ug/L	62	20-140
Anthracene	<0.1 ug/L	70	20-140
Benz[a]anthracene	<0.1 ug/L	68	20-140
Benzo[a]pyrene	<0.01 ug/L	75	20-140

Guideline = O.Reg 153-T2-Groundwater

\* = Guideline Exceedence

\*\* - Analysis completed in Mississauga

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Client: MMM Group Limited  
72 Victoria Street, Suite 100  
Kitchener, ON  
N2G 4Y9  
Attention: Peter van Driel  
PO#:   
Invoice to: MMM Group Limited

Report Number: 1324044  
Date Submitted: 2013-10-30  
Date Reported: 2013-11-07  
Project: 1412815  
COC #: 175641

### QC Summary

Analyte	Blank	QC % Rec	QC Limits
Benzo[b]fluoranthene	<0.05 ug/L	60	20-140
Benzo[ghi]perylene	<0.1 ug/L	78	20-140
Benzo[k]fluoranthene	<0.05 ug/L	119	20-140
Chrysene	<0.05 ug/L	71	20-140
Dibenz[a h]anthracene	<0.1 ug/L	78	20-140
Fluoranthene	<0.1 ug/L	72	20-140
Fluorene	<0.1 ug/L	64	20-140
Indeno[1 2 3-cd]pyrene	<0.1 ug/L	76	20-140
Naphthalene	<0.1 ug/L	58	20-140
Phenanthrene	<0.1 ug/L	72	20-140
Pyrene	<0.1 ug/L	70	20-140
<b>Run No</b> 260359 <b>Analysis Date</b> 2013-10-31 <b>Method</b> V 8260B			
Tetrachloroethane, 1,1,1,2-	<0.5 ug/L	105	80-120
Trichloroethane, 1,1,1,-	<0.4 ug/L	90	80-120
Tetrachloroethane, 1,1,2,2-	<0.5 ug/L	96	80-120
Trichloroethane, 1,1,2,-	<0.4 ug/L	102	80-120
Dichloroethane, 1,1,-	<0.4 ug/L	92	80-120

**Guideline = O.Reg 153-T2-Groundwater**

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Date Submitted: 2013-10-30  
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COC #: 175641

### QC Summary

Analyte	Blank	QC % Rec	QC Limits
Dichloroethylene, 1,1-	<0.5 ug/L	108	80-120
Dichlorobenzene, 1,2-	<0.4 ug/L	100	80-120
Dichloroethane, 1,2-	<0.2 ug/L	108	80-120
1,2-dichloroethane-d4	102 %	84	80-120
Dichloropropane, 1,2-	<0.5 ug/L	110	80-120
Dichlorobenzene, 1,3-	<0.4 ug/L	103	80-120
Dichlorobenzene, 1,4-	<0.4 ug/L	107	80-120
Benzene	<0.5 ug/L	111	80-120
Bromodichloromethane	<0.3 ug/L	95	80-120
Bromoform	<0.4 ug/L	87	80-120
Bromomethane	<0.5 ug/L	107	70-130
Dichloroethylene, 1,2-cis-	<0.4 ug/L	106	80-120
Dichloropropene, 1,3-cis-	<0.2 ug/L	91	80-120
Carbon Tetrachloride	<0.2 ug/L	91	80-120
Chloroform	<0.5 ug/L	103	80-120
Dibromochloromethane	<0.3 ug/L	91	80-120
Dichlorodifluoromethane	<0.5 ug/L	110	70-130

Guideline = O.Reg 153-T2-Groundwater

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Report Number: 1324044  
 Date Submitted: 2013-10-30  
 Date Reported: 2013-11-07  
 Project: 1412815  
 COC #: 175641

### QC Summary

Analyte	Blank	QC % Rec	QC Limits
Methylene Chloride	<4.0 ug/L	110	60-200
Ethylbenzene	<0.5 ug/L	107	80-120
Ethylene dibromide	<0.2 ug/L	97	80-120
Hexane (n)	<5 ug/L	110	70-130
m/p-xylene	<0.5 ug/L	113	80-120
Chlorobenzene	<0.2 ug/L	101	80-120
o-xylene	<0.5 ug/L	111	80-120
Styrene	<0.5 ug/L	102	80-120
Dichloroethylene, 1,2-trans-	<0.4 ug/L	111	80-120
Dichloropropene, 1,3-trans-	<0.2 ug/L	93	80-120
Tetrachloroethylene	<0.3 ug/L	109	80-120
Toluene	<0.5 ug/L	109	80-120
Toluene-d8	101 %	98	80-120
Trichloroethylene	<0.3 ug/L	89	80-120
Trichlorofluoromethane	<0.5 ug/L	111	80-120
Vinyl Chloride	<0.2 ug/L	116	70-130
<b>Run No</b> 260380 <b>Analysis Date</b> 2013-11-01 <b>Method</b> C SM4500-CNC			

**Guideline = O.Reg 153-T2-Groundwater**

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COC #: 175641

### QC Summary

Analyte	Blank	QC % Rec	QC Limits
Cyanide (CN-)	<5 ug/L	91	75-125
<b>Run No</b> 260405 <b>Analysis Date</b> 2013-11-01 <b>Method</b> M SM3112B-3500B			
Mercury	<0.1 ug/L	97	70-130
<b>Run No</b> 260420 <b>Analysis Date</b> 2013-11-04 <b>Method</b> O CCME Reg 153			
Petroleum Hydrocarbons F2	<100 ug/L	61	50-120
Petroleum Hydrocarbons F3	<200 ug/L	61	50-120
Petroleum Hydrocarbons F4	<200 ug/L	61	50-120
<b>Run No</b> 260447 <b>Analysis Date</b> 2013-11-04 <b>Method</b> M SM3120B-3500C			
Sodium	<2000 ug/L	100	80-120
<b>Run No</b> 260461 <b>Analysis Date</b> 2013-11-04 <b>Method</b> SM 4110C			
Chloride	<1000 ug/L	100	90-112
<b>Run No</b> 260467 <b>Analysis Date</b> 2013-11-05 <b>Method</b> EPA 200.8			
Silver	<0.1 ug/L	98	89-111
Arsenic	<1 ug/L	103	81-119
Boron (total)	<10 ug/L	105	81-119
Barium	<10 ug/L	99	91-109
Beryllium	<0.5 ug/L	102	82-118

Guideline = O.Reg 153-T2-Groundwater

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Report Number: 1324044  
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### QC Summary

Analyte	Blank	QC % Rec	QC Limits
Cadmium	<0.1 ug/L	99	86-114
Cobalt	<0.2 ug/L	101	88-112
Chromium Total	<1 ug/L	101	89-111
Copper	<1 ug/L	101	86-114
Molybdenum	<5 ug/L	103	84-116
Nickel	<5 ug/L	104	92-108
Lead	<1 ug/L	99	89-111
Antimony	<0.5 ug/L	103	77-123
Selenium	<1 ug/L	103	77-123
Thallium	<0.1 ug/L	101	88-112
Uranium	<1 ug/L	97	87-113
Vanadium	<1 ug/L	104	88-112
Zinc	<10 ug/L	99	89-111
<b>Run No</b> 260476 <b>Analysis Date</b> 2013-11-04 <b>Method</b> C SM2510B			
Conductivity	<5 uS/cm	101	95-105
pH	6.40	100	90-110
<b>Run No</b> 260533 <b>Analysis Date</b> 2013-11-05 <b>Method</b> EPA 200.8			

Guideline = O.Reg 153-T2-Groundwater

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**QC Summary**

Analyte	Blank	QC % Rec	QC Limits
Silver	<0.1 ug/L	100	89-111
Arsenic	<1 ug/L	107	81-119
Boron (total)	<10 ug/L	99	81-119
Thallium	<0.1 ug/L	105	88-112
<b>Run No</b> 260540 <b>Analysis Date</b> 2013-11-06 <b>Method</b> O CCME Reg 153			
Petroleum Hydrocarbons F2	<100 ug/L	88	50-120
Petroleum Hydrocarbons F3	<200 ug/L	88	50-120
Petroleum Hydrocarbons F4	<200 ug/L	88	50-120
<b>Run No</b> 260564 <b>Analysis Date</b> 2013-11-06 <b>Method</b> V 8260B			
Acetone	<50 ug/L	119	80-120
Methyl Ethyl Ketone	<10 ug/L	93	80-120
Methyl Isobutyl Ketone	<10 ug/L	118	80-120
Methyl tert-Butyl Ether (MTBE)	<10 ug/L	116	80-120
<b>Run No</b> 260610 <b>Analysis Date</b> 2013-11-06 <b>Method</b> SUBCONTRACT P-INORG			
Chromium VI	<10 ug/L		

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COC #: 175641

---

### ***Sample Comment Summary***

Sample ID: 1069237	MW9A	Sample was subcontracted for Chromium (VI) analysis.
Sample ID: 1069238	MW9B	Arsenic MRL elevated due to matrix interference (dilution was done). Sample was subcontracted for Chromium (VI) analysis.
Sample ID: 1069239	MW10	Arsenic MRL elevated due to matrix interference (dilution was done). Sample was subcontracted for Chromium (VI) analysis.
Sample ID: 1069240	MW11	Sample was subcontracted for Chromium (VI) analysis.
Sample ID: 1069241	DUP 1	Arsenic MRL elevated due to matrix interference (dilution was done). Sample was subcontracted for Chromium (VI) analysis.

**Guideline = O.Reg 153-T2-Groundwater**

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# CHAIN OF CUSTODY

175641

- ☐ 146 Colonnade Rd., Unit 8, Ottawa, ON K2E 7Y1 Ph: (613) 727-5692 Fax: (613) 727-5222  
☐ 608 Norris Court, Kingston, ON K7P 2R9 Ph: (613) 634-9307 Fax: (613) 634-9308  
☐ 380 Vansickle Rd., Unit 630, St. Catharines, ON L2R 6P7 Ph: (905) 680-8887 Fax: (905) 680-4256  
☐ 2395 Speakman Drive, Mississauga, ON, L5K 1B3 Phone: (905) 822-4111 Fax: (905) 823-1446

## LABORATORY USE ONLY

Report #: 1324043

<b>Report Information*:</b> Client: <u>M M Group - Ecoplan</u> Contact: <u>Peter van Driel</u> Address: <u>72 Victoria St. S. Suite 100</u> <u>Kitchener ON N2G-4Y9</u> Email: <u>pvandriel@ecoplan.com</u> Phone: <u>519 741-8850</u> Project: <u>1412815</u> x2 L80		<b>Criteria Required*:</b> <input type="checkbox"/> ODWSOG <input type="checkbox"/> Other, Specify: _____ <input type="checkbox"/> PWQO <input type="checkbox"/> Ont. Reg. 558 <input type="checkbox"/> CCME <input checked="" type="checkbox"/> Sanitary Sewer, City: <u>Ottawa - Sample MWSA only</u> <input type="checkbox"/> Storm Sewer, City: _____ <input checked="" type="checkbox"/> Ont. Reg 153/04 → <u>All other samples</u> Table # _____, Coarse/Fine, Surface/Subsurface Type: Com-Ind / Res-Park / Agri / GW / Other The sample results from this submission will form part of a formal Record of Site Condition (RSC) under O.Reg. 153/04 *: <u>YES</u> / NO Is this a drinking water sample? YES (NO) <u>NO</u> If yes, complete the drinking water COC		<b>Additional Email/Fax:</b> 1. Email: <u>pvandriel@ecoplan.com</u> 2. Email: <u>adams@mm.ca</u> 3. Email: <u>phayes@ecoplan.com</u> Fax: <u>(519) 741-8854</u> <b>Report Format:</b> <input type="checkbox"/> PDF <input type="checkbox"/> Excel <input type="checkbox"/> Other, Specify: _____ <b>Turnaround Time (rush surcharges may apply)*:</b> <input checked="" type="checkbox"/> 5 Business Days (Standard) <input type="checkbox"/> 3 Business Days (Rush) <input type="checkbox"/> 2 Business Days (Rush) <input type="checkbox"/> 1 Business Day (Rush) <input type="checkbox"/> Other (specify date): _____ Notes: <u>ON ICE</u>	
<b>Invoice Information*:</b> Invoice to the same as above? <u>Yes</u> No, or: Client: _____ Contact: _____ Address: _____ Email: _____ Phone: _____ Purchase Order #: _____ Exova Quote #: _____					

\* Indicates a required field

Please note that incomplete information may result in turnaround time delays.

Samples should be kept cool (4-10°C) from sampling time through drop-off at the laboratory.

Sample ID*	Date/Time Sampled*	Sample Matrix*	# Bottles	Sample Location	Reg 153 VOCs	Reg 153 PAHs	FI-F4 Hydrocarbons	Ottawa Sewer Use See Q10	Lab Use Only	
MW5A	29-Oct-13 12:30 PM	GW	15		✓	✓	✓	✓	1069236	
MW9A	29-Oct-13 1:30 PM	GW	10		✓	✓	✓	✓		
MW9B	28-Oct-13 6:00 PM	GW	11		✓	✓	✓	✓		
MW10	28-Oct-13 6:20 PM	GW	11		✓	✓	✓	✓		
MW11	28-Oct-13 4:00 PM	GW	11		✓	✓	✓	✓		
Dup 1	28-Oct-13 6:10 PM	GW	11	Cont'd not fill bottle CN	✓	✓	✓	✓		
Dup 2	29-Oct-13 12:35 PM	GW	4		✓	✓	✓	✓		
<b>Field Blank</b>										
See Quote 130994 for Parameter Analyses										
Samples Relinquished By: <u>Peter van Driel</u>		Date/Time: <u>Oct 29/13 3:45 PM</u>		Samples Received By:		Date/Time:		Temperature: <u>12°</u>		Condition:
Samples Relinquished By:		Date/Time:		Samples Received By: <u>ICE</u>		Date/Time: <u>29/10 1545</u>		Page # _____ of _____		

Client: MMM Group Limited  
1145 Hunt Club Rd  
Ottawa, ON  
K1V 0Y3  
Attention: Mark Hudson  
PO#:  
Invoice to: MMM Groups Limited

Report Number: 1325264  
Date Submitted: 2013-11-14  
Date Reported: 2013-11-21  
Project: 770 Somerset  
COC #: 168344

Page 1 of 11

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**Dear Mark Hudson:**

**Please find attached the analytical results for your samples. If you have any questions regarding this report, please do not hesitate to call (613-727-5692).**

Report Comments:

APPROVAL: \_\_\_\_\_

Charlie (Long) Qu  
Laboratory Supervisor, Organics

Exova (Ottawa) is certified and accredited for specific parameters by:

CALA, Canadian Association for Laboratory Accreditation (to ISO 17025), OMAFRA, Ontario Ministry of Agriculture, Food and Rural Affairs (for farm soils), Licensed by Ontario MOE for specific tests in drinking water.

Exova (Mississauga) is certified and accredited for specific parameters by:

SCC, Standards Council of Canada (to ISO 17025)

Please note: Field data, where presented on the report, has been provided by the client and is presented for informational purposes only.



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Report Number: 1325264  
Date Submitted: 2013-11-14  
Date Reported: 2013-11-21  
Project: 770 Somerset  
COC #: 168344

Group	Analyte	MRL	Units	Guideline	Lab I.D.	Sample Matrix	Sample Type	Sampling Date	Sample I.D.
					1073000	1073001	1073002	1073003	
					Groundwater	Groundwater	Groundwater	Groundwater	
					2013-11-13	2013-11-13	2013-11-13	2013-11-13	
					MW9B	Dup 3	MW9A	Dup 4	
Petroleum Hydrocarbons	Petroleum Hydrocarbons F1	100	ug/L	STD-750	<100	<100			
	Petroleum Hydrocarbons F2	100	ug/L	STD-150	<100	<100			
	Petroleum Hydrocarbons F3	200	ug/L	STD-500	<200	1000*			
	Petroleum Hydrocarbons F4	200	ug/L	STD-500	<200	<200			
VOCs	Acetone	50	ug/L	STD-130000			<50	<50	
	Benzene	0.5	ug/L	STD-430			<0.5	<0.5	
	Bromodichloromethane	0.3	ug/L	STD-85000			<0.3	<0.3	
	Bromoform	0.4	ug/L	STD-770			<0.4	<0.4	
	Bromomethane	0.5	ug/L	STD-56			<0.5	<0.5	
	c-1,3-Dichloropropylene	0.2	ug/L				<0.2	<0.2	
	Carbon Tetrachloride	0.2	ug/L	STD-8.4			<0.2	<0.2	
	Chlorobenzene	0.2	ug/L	STD-630			<0.2	<0.2	
	Chloroform	0.5	ug/L	STD-22			2.4	2.4	
	Dibromochloromethane	0.3	ug/L	STD-82000			<0.3	<0.3	
	Dichlorobenzene, 1,2-	0.4	ug/L	STD-9600			<0.4	<0.4	
	Dichlorobenzene, 1,3-	0.4	ug/L	STD-9600			<0.4	<0.4	
	Dichlorobenzene, 1,4-	0.4	ug/L	STD-67			<0.4	<0.4	
	Dichlorodifluoromethane	0.5	ug/L	STD-4400			<0.5	<0.5	
	Dichloroethane, 1,1-	0.4	ug/L	STD-3100			<0.4	<0.4	
	Dichloroethane, 1,2-	0.2	ug/L	STD-12			<0.2	<0.2	
	Dichloroethylene, 1,1-	0.5	ug/L	STD-17			<0.5	<0.5	
	Dichloroethylene, 1,2-cis-	0.4	ug/L	STD-17			<0.4	<0.4	
	Dichloroethylene, 1,2-trans-	0.4	ug/L	STD-17			<0.4	<0.4	
	Dichloropropane, 1,2-	0.5	ug/L	STD-140			<0.5	<0.5	
	Ethylbenzene	0.5	ug/L	STD-2300			<0.5	<0.5	
	Ethylene dibromide	0.2	ug/L	STD-0.83			<0.2	<0.2	

Guideline = O.Reg 153-T3-Non-Potable GW

\* = Guideline Exceedence

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Report Number: 1325264  
Date Submitted: 2013-11-14  
Date Reported: 2013-11-21  
Project: 770 Somerset  
COC #: 168344

					Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1073000 Groundwater  2013-11-13 MW9B	1073001 Groundwater  2013-11-13 Dup 3	1073002 Groundwater  2013-11-13 MW9A	1073003 Groundwater  2013-11-13 Dup 4
Group	Analyte	MRL	Units	Guideline					
VOCs	Hexane (n)	5	ug/L	STD-520				<5	<5
	m/p-xylene	0.5	ug/L					<0.5	<0.5
	Methyl Ethyl Ketone	10	ug/L	STD-1500000				<10	<10
	Methyl Isobutyl Ketone	10	ug/L	STD-580000				<10	<10
	Methyl tert-Butyl Ether (MTBE)	10	ug/L	STD-1400				<10	<10
	Methylene Chloride	4.0	ug/L	STD-5500				<4.0	<4.0
	o-xylene	0.5	ug/L					<0.5	<0.5
	Styrene	0.5	ug/L	STD-9100				<0.5	<0.5
	t-1,3-Dichloropropylene	0.2	ug/L					<0.2	<0.2
	Tetrachloroethane, 1,1,1,2-	0.5	ug/L	STD-28				<0.5	<0.5
	Tetrachloroethane, 1,1,2,2-	0.5	ug/L	STD-15				<0.5	<0.5
	Tetrachloroethylene	0.3	ug/L	STD-17				<0.3	<0.3
	Toluene	0.5	ug/L	STD-18000				<0.5	<0.5
	Trichloroethane, 1,1,1-	0.4	ug/L	STD-6700				<0.4	<0.4
	Trichloroethane, 1,1,2-	0.4	ug/L	STD-30				<0.4	<0.4
	Trichloroethylene	0.3	ug/L	STD-17				<0.3	<0.3
	Trichlorofluoromethane	0.5	ug/L	STD-2500				<0.5	<0.5
	Vinyl Chloride	0.2	ug/L	STD-1.7				<0.2	<0.2
	Xylene Mixture	1.0	ug/L	STD-4200				<1.0	<1.0
VOCs Surrogates (%REC)	1,2-dichloroethane-d4	0	%					109	106
	4-bromofluorobenzene	0	%					97	100
	Toluene-d8	0	%					99	100

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Client: MMM Group Limited  
1145 Hunt Club Rd  
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K1V 0Y3  
Attention: Mark Hudson  
PO#:   
Invoice to: MMM Groups Limited

Report Number: 1325264  
Date Submitted: 2013-11-14  
Date Reported: 2013-11-21  
Project: 770 Somerset  
COC #: 168344

					1073004 Groundwater
					2013-11-13 Trip Blank
Group	Analyte	MRL	Units	Guideline	
VOCs	Acetone	50	ug/L	STD-130000	<50
	Benzene	0.5	ug/L	STD-430	<0.5
	Bromodichloromethane	0.3	ug/L	STD-85000	<0.3
	Bromoform	0.4	ug/L	STD-770	<0.4
	Bromomethane	0.5	ug/L	STD-56	<0.5
	c-1,3-Dichloropropylene	0.2	ug/L		<0.2
	Carbon Tetrachloride	0.2	ug/L	STD-8.4	<0.2
	Chlorobenzene	0.2	ug/L	STD-630	<0.2
	Chloroform	0.5	ug/L	STD-22	<0.5
	Dibromochloromethane	0.3	ug/L	STD-82000	<0.3
	Dichlorobenzene, 1,2-	0.4	ug/L	STD-9600	<0.4
	Dichlorobenzene, 1,3-	0.4	ug/L	STD-9600	<0.4
	Dichlorobenzene, 1,4-	0.4	ug/L	STD-67	<0.4
	Dichlorodifluoromethane	0.5	ug/L	STD-4400	<0.5
	Dichloroethane, 1,1-	0.4	ug/L	STD-3100	<0.4
	Dichloroethane, 1,2-	0.2	ug/L	STD-12	<0.2
	Dichloroethylene, 1,1-	0.5	ug/L	STD-17	<0.5
	Dichloroethylene, 1,2-cis-	0.4	ug/L	STD-17	<0.4
	Dichloroethylene, 1,2-trans-	0.4	ug/L	STD-17	<0.4
	Dichloropropane, 1,2-	0.5	ug/L	STD-140	<0.5
	Ethylbenzene	0.5	ug/L	STD-2300	<0.5
	Ethylene dibromide	0.2	ug/L	STD-0.83	<0.2
	Hexane (n)	5	ug/L	STD-520	<5
	m/p-xylene	0.5	ug/L		<0.5
	Methyl Ethyl Ketone	10	ug/L	STD-1500000	<10
	Methyl Isobutyl Ketone	10	ug/L	STD-580000	<10

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Report Number: 1325264  
Date Submitted: 2013-11-14  
Date Reported: 2013-11-21  
Project: 770 Somerset  
COC #: 168344

					Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.
					1073004 Groundwater  2013-11-13 Trip Blank
Group	Analyte	MRL	Units	Guideline	
VOCs	Methyl tert-Butyl Ether (MTBE)	10	ug/L	STD-1400	<10
	Methylene Chloride	4.0	ug/L	STD-5500	<4.0
	o-xylene	0.5	ug/L		<0.5
	Styrene	0.5	ug/L	STD-9100	<0.5
	t-1,3-Dichloropropylene	0.2	ug/L		<0.2
	Tetrachloroethane, 1,1,1,2-	0.5	ug/L	STD-28	<0.5
	Tetrachloroethane, 1,1,2,2-	0.5	ug/L	STD-15	<0.5
	Tetrachloroethylene	0.3	ug/L	STD-17	<0.3
	Toluene	0.5	ug/L	STD-18000	<0.5
	Trichloroethane, 1,1,1-	0.4	ug/L	STD-6700	<0.4
	Trichloroethane, 1,1,2-	0.4	ug/L	STD-30	<0.4
	Trichloroethylene	0.3	ug/L	STD-17	<0.3
	Trichlorofluoromethane	0.5	ug/L	STD-2500	<0.5
	Vinyl Chloride	0.2	ug/L	STD-1.7	<0.2
	Xylene Mixture	1.0	ug/L	STD-4200	<1.0
VOCs Surrogates (%REC)	1,2-dichloroethane-d4	0	%		108
	4-bromofluorobenzene	0	%		101
	Toluene-d8	0	%		104

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Date Submitted: 2013-11-14  
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Project: 770 Somerset  
COC #: 168344

### QC Summary

Analyte	Blank	QC % Rec	QC Limits
<b>Run No</b> 0 <b>Analysis Date</b> 2013-11-20 <b>Method</b> V 8260B			
Xylene Mixture			
<b>Run No</b> 261290 <b>Analysis Date</b> 2013-11-18 <b>Method</b> V 8260B			
Tetrachloroethane, 1,1,1,2-	<0.5 ug/L	108	80-120
Trichloroethane, 1,1,1-	<0.4 ug/L	102	80-120
Tetrachloroethane, 1,1,2,2-	<0.5 ug/L	84	80-120
Trichloroethane, 1,1,2-	<0.4 ug/L	94	80-120
Dichloroethane, 1,1-	<0.4 ug/L	102	80-120
Dichloroethylene, 1,1-	<0.5 ug/L	97	80-120
Dichlorobenzene, 1,2-	<0.4 ug/L	103	80-120
Dichloroethane, 1,2-	<0.2 ug/L	100	80-120
1,2-dichloroethane-d4	114 %	91	80-120
Dichloropropane, 1,2-	<0.5 ug/L	105	80-120
Dichlorobenzene, 1,3-	<0.4 ug/L	102	80-120
Dichlorobenzene, 1,4-	<0.4 ug/L	98	80-120

**Guideline = O.Reg 153-T3-Non-Potable GW**

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COC #: 168344

### QC Summary

Analyte	Blank	QC % Rec	QC Limits
Benzene	<0.5 ug/L	98	80-120
Bromodichloromethane	<0.3 ug/L	95	80-120
Bromoform	<0.4 ug/L	94	80-120
Bromomethane	<0.5 ug/L	86	70-130
Dichloroethylene, 1,2-cis-	<0.4 ug/L	96	80-120
Dichloropropene, 1,3-cis-	<0.2 ug/L	92	80-120
Carbon Tetrachloride	<0.2 ug/L	101	80-120
Chloroform	<0.5 ug/L	98	80-120
Dibromochloromethane	<0.3 ug/L	95	80-120
Dichlorodifluoromethane	<0.5 ug/L	98	70-130
Methylene Chloride	<4.0 ug/L	109	60-200
Ethylbenzene	<0.5 ug/L	101	80-120
Ethylene dibromide	<0.2 ug/L	102	80-120
Hexane (n)	<5 ug/L	100	70-130
m/p-xylene	<0.5 ug/L	109	80-120
Chlorobenzene	<0.2 ug/L	95	80-120
o-xylene	<0.5 ug/L	106	80-120

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### QC Summary

Analyte	Blank	QC % Rec	QC Limits
Styrene	<0.5 ug/L	97	80-120
Dichloroethylene, 1,2-trans-	<0.4 ug/L	96	80-120
Dichloropropene,1,3-trans-	<0.2 ug/L	90	80-120
Tetrachloroethylene	<0.3 ug/L	96	80-120
Toluene	<0.5 ug/L	99	80-120
Toluene-d8	101 %	99	80-120
Trichloroethylene	<0.3 ug/L	106	80-120
Trichlorofluoromethane	<0.5 ug/L	105	80-120
Vinyl Chloride	<0.2 ug/L	97	70-130
<b>Run No</b> 261300 <b>Analysis Date</b> 2013-11-18 <b>Method</b> O CCME Reg 153			
Petroleum Hydrocarbons F1	<100 ug/L	94	80-120
<b>Run No</b> 261383 <b>Analysis Date</b> 2013-11-19 <b>Method</b> V 8260B			
Acetone	<50 ug/L	90	80-120
Methyl Ethyl Ketone	<10 ug/L	88	80-120
Methyl Isobutyl Ketone	<10 ug/L	81	80-120
Methyl tert-Butyl Ether (MTBE)	<10 ug/L	90	80-120
<b>Run No</b> 261435 <b>Analysis Date</b> 2013-11-19 <b>Method</b> V 8260B			

**Guideline = O.Reg 153-T3-Non-Potable GW**

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Date Reported: 2013-11-21  
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COC #: 168344

### QC Summary

Analyte	Blank	QC % Rec	QC Limits
Tetrachloroethane, 1,1,1,2-	<0.5 ug/L	116	80-120
Trichloroethane, 1,1,1-	<0.4 ug/L	108	80-120
Tetrachloroethane, 1,1,2,2-	<0.5 ug/L	113	80-120
Trichloroethane, 1,1,2-	<0.4 ug/L	105	80-120
Dichloroethane, 1,1-	<0.4 ug/L	113	80-120
Dichloroethylene, 1,1-	<0.5 ug/L	111	80-120
Dichlorobenzene, 1,2-	<0.4 ug/L	107	80-120
Dichloroethane, 1,2-	<0.2 ug/L	112	80-120
1,2-dichloroethane-d4	90 %	98	80-120
Dichloropropane, 1,2-	<0.5 ug/L	110	80-120
Dichlorobenzene, 1,3-	<0.4 ug/L	112	80-120
Dichlorobenzene, 1,4-	<0.4 ug/L	111	80-120
Benzene	<0.5 ug/L	105	80-120
Bromodichloromethane	<0.3 ug/L	108	80-120
Bromoform	<0.4 ug/L	108	80-120
Bromomethane	<0.5 ug/L	99	70-130
Dichloroethylene, 1,2-cis-	<0.4 ug/L	107	80-120

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COC #: 168344

### QC Summary

Analyte	Blank	QC % Rec	QC Limits
Dichloropropene,1,3-cis-	<0.2 ug/L	102	80-120
Carbon Tetrachloride	<0.2 ug/L	108	80-120
Chloroform	<0.5 ug/L	106	80-120
Dibromochloromethane	<0.3 ug/L	107	80-120
Dichlorodifluoromethane	<0.5 ug/L	89	70-130
Methylene Chloride	<4.0 ug/L	110	60-200
Ethylbenzene	<0.5 ug/L	108	80-120
Ethylene dibromide	<0.2 ug/L	118	80-120
Hexane (n)	<5 ug/L	90	70-130
m/p-xylene	<0.5 ug/L	114	80-120
Chlorobenzene	<0.2 ug/L	104	80-120
o-xylene	<0.5 ug/L	114	80-120
Styrene	<0.5 ug/L	106	80-120
Dichloroethylene, 1,2-trans-	<0.4 ug/L	100	80-120
Dichloropropene,1,3-trans-	<0.2 ug/L	104	80-120
Tetrachloroethylene	<0.3 ug/L	102	80-120
Toluene	<0.5 ug/L	107	80-120

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**QC Summary**

Analyte	Blank	QC % Rec	QC Limits
Toluene-d8	101 %	99	80-120
Trichloroethylene	<0.3 ug/L	107	80-120
Trichlorofluoromethane	<0.5 ug/L	104	80-120
Vinyl Chloride	<0.2 ug/L	90	70-130
<b>Run No</b> 261439 <b>Analysis Date</b> 2013-11-19 <b>Method</b> V 8260B			
Acetone	<50 ug/L	97	80-120
Methyl Ethyl Ketone	<10 ug/L	88	80-120
Methyl Isobutyl Ketone	<10 ug/L	81	80-120
Methyl tert-Butyl Ether (MTBE)	<10 ug/L	90	80-120
<b>Run No</b> 261466 <b>Analysis Date</b> 2013-11-20 <b>Method</b> O CCME Reg 153			
Petroleum Hydrocarbons F2	<100 ug/L	100	50-120
Petroleum Hydrocarbons F3	<200 ug/L	100	50-120
Petroleum Hydrocarbons F4	<200 ug/L	100	50-120

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= Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Sample ID*	Date/Time Sampled*	Sample Matrix*	# Bottles	Sample Location	1-1	1-2	1-3	1-4	1-5	1-6	1-7	1-8	1-9	1-10	1-11	1-12	1-13	1-14	1-15	1-16	1-17	1-18	1-19	1-20	1-21	1-22	1-23	1-24	1-25	1-26	1-27	1-28	1-29	1-30	1-31	1-32	1-33	1-34	1-35	1-36	1-37	1-38	1-39	1-40	1-41	1-42	1-43	1-44	1-45	1-46	1-47	1-48	1-49	1-50	1-51	1-52	1-53	1-54	1-55	1-56	1-57	1-58	1-59	1-60	1-61	1-62	1-63	1-64	1-65	1-66	1-67	1-68	1-69	1-70	1-71	1-72	1-73	1-74	1-75	1-76	1-77	1-78	1-79	1-80	1-81	1-82	1-83	1-84	1-85	1-86	1-87	1-88	1-89	1-90	1-91	1-92	1-93	1-94	1-95	1-96	1-97	1-98	1-99	1-100	1-101	1-102	1-103	1-104	1-105	1-106	1-107	1-108	1-109	1-110	1-111	1-112	1-113	1-114	1-115	1-116	1-117	1-118	1-119	1-120	1-121	1-122	1-123	1-124	1-125	1-126	1-127	1-128	1-129	1-130	1-131	1-132	1-133	1-134	1-135	1-136	1-137	1-138	1-139	1-140	1-141	1-142	1-143	1-144	1-145	1-146	1-147	1-148	1-149	1-150	1-151	1-152	1-153	1-154	1-155	1-156	1-157	1-158	1-159	1-160	1-161	1-162	1-163	1-164	1-165	1-166	1-167	1-168	1-169	1-170	1-171	1-172	1-173	1-174	1-175	1-176	1-177	1-178	1-179	1-180	1-181	1-182	1-183	1-184	1-185	1-186	1-187	1-188	1-189	1-190	1-191	1-192	1-193	1-194	1-195	1-196	1-197	1-198	1-199	1-200	1-201	1-202	1-203	1-204	1-205	1-206	1-207	1-208	1-209	1-210	1-211	1-212	1-213	1-214	1-215	1-216	1-217	1-218	1-219	1-220	1-221	1-222	1-223	1-224	1-225	1-226	1-227	1-228	1-229	1-230	1-231	1-232	1-233	1-234	1-235	1-236	1-237	1-238	1-239	1-240	1-241	1-242	1-243	1-244	1-245	1-246	1-247	1-248	1-249	1-250	1-251	1-252	1-253	1-254	1-255	1-256	1-257	1-258	1-259	1-260	1-261	1-262	1-263	1-264	1-265	1-266	1-267	1-268	1-269	1-270	1-271	1-272	1-273	1-274	1-275	1-276	1-277	1-278	1-279	1-280	1-281	1-282	1-283	1-284	1-285	1-286	1-287	1-288	1-289	1-290	1-291	1-292	1-293	1-294	1-295	1-296	1-297	1-298	1-299	1-300	1-301	1-302	1-303	1-304	1-305	1-306	1-307	1-308	1-309	1-310	1-311	1-312	1-313	1-314	1-315	1-316	1-317	1-318	1-319	1-320	1-321	1-322	1-323	1-324	1-325	1-326	1-327	1-328	1-329	1-330	1-331	1-332	1-333	1-334	1-335	1-336	1-337	1-338	1-339	1-340	1-341	1-342	1-343	1-344	1-345	1-346	1-347	1-348	1-349	1-350	1-351	1-352	1-353	1-354	1-355	1-356	1-357	1-358	1-359	1-360	1-361	1-362	1-363	1-364	1-365	1-366	1-367	1-368	1-369	1-370	1-371	1-372	1-373	1-374	1-375	1-376	1-377	1
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Client: MMM Group Limited  
72 Victoria Street, Suite 100  
Kitchener, ON  
N2G 4Y9  
Attention: Peter van Driel  
PO#:  
Invoice to: MMM Group Limited

Report Number: 1324043  
Date Submitted: 2013-10-30  
Date Reported: 2013-11-11  
Project: 1412815  
COC #: 175641

Page 1 of 7

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**Dear Peter van Driel:**

**Please find attached the analytical results for your samples. If you have any questions regarding this report, please do not hesitate to call (613-727-5692).**

Report Comments:

APPROVAL: \_\_\_\_\_

Lorna Wilson  
Laboratory Supervisor, Inorganics

APPROVAL: \_\_\_\_\_

Justin Deagle  
Acting Team Leader, Organics

Exova (Ottawa) is certified and accredited for specific parameters by:  
CALA, Canadian Association for Laboratory Accreditation (to ISO 17025), OMAFRA, Ontario Ministry of Agriculture, Food and Rural Affairs (for farm soils), Licensed by Ontario MOE for specific tests in drinking water.

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 COC #: 175641

					Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.
					1069236 Groundwater  2013-10-29 MW 5A
Group	Analyte	MRL	Units	Guideline	
Cyanide	Cyanide (total)	0.005	mg/L	MAC-2	0.032
General Chemistry	F	0.10	mg/L	MAC-10	0.13
	pH	1.00		5.5-11.0	7.29
	S2-	0.10	mg/L	MAC-2	<0.10
	SO4	3	mg/L	MAC-1500	298
	Total Suspended Solids	2	mg/L	MAC-350	29
Hydrocarbons	F1 (C6-C10)	100	ug/L		<100
	F1-BTEX (C6-C10)	100	ug/L		<100
	F2 (C10-C16)	100	ug/L		<100
	F3 (C16-C34)	200	ug/L		<200
	F4 (C34-C50)	200	ug/L		<200
Mercury	Hg	0.0001	mg/L	MAC-0.001	<0.0001
Metals	Ag	0.01	mg/L	MAC-5	<0.01
	Al	0.1	mg/L	MAC-50	<0.1
	Aqua-Regia Digest		mg/L		y
	As	0.02	mg/L	MAC-1	<0.02
	B	0.1	mg/L	MAC-25	0.2
	Bi	0.05	mg/L	MAC-5	<0.05
	Cd	0.008	mg/L	MAC-0.02	<0.008
	Co	0.01	mg/L	MAC-5	<0.01
	Cr	0.05	mg/L	MAC-5	<0.05
	Cu	0.01	mg/L	MAC-3	<0.01
	Mn	0.01	mg/L	MAC-5	0.07
	Mo	0.01	mg/L	MAC-5	<0.01
	Ni	0.01	mg/L	MAC-3	0.03
	Pb	0.01	mg/L	MAC-5	<0.01

Guideline = Sanitary Sewer - Ottawa

\* = Guideline Exceedence

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					1069236 Groundwater
					2013-10-29 MW 5A
Group	Analyte	MRL	Units	Guideline	
Metals	Sb	0.01	mg/L	MAC-5	<0.01
	Se	0.02	mg/L	MAC-5	<0.02
	Sn	0.1	mg/L	MAC-5	<0.1
	Ti	0.1	mg/L	MAC-5	<0.1
	V	0.05	mg/L	MAC-5	<0.05
	Zn	0.04	mg/L	MAC-3	<0.04
Nutrients	BOD5	1	mg/L	MAC-300	1
	Phenols	0.001	mg/L	MAC-1.0	<0.001
	Total Kjeldahl Nitrogen	0.10	mg/L	MAC-100	0.81
	Total P	0.01	mg/L	MAC-10	0.03
Oil & Grease	Oil & Grease - Mineral	1	mg/L	MAC-15	<1
	Oil & Grease - Non-mineral	1	mg/L	MAC-150	<1
	Oil & Grease - Total	1	mg/L		<1
PCBs	Polychlorinated Biphenyls (PCBs)	0.1	ug/L	MAC-1.0	<0.1
Subcontract	1-methylnaphthalene	0.05	ug/L	MAC-32	<0.05
	2,4-dichlorophenol	1.0	ug/L	MAC-44	<1.0
	2-methylnaphthalene	0.05	ug/L	MAC-22	0.25
	7H-Dibenzo(c,g)carbazole	0.5	ug/L		<0.5
	Acenaphthene	0.05	ug/L		<0.05
	Acenaphthylene	0.05	ug/L		<0.05
	Anthracene	0.01	ug/L		<0.01
	Benzo(a)anthracene	0.01	ug/L		<0.01
	Benzo(a)pyrene	0.01	ug/L		<0.01
	Benzo(b+j+k)fluoranthene	0.5	ug/L		<0.5
	Benzo(e)pyrene	0.5	ug/L		<0.5
	Benzo(g,h,i)perylene	0.05	ug/L		<0.05

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					1069236 Groundwater
					2013-10-29 MW 5A
Group	Analyte	MRL	Units	Guideline	
Subcontract	Benzylbutylphthalate	1.0	ug/L	MAC-17	<1.0
	Bis(2-chloroethoxy)methane	1.0	ug/L	MAC-36	<1.0
	Bis(2-ethylhexyl)phthalate	1.0	ug/L	MAC-280	<1.0
	Chrysene	0.05	ug/L		<0.05
	Dibenz(a,j)acridine	0.5	ug/L		<0.5
	Dibenzo(a,h)anthracene	0.05	ug/L		<0.05
	Dibenzo(a,i)pyrene	0.5	ug/L		<0.5
	Diethyl Phthalate	1.0	ug/L	MAC-200	<1.0
	Di-n-butylphthalate	1.0	ug/L	MAC-57	<1.0
	Di-n-octylphthalate	1.0	ug/L	MAC-30	<1.0
	Fluoranthene	0.01	ug/L		<0.01
	Fluorene	0.05	ug/L	MAC-59	<0.05
	Hexachlorobenzene	1.0	ug/L	MAC-0.1	<1.0
	Indeno(1,2,3-c,d)pyrene	0.05	ug/L		<0.05
	Indole	1.0	ug/L	MAC-50	<1.0
	Naphthalene	0.05	ug/L	MAC-59	0.40
	PAH (Total)	3.4	ug/L	MAC-15	<3.4
	Perylene	0.5	ug/L		<0.5
	Phenanthrene	0.05	ug/L		<0.05
	Pyrene	0.01	ug/L		<0.01
VOCs	1,1,1,2-tetrachloroethane	0.5	ug/L		<0.5
	1,1,1-trichloroethane	0.4	ug/L	MAC-54	<0.4
	1,1,2,2-tetrachloroethane	0.5	ug/L	MAC-40	<0.5
	1,1,2-trichloroethane	0.4	ug/L	MAC-800	<0.4
	1,1-dichloroethane	0.4	ug/L	MAC-200	<0.4
	1,1-dichloroethylene	0.5	ug/L	MAC-40	<0.5

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N2G 4Y9  
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Report Number: 1324043  
Date Submitted: 2013-10-30  
Date Reported: 2013-11-11  
Project: 1412815  
COC #: 175641

					1069236 Groundwater
					2013-10-29 MW 5A
Group	Analyte	MRL	Units	Guideline	
VOCs	1,2-dibromoethane	0.2	ug/L	MAC-28	<0.2
	1,2-dichlorobenzene	0.4	ug/L	MAC-88	<0.4
	1,2-dichloroethane	0.2	ug/L	MAC-210	<0.2
	1,2-dichloroethane-d4	0	%		99
	1,2-dichloropropane	0.5	ug/L	MAC-850	<0.5
	1,3,5-trimethylbenzene	0.3	ug/L	MAC-3.0	<0.3
	1,3-dichlorobenzene	0.4	ug/L	MAC-36	<0.4
	1,4-dichlorobenzene	0.4	ug/L	MAC-17	<0.4
	4-bromofluorobenzene	0	%		94
	Benzene	0.5	ug/L	MAC-10	<0.5
	Bromodichloromethane	0.3	ug/L	MAC-350	<0.3
	Bromoform	0.4	ug/L	MAC-630	<0.4
	Bromomethane	0.5	ug/L	MAC-110	<0.5
	c-1,2-Dichloroethylene	0.4	ug/L	MAC-200	<0.4
	c-1,3-Dichloropropylene	0.2	ug/L	MAC-70	<0.2
	Carbon Tetrachloride	0.2	ug/L	MAC-57	<0.2
	Chloroethane	0.2	ug/L	MAC-270	<0.2
	Chloroform	0.5	ug/L	MAC-80	<0.5
	Chloromethane	0.2	ug/L	MAC-190	<0.2
	Dibromochloromethane	0.3	ug/L	MAC-57	<0.3
	Dichloromethane	4.0	ug/L	MAC-210	<4.0
	Ethylbenzene	0.5	ug/L	MAC-57	<0.5
	m/p-xylene	0.5	ug/L		<0.5
	Monochlorobenzene	0.2	ug/L	MAC-57	<0.2
	o-xylene	0.5	ug/L		<0.5
	Styrene	0.5	ug/L	MAC-40	<0.5

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Client: MMM Group Limited  
 72 Victoria Street, Suite 100  
 Kitchener, ON  
 N2G 4Y9  
 Attention: Peter van Driel  
 PO#:   
 Invoice to: MMM Group Limited

Report Number: 1324043  
 Date Submitted: 2013-10-30  
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 Project: 1412815  
 COC #: 175641

					Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.
					1069236 Groundwater  2013-10-29 MW 5A
Group	Analyte	MRL	Units	Guideline	
VOCs	t-1,2-Dichloroethylene	0.4	ug/L	MAC-200	<0.4
	t-1,3-Dichloropropylene	0.2	ug/L	MAC-70	<0.2
	Tetrachloroethylene	0.3	ug/L	MAC-50	<0.3
	Toluene	0.5	ug/L	MAC-80	<0.5
	Toluene-d8	0	%		98
	Trichloroethylene	0.3	ug/L	MAC-54	<0.3
	Trichlorofluoromethane	0.5	ug/L	MAC-20	<0.5
	Vinyl Chloride	0.2	ug/L	MAC-400	<0.2
	Xylene; total	1.0	ug/L	MAC-320	<1.0

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COC #: 175641

---

### ***Sample Comment Summary***

Sample ID: 1069236 MW 5A Metals analysis performed on aqua-regia digest of sample material.S2 MRL elevated due to sample turbidity.
---

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72 Victoria Street, Suite 100  
Kitchener, ON  
N2G 4Y9  
Attention: Peter van Driel  
PO#:  
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Report Number: 1326983  
Date Submitted: 2013-12-10  
Date Reported: 2013-12-11  
Project: 1412815  
COC #: 173052

Page 1 of 8

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**Dear Peter van Driel:**

**Please find attached the analytical results for your samples. If you have any questions regarding this report, please do not hesitate to call (613-727-5692).**

Report Comments:

APPROVAL: \_\_\_\_\_

Lorna Wilson  
Laboratory Supervisor, Inorganics

APPROVAL: \_\_\_\_\_

Charlie (Long) Qu  
Laboratory Supervisor, Organics

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COC #: 173052

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.			
					1078024 Groundwater  2013-12-09 MW9B	1078025 Groundwater  2013-12-09 MW10	1078026 Groundwater  2013-12-10 Dup 1	1078027 Groundwater  2013-12-10 Dup 2
General Chemistry	Total Suspended Solids	2	mg/L		612	120		
Hydrocarbons	F1 (C6-C10)	100	ug/L	STD-750	<100	<100	<100	<100
	F2 (C10-C16)	100	ug/L	STD-150	<100	<100	<100	<100
	F3 (C16-C34)	200	ug/L	STD-500	<200	400	400	<200
	F4 (C34-C50)	200	ug/L	STD-500	<200	<200	<200	<200

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	
					1078028 Water  2013-12-10 Trip Blank	
VOCs	1,1,1,2-tetrachloroethane	0.5	ug/L		<0.5	
	1,1,1-trichloroethane	0.4	ug/L		<0.4	
	1,1,2,2-tetrachloroethane	0.5	ug/L		<0.5	
	1,1,2-trichloroethane	0.4	ug/L		<0.4	
	1,1-dichloroethane	0.4	ug/L		<0.4	
	1,1-dichloroethylene	0.5	ug/L		<0.5	
	1,2-dibromoethane	0.2	ug/L		<0.2	
	1,2-dichlorobenzene	0.4	ug/L		<0.4	
	1,2-dichloroethane	0.2	ug/L		<0.2	
	1,2-dichloroethane-d4	0	%		117	
	1,2-dichloropropane	0.5	ug/L		<0.5	
	1,3,5-trimethylbenzene	0.3	ug/L		<0.3	
	1,3-dichlorobenzene	0.4	ug/L		<0.4	

**Guideline =** \* = **Guideline Exceedence**

\*\* = Analysis completed at Mississauga, Ontario.

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Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Client: MMM Group Limited  
 72 Victoria Street, Suite 100  
 Kitchener, ON  
 N2G 4Y9  
 Attention: Peter van Driel  
 PO#:   
 Invoice to: MMM Groups Limited

Report Number: 1326983  
 Date Submitted: 2013-12-10  
 Date Reported: 2013-12-11  
 Project: 1412815  
 COC #: 173052

					Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.
					1078028 Water  2013-12-10 Trip Blank
Group	Analyte	MRL	Units	Guideline	
VOCs	1,4-dichlorobenzene	0.4	ug/L		<0.4
	4-bromofluorobenzene	0	%		118
	Benzene	0.5	ug/L		<0.5
	Bromodichloromethane	0.3	ug/L		<0.3
	Bromoform	0.4	ug/L		<0.4
	Bromomethane	0.5	ug/L		<0.5
	c-1,2-Dichloroethylene	0.4	ug/L		<0.4
	c-1,3-Dichloropropylene	0.2	ug/L		<0.2
	Carbon Tetrachloride	0.2	ug/L		<0.2
	Chloroethane	0.2	ug/L		<0.2
	Chloroform	0.5	ug/L		<0.5
	Chloromethane	0.2	ug/L		<0.2
	Dibromochloromethane	0.3	ug/L		<0.3
	Dichlorodifluoromethane	0.5	ug/L		<0.5
	Dichloromethane	4.0	ug/L		<4.0
	Ethylbenzene	0.5	ug/L		<0.5
	m/p-xylene	0.5	ug/L		<0.5
	Monochlorobenzene	0.2	ug/L		<0.2
	o-xylene	0.5	ug/L		<0.5
	Styrene	0.5	ug/L		<0.5
	t-1,2-Dichloroethylene	0.4	ug/L		<0.4
	t-1,3-Dichloropropylene	0.2	ug/L		<0.2
	Tetrachloroethylene	0.3	ug/L		<0.3
	Toluene	0.5	ug/L		<0.5
	Toluene-d8	0	%		102
	Trichloroethylene	0.3	ug/L		<0.3

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72 Victoria Street, Suite 100  
Kitchener, ON  
N2G 4Y9  
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Invoice to: MMM Groups Limited

Report Number: 1326983  
Date Submitted: 2013-12-10  
Date Reported: 2013-12-11  
Project: 1412815  
COC #: 173052

					Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.
Group	Analyte	MRL	Units	Guideline	1078028 Water  2013-12-10 Trip Blank
VOCs	Trichlorofluoromethane	0.5	ug/L		<0.5
	Vinyl Chloride	0.2	ug/L		<0.2
	Xylene; total	1.0	ug/L		<1.0

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MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable  
Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO  
= Interim Provincial Water Quality Objective, TDR = Typical Desired Range

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 Project: 1412815  
 COC #: 173052

### QC Summary

Analyte	Blank	QC % Rec	QC Limits
<b>Run No</b> 262675 <b>Analysis Date</b> 2013-12-10 <b>Method</b> V 8260B			
1,1,1,2-tetrachloroethane	<0.5 ug/L	117	80-120
1,1,1-trichloroethane	<0.4 ug/L	119	80-120
1,1,2,2-tetrachloroethane	<0.5 ug/L	92	80-120
1,1,2-trichloroethane	<0.4 ug/L	93	80-120
1,1-dichloroethane	<0.4 ug/L	116	80-120
1,1-dichloroethylene	<0.5 ug/L	109	80-120
1,2-dibromoethane	<0.2 ug/L	91	80-120
1,2-dichlorobenzene	<0.4 ug/L	118	80-120
1,2-dichloroethane	<0.2 ug/L	94	80-120
1,2-dichloroethane-d4	87 %	102	80-120
1,2-dichloropropane	<0.5 ug/L	119	80-120
1,3,5-trimethylbenzene	<0.3 ug/L	109	80-120
1,3-dichlorobenzene	<0.4 ug/L	112	80-120
1,4-dichlorobenzene	<0.4 ug/L	112	80-120

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 MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable  
 Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO  
 = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Client: MMM Group Limited  
 72 Victoria Street, Suite 100  
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 Project: 1412815  
 COC #: 173052

### QC Summary

Analyte	Blank	QC % Rec	QC Limits
Benzene	<0.5 ug/L	120	80-120
Bromodichloromethane	<0.3 ug/L	106	80-120
Bromoform	<0.4 ug/L	90	80-120
Bromomethane	<0.5 ug/L	76	70-130
c-1,2-Dichloroethylene	<0.4 ug/L	114	80-120
c-1,3-Dichloropropylene	<0.2 ug/L	89	80-120
Carbon Tetrachloride	<0.2 ug/L	113	80-120
Chloroethane	<0.2 ug/L	119	70-130
Chloroform	<0.5 ug/L	109	80-120
Chloromethane	<0.2 ug/L	116	70-130
Dibromochloromethane	<0.3 ug/L	92	80-120
Dichlorodifluoromethane	<0.5 ug/L	114	70-130
Dichloromethane	<4.0 ug/L	74	60-200
Ethylbenzene	<0.5 ug/L	119	80-120
m/p-xylene	<0.5 ug/L	119	80-120
Monochlorobenzene	<0.2 ug/L	107	80-120
o-xylene	<0.5 ug/L	119	80-120

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 72 Victoria Street, Suite 100  
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 Project: 1412815  
 COC #: 173052

### QC Summary

Analyte	Blank	QC % Rec	QC Limits
Styrene	<0.5 ug/L	117	80-120
t-1,2-Dichloroethylene	<0.4 ug/L	113	80-120
t-1,3-Dichloropropylene	<0.2 ug/L	98	80-120
Tetrachloroethylene	<0.3 ug/L	106	80-120
Toluene	<0.5 ug/L	117	80-120
Toluene-d8	98 %	110	80-120
Trichloroethylene	<0.3 ug/L	119	80-120
Trichlorofluoromethane	<0.5 ug/L	116	80-120
Vinyl Chloride	<0.2 ug/L	110	70-130
<b>Run No</b> 262677 <b>Analysis Date</b> 2013-12-11 <b>Method</b> O CCME Reg 153			
F1 (C6-C10)	<100 ug/L	101	80-120
<b>Run No</b> 262679 <b>Analysis Date</b> 2013-12-11 <b>Method</b> V 8260B			
Xylene; total			
<b>Run No</b> 262698 <b>Analysis Date</b> 2013-12-11 <b>Method</b> O CCME Reg 153			
F2 (C10-C16)	<100 ug/L	80	50-120
F3 (C16-C34)	<200 ug/L	80	50-120
F4 (C34-C50)	<200 ug/L	80	50-120

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 MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable  
 Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO  
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Client: MMM Group Limited  
72 Victoria Street, Suite 100  
Kitchener, ON  
N2G 4Y9  
Attention: Peter van Driel  
PO#:   
Invoice to: MMM Groups Limited

Report Number: 1326983  
Date Submitted: 2013-12-10  
Date Reported: 2013-12-11  
Project: 1412815  
COC #: 173052

**QC Summary**

Analyte	Blank	QC % Rec	QC Limits
Run No 262707 Analysis Date 2013-12-11 Method C SM2540			
Total Suspended Solids	<2 mg/L	99	90-110

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MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable  
Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO  
= Interim Provincial Water Quality Objective, TDR = Typical Desired Range



# CHAIN OF CUSTODY

1326983  
173052

- ☐ 146 Colonnade Rd., Unit 8, Ottawa, ON K2E 7Y1 Ph: (613) 727-5692 Fax: (613) 727-5222  
☐ 608 Norris Court, Kingston, ON K7P 2R9 Ph: (613) 634-9307 Fax: (613) 634-9308  
☐ 380 Vansickle Rd., Unit 630, St. Catharines, ON L2R 6P7 Ph: (905) 680-8887 Fax: (905) 680-4256  
☐ 2395 Speakman Drive, Mississauga, ON, L5K 1B3 Phone: (905) 822-4111 Fax: (905) 823-1446

## LABORATORY USE ONLY

Report #: \_\_\_\_\_

### Report Information\*:

Client: MMM  
Contact: Peter van Duyl  
Address: 72 Victoria St. S. Suite 100  
Kitchener ON N2G-4Y9  
Email: P.vanduyt@mmm.ca Phone: (519) 635-5259  
Project: 1012815 Vanduyt@mmm.ca

### Invoice Information\*:

Invoice to the same as above? Yes / No, or:

Client: \_\_\_\_\_  
Contact: \_\_\_\_\_  
Address: \_\_\_\_\_  
Email: \_\_\_\_\_ Phone: \_\_\_\_\_  
Purchase Order #: \_\_\_\_\_  
Exova Quote #: \_\_\_\_\_

### Criteria Required\*:

- ☐ ODWSOG ☐ Other, Specify: \_\_\_\_\_  
☐ PWQO \_\_\_\_\_  
☐ Ont. Reg. 558 \_\_\_\_\_  
☐ CCME \_\_\_\_\_  
☐ Sanitary Sewer, City: \_\_\_\_\_  
☐ Storm Sewer, City: \_\_\_\_\_  
☒ Ont. Reg 153/04  
Table # 3 Coarse/Fine, Surface/Subsurface  
Type: Com-Ind / Res-Park / Agri / GW / Other

The sample results from this submission  
will form part of a formal Record of Site  
Condition (RSC) under O.Reg. 153/04 \*:

YES / NO

Is this a drinking water sample? YES / NO \*

**If yes, complete the drinking water COC**

### Additional Email/Fax:

1. Email: adamsc@mmm.ca  
2. Email: \_\_\_\_\_  
3. Email: \_\_\_\_\_  
Fax: \_\_\_\_\_

### Report Format:

☒ PDF ☒ Excel ☐ Other, Specify: \_\_\_\_\_

### Turnaround Time (rush surcharges may apply)\*:

- ☐ 5 Business Days (Standard)  
☐ 3 Business Days (Rush)  
☐ 2 Business Days (Rush)  
☒ 1 Business Day (Rush)  
☐ Other (specify date): \_\_\_\_\_

Notes: \_\_\_\_\_

\* Indicates a required field

Please note that incomplete information may result in turnaround time delays.

Samples should be kept cool (4-10°C) from sampling time through drop-off at the laboratory.

Sample ID*	Date/Time Sampled*	Sample Matrix*	# Bottles	Sample Location
MW9B	9-Dec-13	GW	4	
MW10	10-Dec-13	GW	4	
Dup 1	10-Dec-13	GW	3	
Dup 2	9-Dec-13	GW	3	

Parameters												Lab Use Only
PH	TS	Ca	Mg	Fe	Mn	Cu	Pb	Cd	Cr	Co	Se	
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	1078024
												8025
												8026
												8029

Samples Relinquished By: <u>Peter van Duyl</u>	Date/Time: <u>Dec 10/13 1:15 PM</u>	Samples Received By: <u>[Signature]</u>	Date/Time: <u>12/13/13</u>	Temperature: <u>9</u>	Condition:
Samples Relinquished By:	Date/Time:	Samples Received By:	Date/Time:		

Your Project #: 14-12815-001-PH2  
 Site Location: 770 SOMERSET ST.  
 Your C.O.C. #: 48044601, 480446-01-01

**Attention: Carolyn Adams**

MMM Group Limited  
 100 Commerce Valley Dr West  
 Thornhill, ON  
 CANADA L3T 0A1

**Report Date: 2014/08/18**

Report #: R3125220

Version: 2

**CERTIFICATE OF ANALYSIS**

**MAXXAM JOB #: B4E2663**

**Received: 2014/08/08, 14:45**

Sample Matrix: Water  
 # Samples Received: 10

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Chloride by Automated Colourimetry	10	N/A	2014/08/12	CAM SOP-00463	EPA 325.2 m
Chromium (VI) in Water	10	N/A	2014/08/14	CAM SOP-00436	EPA 7199 m
Free (WAD) Cyanide	10	N/A	2014/08/13	CAM SOP-00457	OMOE E3015 m
Mercury	4	2014/08/12	2014/08/13	CAM SOP-00453	EPA 7470A m
Mercury	1	2014/08/12	2014/08/14	CAM SOP-00453	EPA 7470A m
Mercury	5	2014/08/13	2014/08/14	CAM SOP-00453	EPA 7470A m
Dissolved Metals by ICPMS	9	N/A	2014/08/15	CAM SOP-00447	EPA 6020 m
Dissolved Metals by ICPMS	1	N/A	2014/08/18	CAM SOP-00447	EPA 6020 m

**Remarks:**

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons. The extraction date for samples field preserved with methanol for F1 and Volatile Organic Compounds is considered to be the date sampled.

Maxxam Analytics is accredited for all specific parameters as required by Ontario Regulation 153/04. Maxxam Analytics is limited in liability to the actual cost of analysis unless otherwise agreed in writing. There is no other warranty expressed or implied. Samples will be retained at Maxxam Analytics for three weeks from receipt of data or as per contract.

\* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.



Your Project #: 14-12815-001-PH2  
Site Location: 770 SOMERSET ST.  
Your C.O.C. #: 48044601, 480446-01-01

**Attention:Carolyn Adams**

MMM Group Limited  
100 Commerce Valley Dr West  
Thornhill, ON  
CANADA L3T 0A1

**Report Date: 2014/08/18**

Report #: R3125220

Version: 2

**CERTIFICATE OF ANALYSIS**

**MAXXAM JOB #: B4E2663**

**Received: 2014/08/08, 14:45**

**Encryption Key**

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Jolanta Goralczyk, Project Manager

Email: JGoralczyk@maxxam.ca

Phone# (905)817-5751

=====

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Job #: B4E2663  
Report Date: 2014/08/18

MMM Group Limited  
Client Project #: 14-12815-001-PH2  
Site Location: 770 SOMERSET ST.

### RESULTS OF ANALYSES OF WATER

Maxxam ID		XA9547		XA9548	XA9549		XA9550	XA9551		
Sampling Date		2014/08/08 11:30		2014/08/08 07:45	2014/08/08 12:00		2014/08/07 16:30	2014/08/08 06:30		
COC Number		480446-01-01		480446-01-01	480446-01-01		480446-01-01	480446-01-01		
	Units	MW1	RDL	MW2	MW4	RDL	MW5A	MW5B	RDL	QC Batch
<b>Inorganics</b>										
Free Cyanide	ug/L	31	2	11	9	2	11	5	2	3706729
Dissolved Chloride (Cl)	mg/L	5700	50	9300	10000	70	6300	5900	50	3706788
RDL = Reportable Detection Limit										
QC Batch = Quality Control Batch										

Maxxam ID		XA9552		XA9553		XA9554		XA9555		XA9556		
Sampling Date		2014/08/07 11:00		2014/08/08 10:30		2014/08/08 09:30		2014/08/08 13:00		2014/08/07		
COC Number		480446-01-01		480446-01-01		480446-01-01		480446-01-01		480446-01-01		
	Units	MW9A	RDL	MW9B	RDL	MW10	RDL	MW11	RDL	DUP-1	RDL	QC Batch
<b>Inorganics</b>												
Free Cyanide	ug/L	<2	2	6	2	<2	2	6	2	10	2	3706729
Dissolved Chloride (Cl)	mg/L	1500	20	5800	50	3900	40	3400	30	6400	50	3706788
RDL = Reportable Detection Limit												
QC Batch = Quality Control Batch												

Maxxam Job #: B4E2663  
Report Date: 2014/08/18

MMM Group Limited  
Client Project #: 14-12815-001-PH2  
Site Location: 770 SOMERSET ST.

### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		XA9547		XA9548			XA9549		XA9550		
Sampling Date		2014/08/08 11:30		2014/08/08 07:45			2014/08/08 12:00		2014/08/07 16:30		
COC Number		480446-01-01		480446-01-01			480446-01-01		480446-01-01		
	Units	MW1	RDL	MW2	RDL	QC Batch	MW4	RDL	MW5A	RDL	QC Batch
<b>Metals</b>											
Chromium (VI)	ug/L	<5.0	5.0	<5.0	5.0	3706674	<5.0	5.0	<5.0	5.0	3706674
Mercury (Hg)	ug/L	<0.1	0.1	<0.1	0.1	3709077	<0.1	0.1	<0.1	0.1	3707416
Dissolved Antimony (Sb)	ug/L	<5.0	5.0	<5.0	5.0	3709601	<5.0	5.0	<5.0	5.0	3709601
Dissolved Arsenic (As)	ug/L	<10	10	<10	10	3709601	<20	20	<10	10	3709601
Dissolved Barium (Ba)	ug/L	260	20	350	20	3709601	270	20	270	20	3709601
Dissolved Beryllium (Be)	ug/L	<5.0	5.0	<5.0	5.0	3709601	<5.0	5.0	<5.0	5.0	3709601
Dissolved Boron (B)	ug/L	110	100	120	100	3709601	150	100	170	100	3709601
Dissolved Cadmium (Cd)	ug/L	<1.0	1.0	<1.0	1.0	3709601	<1.0	1.0	<1.0	1.0	3709601
Dissolved Chromium (Cr)	ug/L	<50	50	<50	50	3709601	<50	50	<50	50	3709601
Dissolved Cobalt (Co)	ug/L	<5.0	5.0	<5.0	5.0	3709601	5.5	5.0	<5.0	5.0	3709601
Dissolved Copper (Cu)	ug/L	<10	10	<10	10	3709601	<10	10	<10	10	3709601
Dissolved Lead (Pb)	ug/L	<5.0	5.0	<5.0	5.0	3709601	<5.0	5.0	<5.0	5.0	3709601
Dissolved Molybdenum (Mo)	ug/L	5.2	5.0	<5.0	5.0	3709601	<5.0	5.0	<5.0	5.0	3709601
Dissolved Nickel (Ni)	ug/L	<10	10	<10	10	3709601	<10	10	<10	10	3709601
Dissolved Selenium (Se)	ug/L	<20	20	<20	20	3709601	<20	20	<20	20	3709601
Dissolved Silver (Ag)	ug/L	1.9	1.0	5.0	1.0	3709601	1.6	1.0	2.3	1.0	3709601
Dissolved Sodium (Na)	ug/L	3700000	1000	5700000	1000	3709601	5600000	1000	3800000	1000	3709601
Dissolved Thallium (Tl)	ug/L	<0.50	0.50	<0.50	0.50	3709601	<0.50	0.50	<0.50	0.50	3709601
Dissolved Uranium (U)	ug/L	3.0	1.0	2.6	1.0	3709601	5.1	1.0	3.8	1.0	3709601
Dissolved Vanadium (V)	ug/L	<5.0	5.0	<10	10	3709601	<10	10	<5.0	5.0	3709601
Dissolved Zinc (Zn)	ug/L	<50	50	<50	50	3709601	<50	50	<50	50	3709601
RDL = Reportable Detection Limit											
QC Batch = Quality Control Batch											

Maxxam Job #: B4E2663  
Report Date: 2014/08/18

MMM Group Limited  
Client Project #: 14-12815-001-PH2  
Site Location: 770 SOMERSET ST.

### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		XA9551			XA9552		XA9553		
Sampling Date		2014/08/08 06:30			2014/08/07 11:00		2014/08/08 10:30		
COC Number		480446-01-01			480446-01-01		480446-01-01		
	Units	MW5B	RDL	QC Batch	MW9A	RDL	MW9B	RDL	QC Batch
<b>Metals</b>									
Chromium (VI)	ug/L	<0.50	0.50	3706674	<0.50	0.50	<5.0	5.0	3706674
Mercury (Hg)	ug/L	<0.1	0.1	3709077	<0.1	0.1	<0.1	0.1	3707416
Dissolved Antimony (Sb)	ug/L	<5.0	5.0	3709601	<0.50	0.50	<5.0	5.0	3709601
Dissolved Arsenic (As)	ug/L	<10	10	3709601	<2.0 (1)	2.0	<10	10	3709601
Dissolved Barium (Ba)	ug/L	290	20	3709601	500	2.0	230	20	3709601
Dissolved Beryllium (Be)	ug/L	<5.0	5.0	3709601	<0.50	0.50	<5.0	5.0	3709601
Dissolved Boron (B)	ug/L	180	100	3709601	430	10	170	100	3709601
Dissolved Cadmium (Cd)	ug/L	<1.0	1.0	3709601	<0.10	0.10	<1.0	1.0	3709601
Dissolved Chromium (Cr)	ug/L	<50	50	3709601	<5.0	5.0	<50	50	3709601
Dissolved Cobalt (Co)	ug/L	<5.0	5.0	3709601	1.2	0.50	<5.0	5.0	3709601
Dissolved Copper (Cu)	ug/L	<10	10	3709601	<1.0	1.0	<10	10	3709601
Dissolved Lead (Pb)	ug/L	<5.0	5.0	3709601	<0.50	0.50	<5.0	5.0	3709601
Dissolved Molybdenum (Mo)	ug/L	<5.0	5.0	3709601	13	0.50	<5.0	5.0	3709601
Dissolved Nickel (Ni)	ug/L	<10	10	3709601	<1.0	1.0	<10	10	3709601
Dissolved Selenium (Se)	ug/L	<20	20	3709601	<2.0	2.0	<20	20	3709601
Dissolved Silver (Ag)	ug/L	<1.0	1.0	3709601	<0.10	0.10	1.3	1.0	3709601
Dissolved Sodium (Na)	ug/L	3400000	1000	3709601	798321..58	500	3400000	1000	3709601
Dissolved Thallium (Tl)	ug/L	<0.50	0.50	3709601	0.23	0.050	<0.50	0.50	3709601
Dissolved Uranium (U)	ug/L	3.7	1.0	3709601	0.54	0.10	2.9	1.0	3709601
Dissolved Vanadium (V)	ug/L	<5.0	5.0	3709601	<2.5 (1)	2.5	<5.0	5.0	3709601
Dissolved Zinc (Zn)	ug/L	<50	50	3709601	<5.0	5.0	<50	50	3709601
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									
(1) Metal Analysis: Detection Limit was raised due to matrix interferences.									

Maxxam Job #: B4E2663  
Report Date: 2014/08/18

MMM Group Limited  
Client Project #: 14-12815-001-PH2  
Site Location: 770 SOMERSET ST.

### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		XA9554		XA9555		XA9556		
Sampling Date		2014/08/08 09:30		2014/08/08 13:00		2014/08/07		
COC Number		480446-01-01		480446-01-01		480446-01-01		
	Units	MW10	RDL	MW11	RDL	DUP-1	RDL	QC Batch
<b>Metals</b>								
Chromium (VI)	ug/L	<0.50	0.50	<5.0	5.0	<5.0	5.0	3706674
Mercury (Hg)	ug/L	<0.1	0.1	<0.1	0.1	<0.1	0.1	3709077
Dissolved Antimony (Sb)	ug/L	<2.5	2.5	<2.5	2.5	<5.0	5.0	3709601
Dissolved Arsenic (As)	ug/L	<5.0	5.0	<5.0	5.0	<10	10	3709601
Dissolved Barium (Ba)	ug/L	260	10	390	10	270	20	3709601
Dissolved Beryllium (Be)	ug/L	<2.5	2.5	<2.5	2.5	<5.0	5.0	3709601
Dissolved Boron (B)	ug/L	190	50	74	50	180	100	3709601
Dissolved Cadmium (Cd)	ug/L	<0.50	0.50	<0.50	0.50	<1.0	1.0	3709601
Dissolved Chromium (Cr)	ug/L	<25	25	<25	25	<50	50	3709601
Dissolved Cobalt (Co)	ug/L	<2.5	2.5	<2.5	2.5	<5.0	5.0	3709601
Dissolved Copper (Cu)	ug/L	<5.0	5.0	<5.0	5.0	<10	10	3709601
Dissolved Lead (Pb)	ug/L	<2.5	2.5	<2.5	2.5	<5.0	5.0	3709601
Dissolved Molybdenum (Mo)	ug/L	3.6	2.5	3.1	2.5	<5.0	5.0	3709601
Dissolved Nickel (Ni)	ug/L	<5.0	5.0	<5.0	5.0	<10	10	3709601
Dissolved Selenium (Se)	ug/L	<10	10	<10	10	<20	20	3709601
Dissolved Silver (Ag)	ug/L	<0.50	0.50	<0.50	0.50	2.4	1.0	3709601
Dissolved Sodium (Na)	ug/L	2300000	500	2100000	500	3900000	1000	3709601
Dissolved Thallium (Tl)	ug/L	<0.25	0.25	<0.25	0.25	<0.50	0.50	3709601
Dissolved Uranium (U)	ug/L	5.5	0.50	1.5	0.50	3.6	1.0	3709601
Dissolved Vanadium (V)	ug/L	<5.0	5.0	<2.5	2.5	<5.0	5.0	3709601
Dissolved Zinc (Zn)	ug/L	<25	25	<25	25	<50	50	3709601
RDL = Reportable Detection Limit								
QC Batch = Quality Control Batch								

Maxxam Job #: B4E2663  
Report Date: 2014/08/18

MMM Group Limited  
Client Project #: 14-12815-001-PH2  
Site Location: 770 SOMERSET ST.

## TEST SUMMARY

**Maxxam ID:** XA9547  
**Sample ID:** MW1  
**Matrix:** Water

**Collected:** 2014/08/08  
**Shipped:**  
**Received:** 2014/08/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chloride by Automated Colourimetry	AC	3706788	N/A	2014/08/12	Alina Dobreanu
Chromium (VI) in Water	IC	3706674	N/A	2014/08/14	Sally Coughlin
Free (WAD) Cyanide	TECH/CN	3706729	N/A	2014/08/13	Louise Harding
Mercury	CVAA	3709077	2014/08/13	2014/08/14	Ron Morrison
Dissolved Metals by ICPMS	ICP/MS	3709601	N/A	2014/08/15	Prempal Bhatti

**Maxxam ID:** XA9548  
**Sample ID:** MW2  
**Matrix:** Water

**Collected:** 2014/08/08  
**Shipped:**  
**Received:** 2014/08/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chloride by Automated Colourimetry	AC	3706788	N/A	2014/08/12	Alina Dobreanu
Chromium (VI) in Water	IC	3706674	N/A	2014/08/14	Sally Coughlin
Free (WAD) Cyanide	TECH/CN	3706729	N/A	2014/08/13	Louise Harding
Mercury	CVAA	3709077	2014/08/13	2014/08/14	Ron Morrison
Dissolved Metals by ICPMS	ICP/MS	3709601	N/A	2014/08/15	Prempal Bhatti

**Maxxam ID:** XA9549  
**Sample ID:** MW4  
**Matrix:** Water

**Collected:** 2014/08/08  
**Shipped:**  
**Received:** 2014/08/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chloride by Automated Colourimetry	AC	3706788	N/A	2014/08/12	Alina Dobreanu
Chromium (VI) in Water	IC	3706674	N/A	2014/08/14	Sally Coughlin
Free (WAD) Cyanide	TECH/CN	3706729	N/A	2014/08/13	Louise Harding
Mercury	CVAA	3707416	2014/08/12	2014/08/13	Ron Morrison
Dissolved Metals by ICPMS	ICP/MS	3709601	N/A	2014/08/15	Prempal Bhatti

**Maxxam ID:** XA9550  
**Sample ID:** MW5A  
**Matrix:** Water

**Collected:** 2014/08/07  
**Shipped:**  
**Received:** 2014/08/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chloride by Automated Colourimetry	AC	3706788	N/A	2014/08/12	Alina Dobreanu
Chromium (VI) in Water	IC	3706674	N/A	2014/08/14	Sally Coughlin
Free (WAD) Cyanide	TECH/CN	3706729	N/A	2014/08/13	Louise Harding
Mercury	CVAA	3707416	2014/08/12	2014/08/13	Ron Morrison
Dissolved Metals by ICPMS	ICP/MS	3709601	N/A	2014/08/15	Prempal Bhatti

**Maxxam ID:** XA9551  
**Sample ID:** MW5B  
**Matrix:** Water

**Collected:** 2014/08/08  
**Shipped:**  
**Received:** 2014/08/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chloride by Automated Colourimetry	AC	3706788	N/A	2014/08/12	Alina Dobreanu
Chromium (VI) in Water	IC	3706674	N/A	2014/08/14	Sally Coughlin

Maxxam Job #: B4E2663  
Report Date: 2014/08/18

MMM Group Limited  
Client Project #: 14-12815-001-PH2  
Site Location: 770 SOMERSET ST.

## TEST SUMMARY

**Maxxam ID:** XA9551  
**Sample ID:** MW5B  
**Matrix:** Water

**Collected:** 2014/08/08  
**Shipped:**  
**Received:** 2014/08/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Free (WAD) Cyanide	TECH/CN	3706729	N/A	2014/08/13	Louise Harding
Mercury	CVAA	3709077	2014/08/13	2014/08/14	Ron Morrison
Dissolved Metals by ICPMS	ICP/MS	3709601	N/A	2014/08/15	Prempal Bhatti

**Maxxam ID:** XA9552  
**Sample ID:** MW9A  
**Matrix:** Water

**Collected:** 2014/08/07  
**Shipped:**  
**Received:** 2014/08/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chloride by Automated Colourimetry	AC	3706788	N/A	2014/08/12	Alina Dobreanu
Chromium (VI) in Water	IC	3706674	N/A	2014/08/14	Sally Coughlin
Free (WAD) Cyanide	TECH/CN	3706729	N/A	2014/08/13	Louise Harding
Mercury	CVAA	3707416	2014/08/12	2014/08/13	Ron Morrison
Dissolved Metals by ICPMS	ICP/MS	3709601	N/A	2014/08/18	Prempal Bhatti

**Maxxam ID:** XA9553  
**Sample ID:** MW9B  
**Matrix:** Water

**Collected:** 2014/08/08  
**Shipped:**  
**Received:** 2014/08/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chloride by Automated Colourimetry	AC	3706788	N/A	2014/08/12	Alina Dobreanu
Chromium (VI) in Water	IC	3706674	N/A	2014/08/14	Sally Coughlin
Free (WAD) Cyanide	TECH/CN	3706729	N/A	2014/08/13	Louise Harding
Mercury	CVAA	3707416	2014/08/12	2014/08/13	Ron Morrison
Dissolved Metals by ICPMS	ICP/MS	3709601	N/A	2014/08/15	Prempal Bhatti

**Maxxam ID:** XA9553 Dup  
**Sample ID:** MW9B  
**Matrix:** Water

**Collected:** 2014/08/08  
**Shipped:**  
**Received:** 2014/08/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury	CVAA	3707416	2014/08/12	2014/08/13	Ron Morrison

**Maxxam ID:** XA9554  
**Sample ID:** MW10  
**Matrix:** Water

**Collected:** 2014/08/08  
**Shipped:**  
**Received:** 2014/08/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chloride by Automated Colourimetry	AC	3706788	N/A	2014/08/12	Alina Dobreanu
Chromium (VI) in Water	IC	3706674	N/A	2014/08/14	Sally Coughlin
Free (WAD) Cyanide	TECH/CN	3706729	N/A	2014/08/13	Louise Harding
Mercury	CVAA	3709077	2014/08/13	2014/08/14	Ron Morrison
Dissolved Metals by ICPMS	ICP/MS	3709601	N/A	2014/08/15	Prempal Bhatti



Maxxam Job #: B4E2663  
Report Date: 2014/08/18

MMM Group Limited  
Client Project #: 14-12815-001-PH2  
Site Location: 770 SOMERSET ST.

## TEST SUMMARY

**Maxxam ID:** XA9555  
**Sample ID:** MW11  
**Matrix:** Water

**Collected:** 2014/08/08  
**Shipped:**  
**Received:** 2014/08/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chloride by Automated Colourimetry	AC	3706788	N/A	2014/08/12	Alina Dobreanu
Chromium (VI) in Water	IC	3706674	N/A	2014/08/14	Sally Coughlin
Free (WAD) Cyanide	TECH/CN	3706729	N/A	2014/08/13	Louise Harding
Mercury	CVAA	3709077	2014/08/13	2014/08/14	Ron Morrison
Dissolved Metals by ICPMS	ICP/MS	3709601	N/A	2014/08/15	Prempal Bhatti

**Maxxam ID:** XA9555 Dup  
**Sample ID:** MW11  
**Matrix:** Water

**Collected:** 2014/08/08  
**Shipped:**  
**Received:** 2014/08/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Mercury	CVAA	3709077	2014/08/13	2014/08/14	Ron Morrison

**Maxxam ID:** XA9556  
**Sample ID:** DUP-1  
**Matrix:** Water

**Collected:** 2014/08/07  
**Shipped:**  
**Received:** 2014/08/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chloride by Automated Colourimetry	AC	3706788	N/A	2014/08/12	Alina Dobreanu
Chromium (VI) in Water	IC	3706674	N/A	2014/08/14	Sally Coughlin
Free (WAD) Cyanide	TECH/CN	3706729	N/A	2014/08/13	Louise Harding
Mercury	CVAA	3709077	2014/08/12	2014/08/14	Ron Morrison
Dissolved Metals by ICPMS	ICP/MS	3709601	N/A	2014/08/15	Prempal Bhatti

Maxxam Job #: B4E2663  
Report Date: 2014/08/18

MMM Group Limited  
Client Project #: 14-12815-001-PH2  
Site Location: 770 SOMERSET ST.

## GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	16.0°C
Package 2	11.0°C

Hexavalent Chromium: Some Detection Limits were raised due to matrix interferences.

Sample XA9547-01 : Metals Analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Sample XA9548-01 : Metals Analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Sample XA9549-01 : Metals Analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Sample XA9550-01 : Metals Analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Sample XA9551-01 : Metals Analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Sample XA9553-01 : Metals Analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Sample XA9554-01 : Metals Analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Sample XA9555-01 : Metals Analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Sample XA9556-01 : Metals Analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

**Results relate only to the items tested.**

Maxxam Job #: B4E2663  
Report Date: 2014/08/18

MMM Group Limited  
Client Project #: 14-12815-001-PH2  
Site Location: 770 SOMERSET ST.

### QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
3706674	SAC	Matrix Spike	Chromium (VI)	2014/08/14		100	%	80 - 120
3706674	SAC	Spiked Blank	Chromium (VI)	2014/08/14		102	%	80 - 120
3706674	SAC	Method Blank	Chromium (VI)	2014/08/14	<0.50		ug/L	
3706729	LHA	Matrix Spike	Free Cyanide	2014/08/13		89	%	80 - 120
3706729	LHA	Spiked Blank	Free Cyanide	2014/08/13		104	%	80 - 120
3706729	LHA	Method Blank	Free Cyanide	2014/08/13	<2		ug/L	
3706788	ADB	Matrix Spike	Dissolved Chloride (Cl)	2014/08/12		NC	%	80 - 120
3706788	ADB	Spiked Blank	Dissolved Chloride (Cl)	2014/08/12		105	%	80 - 120
3706788	ADB	Method Blank	Dissolved Chloride (Cl)	2014/08/12	<1		mg/L	
3707416	RON	Matrix Spike [XA9553-05]	Mercury (Hg)	2014/08/13		111	%	75 - 125
3707416	RON	Spiked Blank	Mercury (Hg)	2014/08/13		112	%	80 - 120
3707416	RON	Method Blank	Mercury (Hg)	2014/08/13	<0.1		ug/L	
3707416	RON	RPD [XA9553-05]	Mercury (Hg)	2014/08/13	NC		%	20
3709077	RON	Matrix Spike [XA9555-05]	Mercury (Hg)	2014/08/14		102	%	75 - 125
3709077	RON	Spiked Blank	Mercury (Hg)	2014/08/14		95	%	80 - 120
3709077	RON	Method Blank	Mercury (Hg)	2014/08/14	<0.1		ug/L	
3709077	RON	RPD [XA9555-05]	Mercury (Hg)	2014/08/14	NC		%	20
3709601	PBA	Matrix Spike	Dissolved Antimony (Sb)	2014/08/18		109	%	80 - 120
			Dissolved Arsenic (As)	2014/08/18		102	%	80 - 120
			Dissolved Barium (Ba)	2014/08/18		100	%	80 - 120
			Dissolved Beryllium (Be)	2014/08/18		102	%	80 - 120
			Dissolved Boron (B)	2014/08/18		NC	%	80 - 120
			Dissolved Cadmium (Cd)	2014/08/18		102	%	80 - 120
			Dissolved Chromium (Cr)	2014/08/18		103	%	80 - 120
			Dissolved Cobalt (Co)	2014/08/18		102	%	80 - 120
			Dissolved Copper (Cu)	2014/08/18		96	%	80 - 120
			Dissolved Lead (Pb)	2014/08/18		97	%	80 - 120
			Dissolved Molybdenum (Mo)	2014/08/18		108	%	80 - 120
			Dissolved Nickel (Ni)	2014/08/18		99	%	80 - 120
			Dissolved Selenium (Se)	2014/08/18		80	%	80 - 120
			Dissolved Silver (Ag)	2014/08/18		76 (1)	%	80 - 120
			Dissolved Sodium (Na)	2014/08/18		NC	%	80 - 120
			Dissolved Thallium (Tl)	2014/08/18		96	%	80 - 120
			Dissolved Uranium (U)	2014/08/18		100	%	80 - 120
			Dissolved Vanadium (V)	2014/08/18		105	%	80 - 120
			Dissolved Zinc (Zn)	2014/08/18		98	%	80 - 120
3709601	PBA	Spiked Blank	Dissolved Antimony (Sb)	2014/08/15		107	%	80 - 120
			Dissolved Arsenic (As)	2014/08/15		101	%	80 - 120
			Dissolved Barium (Ba)	2014/08/15		102	%	80 - 120
			Dissolved Beryllium (Be)	2014/08/15		103	%	80 - 120
			Dissolved Boron (B)	2014/08/15		103	%	80 - 120
			Dissolved Cadmium (Cd)	2014/08/15		103	%	80 - 120
			Dissolved Chromium (Cr)	2014/08/15		103	%	80 - 120
			Dissolved Cobalt (Co)	2014/08/15		103	%	80 - 120
			Dissolved Copper (Cu)	2014/08/15		99	%	80 - 120
			Dissolved Lead (Pb)	2014/08/15		99	%	80 - 120
			Dissolved Molybdenum (Mo)	2014/08/15		103	%	80 - 120
			Dissolved Nickel (Ni)	2014/08/15		99	%	80 - 120
			Dissolved Selenium (Se)	2014/08/15		100	%	80 - 120
			Dissolved Silver (Ag)	2014/08/15		97	%	80 - 120
			Dissolved Sodium (Na)	2014/08/15		107	%	80 - 120
			Dissolved Thallium (Tl)	2014/08/15		100	%	80 - 120
			Dissolved Uranium (U)	2014/08/15		99	%	80 - 120

Maxxam Job #: B4E2663  
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MMM Group Limited  
Client Project #: 14-12815-001-PH2  
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### QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
3709601	PBA	Method Blank	Dissolved Vanadium (V)	2014/08/15		102	%	80 - 120
			Dissolved Zinc (Zn)	2014/08/15		102	%	80 - 120
			Dissolved Antimony (Sb)	2014/08/15	<0.50		ug/L	
			Dissolved Arsenic (As)	2014/08/15	<1.0		ug/L	
			Dissolved Barium (Ba)	2014/08/15	<2.0		ug/L	
			Dissolved Beryllium (Be)	2014/08/15	<0.50		ug/L	
			Dissolved Boron (B)	2014/08/15	<10		ug/L	
			Dissolved Cadmium (Cd)	2014/08/15	<0.10		ug/L	
			Dissolved Chromium (Cr)	2014/08/15	<5.0		ug/L	
			Dissolved Cobalt (Co)	2014/08/15	<0.50		ug/L	
			Dissolved Copper (Cu)	2014/08/15	<1.0		ug/L	
			Dissolved Lead (Pb)	2014/08/15	<0.50		ug/L	
			Dissolved Molybdenum (Mo)	2014/08/15	<0.50		ug/L	
			Dissolved Nickel (Ni)	2014/08/15	<1.0		ug/L	
			Dissolved Selenium (Se)	2014/08/15	<2.0		ug/L	
			Dissolved Silver (Ag)	2014/08/15	<0.10		ug/L	
			Dissolved Sodium (Na)	2014/08/15	800 , RDL=100		ug/L	
			Dissolved Thallium (Tl)	2014/08/15	<0.050		ug/L	
			Dissolved Uranium (U)	2014/08/15	<0.10		ug/L	
			Dissolved Vanadium (V)	2014/08/15	<0.50		ug/L	
			Dissolved Zinc (Zn)	2014/08/15	<5.0		ug/L	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of the native sample concentration).

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

Maxxam Job #: B4E2663  
Report Date: 2014/08/18

MMM Group Limited  
Client Project #: 14-12815-001-PH2  
Site Location: 770 SOMERSET ST.

## VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

*Cristina Carriere*

Cristina Carriere, Scientific Services

*Ewa Pranjic*



Ewa Pranjic, M.Sc., C.Chem, Scientific Specialist

---

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Your Project #: 14-12815-001-PH2  
Site Location: 770 SAMERSET ST.  
Your C.O.C. #: 480446-02-01

**Attention: Carolyn Adams**

MMM Group Limited  
100 Commerce Valley Dr West  
Thornhill, ON  
CANADA L3T 0A1

**Report Date: 2014/10/17**

Report #: R3191958

Version: 1 - Final

## **CERTIFICATE OF ANALYSIS**

**MAXXAM JOB #: B4I8861**

**Received: 2014/10/09, 13:50**

Sample Matrix: Water  
# Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Chloride by Automated Colourimetry (1)	2	N/A	2014/10/15	CAM SOP-00463	EPA 325.2 m
Dissolved Metals by ICPMS	2	N/A	2014/10/14	OTT SOP-00003	EPA 6020

**Remarks:**

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act.

The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons. The extraction date for samples field preserved with methanol for F1 and Volatile Organic Compounds is considered to be the date sampled.

Maxxam Analytics is accredited for all specific parameters as required by Ontario Regulation 153/04. Maxxam Analytics is limited in liability to the actual cost of analysis unless otherwise agreed in writing. There is no other warranty expressed or implied. Samples will be retained at Maxxam Analytics for three weeks from receipt of data or as per contract.

\* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Maxxam Analytics Mississauga

### Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Jolanta Goralczyk, Project Manager

Email: JGoralczyk@maxxam.ca

Phone# (905)817-5751

=====

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Job #: B4I8861  
Report Date: 2014/10/17

MMM Group Limited  
Client Project #: 14-12815-001-PH2  
Site Location: 770 SAMERSET ST.  
Sampler Initials: AR

### RESULTS OF ANALYSES OF WATER

<b>Maxxam ID</b>		XY1200	XY1201		
<b>Sampling Date</b>		2014/10/09	2014/10/09		
<b>COC Number</b>		480446-02-01	480446-02-01		
	<b>Units</b>	<b>MW5C</b>	<b>DUP-1</b>	<b>RDL</b>	<b>QC Batch</b>
<b>Inorganics</b>					
Dissolved Chloride (Cl)	mg/L	6500	7100	80	3782831
RDL = Reportable Detection Limit					
QC Batch = Quality Control Batch					



Maxxam Job #: B4I8861  
Report Date: 2014/10/17

MMM Group Limited  
Client Project #: 14-12815-001-PH2  
Site Location: 770 SAMERSET ST.  
Sampler Initials: AR

### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		XY1200	XY1201		
Sampling Date		2014/10/09	2014/10/09		
COC Number		480446-02-01	480446-02-01		
	Units	MW5C	DUP-1	RDL	QC Batch
<b>Metals</b>					
Dissolved Antimony (Sb)	ug/L	<5	<5	5	3783257
Dissolved Arsenic (As)	ug/L	12	12	10	3783257
Dissolved Barium (Ba)	ug/L	560	550	20	3783257
Dissolved Beryllium (Be)	ug/L	<5	<5	5	3783257
Dissolved Boron (B)	ug/L	490	500	100	3783257
Dissolved Cadmium (Cd)	ug/L	<1	<1	1	3783257
Dissolved Chromium (Cr)	ug/L	<50	<50	50	3783257
Dissolved Cobalt (Co)	ug/L	5	6	5	3783257
Dissolved Copper (Cu)	ug/L	<10	<10	10	3783257
Dissolved Lead (Pb)	ug/L	<5	<5	5	3783257
Dissolved Molybdenum (Mo)	ug/L	<5	<5	5	3783257
Dissolved Nickel (Ni)	ug/L	23	23	10	3783257
Dissolved Selenium (Se)	ug/L	<20	<20	20	3783257
Dissolved Silver (Ag)	ug/L	<1	<1	1	3783257
Dissolved Sodium (Na)	ug/L	4000000	4000000	1000	3783257
Dissolved Thallium (Tl)	ug/L	0.7	0.6	0.5	3783257
Dissolved Uranium (U)	ug/L	4	4	1	3783257
Dissolved Vanadium (V)	ug/L	9	21	5	3783257
Dissolved Zinc (Zn)	ug/L	<50	<50	50	3783257
RDL = Reportable Detection Limit					
QC Batch = Quality Control Batch					

Maxxam Job #: B4I8861  
Report Date: 2014/10/17

MMM Group Limited  
Client Project #: 14-12815-001-PH2  
Site Location: 770 SAMERSET ST.  
Sampler Initials: AR

## TEST SUMMARY

**Maxxam ID:** XY1200  
**Sample ID:** MW5C  
**Matrix:** Water

**Collected:** 2014/10/09  
**Shipped:**  
**Received:** 2014/10/09

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chloride by Automated Colourimetry	AC	3782831	N/A	2014/10/15	Deonarine Ramnarine
Dissolved Metals by ICPMS	ICP/MS	3783257	N/A	2014/10/14	Raigamage Perera

**Maxxam ID:** XY1201  
**Sample ID:** DUP-1  
**Matrix:** Water

**Collected:** 2014/10/09  
**Shipped:**  
**Received:** 2014/10/09

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chloride by Automated Colourimetry	AC	3782831	N/A	2014/10/15	Deonarine Ramnarine
Dissolved Metals by ICPMS	ICP/MS	3783257	N/A	2014/10/14	Raigamage Perera

Maxxam Job #: B4I8861  
Report Date: 2014/10/17

MMM Group Limited  
Client Project #: 14-12815-001-PH2  
Site Location: 770 SAMERSET ST.  
Sampler Initials: AR

### GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	6.3°C
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Sample XY1200-01 : Metal Analysis:

Sample was diluted due to high concentrations of metals. RDLs were adjusted accordingly.

Sample XY1201-01 : Metal Analysis:

Sample was diluted due to high concentrations of metals. RDLs were adjusted accordingly.

**Results relate only to the items tested.**

Maxxam Job #: B4I8861  
Report Date: 2014/10/17

MMM Group Limited  
Client Project #: 14-12815-001-PH2  
Site Location: 770 SAMERSET ST.  
Sampler Initials: AR

### QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
3782831	DRM	Matrix Spike	Dissolved Chloride (Cl)	2014/10/15		NC	%	80 - 120
3782831	DRM	Spiked Blank	Dissolved Chloride (Cl)	2014/10/15		105	%	80 - 120
3782831	DRM	Method Blank	Dissolved Chloride (Cl)	2014/10/15	<1		mg/L	
3782831	DRM	RPD	Dissolved Chloride (Cl)	2014/10/15	0.54		%	20
3783257	RAI	Matrix Spike	Dissolved Antimony (Sb)	2014/10/14		106	%	80 - 120
			Dissolved Arsenic (As)	2014/10/14		100	%	80 - 120
			Dissolved Barium (Ba)	2014/10/14		101	%	80 - 120
			Dissolved Beryllium (Be)	2014/10/14		105	%	80 - 120
			Dissolved Boron (B)	2014/10/14		108	%	80 - 120
			Dissolved Cadmium (Cd)	2014/10/14		108	%	80 - 120
			Dissolved Chromium (Cr)	2014/10/14		105	%	80 - 120
			Dissolved Cobalt (Co)	2014/10/14		103	%	80 - 120
			Dissolved Copper (Cu)	2014/10/14		100	%	80 - 120
			Dissolved Lead (Pb)	2014/10/14		101	%	80 - 120
			Dissolved Molybdenum (Mo)	2014/10/14		107	%	80 - 120
			Dissolved Nickel (Ni)	2014/10/14		102	%	80 - 120
			Dissolved Selenium (Se)	2014/10/14		107	%	80 - 120
			Dissolved Silver (Ag)	2014/10/14		102	%	80 - 120
			Dissolved Sodium (Na)	2014/10/14		NC	%	80 - 120
			Dissolved Thallium (Tl)	2014/10/14		100	%	80 - 120
			Dissolved Uranium (U)	2014/10/14		102	%	80 - 120
			Dissolved Vanadium (V)	2014/10/14		104	%	80 - 120
			Dissolved Zinc (Zn)	2014/10/14		110	%	80 - 120
3783257	RAI	Spiked Blank	Dissolved Antimony (Sb)	2014/10/14		103	%	80 - 120
			Dissolved Arsenic (As)	2014/10/14		100	%	80 - 120
			Dissolved Barium (Ba)	2014/10/14		101	%	80 - 120
			Dissolved Beryllium (Be)	2014/10/14		104	%	80 - 120
			Dissolved Boron (B)	2014/10/14		104	%	80 - 120
			Dissolved Cadmium (Cd)	2014/10/14		105	%	80 - 120
			Dissolved Chromium (Cr)	2014/10/14		103	%	80 - 120
			Dissolved Cobalt (Co)	2014/10/14		101	%	80 - 120
			Dissolved Copper (Cu)	2014/10/14		99	%	80 - 120
			Dissolved Lead (Pb)	2014/10/14		101	%	80 - 120
			Dissolved Molybdenum (Mo)	2014/10/14		103	%	80 - 120
			Dissolved Nickel (Ni)	2014/10/14		102	%	80 - 120
			Dissolved Selenium (Se)	2014/10/14		103	%	80 - 120
			Dissolved Silver (Ag)	2014/10/14		99	%	80 - 120
			Dissolved Sodium (Na)	2014/10/14		101	%	80 - 120
			Dissolved Thallium (Tl)	2014/10/14		101	%	80 - 120
			Dissolved Uranium (U)	2014/10/14		100	%	80 - 120
			Dissolved Vanadium (V)	2014/10/14		101	%	80 - 120
			Dissolved Zinc (Zn)	2014/10/14		102	%	80 - 120
3783257	RAI	Method Blank	Dissolved Antimony (Sb)	2014/10/14	<0.5		ug/L	
			Dissolved Arsenic (As)	2014/10/14	<1		ug/L	
			Dissolved Barium (Ba)	2014/10/14	<2		ug/L	
			Dissolved Beryllium (Be)	2014/10/14	<0.5		ug/L	
			Dissolved Boron (B)	2014/10/14	<10		ug/L	
			Dissolved Cadmium (Cd)	2014/10/14	<0.1		ug/L	
			Dissolved Chromium (Cr)	2014/10/14	<5		ug/L	
			Dissolved Cobalt (Co)	2014/10/14	<0.5		ug/L	
			Dissolved Copper (Cu)	2014/10/14	<1		ug/L	
			Dissolved Lead (Pb)	2014/10/14	<0.5		ug/L	

Maxxam Job #: B4I8861  
Report Date: 2014/10/17

MMM Group Limited  
Client Project #: 14-12815-001-PH2  
Site Location: 770 SAMERSET ST.  
Sampler Initials: AR

### QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
3783257	RAI	RPD	Dissolved Molybdenum (Mo)	2014/10/14	<0.5		ug/L	
			Dissolved Nickel (Ni)	2014/10/14	<1		ug/L	
			Dissolved Selenium (Se)	2014/10/14	<2		ug/L	
			Dissolved Silver (Ag)	2014/10/14	<0.1		ug/L	
			Dissolved Sodium (Na)	2014/10/14	<100		ug/L	
			Dissolved Thallium (Tl)	2014/10/14	<0.05		ug/L	
			Dissolved Uranium (U)	2014/10/14	<0.1		ug/L	
			Dissolved Vanadium (V)	2014/10/14	0.7 , RDL=0.5		ug/L	
			Dissolved Zinc (Zn)	2014/10/14	<5		ug/L	
			Dissolved Arsenic (As)	2014/10/14	NC		%	25
			Dissolved Barium (Ba)	2014/10/14	1.0		%	25
			Dissolved Boron (B)	2014/10/14	1.3		%	25
			Dissolved Cadmium (Cd)	2014/10/14	NC		%	25
			Dissolved Chromium (Cr)	2014/10/14	NC		%	25
			Dissolved Copper (Cu)	2014/10/14	NC		%	25
			Dissolved Lead (Pb)	2014/10/14	NC		%	25
			Dissolved Nickel (Ni)	2014/10/14	NC		%	25
			Dissolved Selenium (Se)	2014/10/14	NC		%	25
			Dissolved Silver (Ag)	2014/10/14	NC		%	25
			Dissolved Sodium (Na)	2014/10/14	0.36		%	25
			Dissolved Vanadium (V)	2014/10/14	NC		%	25
			Dissolved Zinc (Zn)	2014/10/14	NC		%	25

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of the native sample concentration).


NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

Maxxam Job #: B4I8861  
Report Date: 2014/10/17

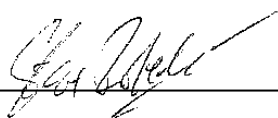
MMM Group Limited  
Client Project #: 14-12815-001-PH2  
Site Location: 770 SAMERSET ST.  
Sampler Initials: AR

### VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Ewa Pranjic, M.Sc., C.Chem, Scientific Specialist



Steve Roberts, Lab Supervisor, Ottawa

---

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Your Project #: 1412815-001-PH2  
Site#: 770 Somerset St  
Site Location: 770 Somerset St  
Your C.O.C. #: 493400-01-01

**Attention: Allison Read**  
MMM Group Limited  
100 Commerce Valley Dr West  
Thornhill, ON  
CANADA L3T 0A1

**Report Date: 2014/12/10**  
**Report #: R3252642**  
**Version: 1**

## **CERTIFICATE OF ANALYSIS**

**MAXXAM JOB #: B4M9028**  
**Received: 2014/12/03, 14:10**

Sample Matrix: Water  
# Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Chloride by Automated Colourimetry	2	N/A	2014/12/05	CAM SOP-00463	EPA 325.2 m
Lab Filtered Metals by ICPMS (1)	2	2014/12/08	2014/12/08	OTT SOP-00003	EPA 6020

### **Remarks:**

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act.

The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons. The extraction date for samples field preserved with methanol for F1 and Volatile Organic Compounds is considered to be the date sampled.

Maxxam Analytics is accredited for all specific parameters as required by Ontario Regulation 153/04. Maxxam Analytics is limited in liability to the actual cost of analysis unless otherwise agreed in writing. There is no other warranty expressed or implied. Samples will be retained at Maxxam Analytics for three weeks from receipt of data or as per contract.

\* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Maxxam Ottawa



Your Project #: 1412815-001-PH2  
Site#: 770 Somerset St  
Site Location: 770 Somerset St  
Your C.O.C. #: 493400-01-01

**Attention: Allison Read**

MMM Group Limited  
100 Commerce Valley Dr West  
Thornhill, ON  
CANADA L3T 0A1

**Report Date: 2014/12/10**  
**Report #: R3252642**  
**Version: 1**

**CERTIFICATE OF ANALYSIS**

-2-

**Encryption Key**

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Jolanta Goralczyk, Project Manager  
Email: JGoralczyk@maxxam.ca  
Phone# (905) 817-5751

=====

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Total cover pages: 2

Maxxam Job #: B4M9028  
Report Date: 2014/12/10

MMM Group Limited  
Client Project #: 1412815-001-PH2  
Site Location: 770 Somerset St  
Sampler Initials: MH

### RESULTS OF ANALYSES OF WATER

Maxxam ID		YS3403	YS3405		
Sampling Date		2014/12/03 09:00	2014/12/03 10:00		
COC Number		493400-01-01	493400-01-01		
	<b>Units</b>	<b>MW5C 1A</b>	<b>MW5C 2A</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Inorganics</b>					
Dissolved Chloride (Cl)	mg/L	6700	6600	70	3849098
RDL = Reportable Detection Limit QC Batch = Quality Control Batch					

Maxxam Job #: B4M9028  
Report Date: 2014/12/10

MMM Group Limited  
Client Project #: 1412815-001-PH2  
Site Location: 770 Somerset St  
Sampler Initials: MH

### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		YS3404	YS3404	YS3406		
Sampling Date		2014/12/03 09:00	2014/12/03 09:00	2014/12/03 09:00		
COC Number		493400-01-01	493400-01-01	493400-01-01		
	<b>Units</b>	<b>MW5C 1B</b>	<b>MW5C 1B Lab-Dup</b>	<b>MW5C 2B</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Metals</b>						
Dissolved Antimony (Sb)	ug/L	<5.0	<5.0	<5.0	5.0	3851615
Dissolved Arsenic (As)	ug/L	<10	<10	<10	10	3851615
Dissolved Barium (Ba)	ug/L	310	320	310	20	3851615
Dissolved Beryllium (Be)	ug/L	<5.0	<5.0	<5.0	5.0	3851615
Dissolved Boron (B)	ug/L	900	910	920	100	3851615
Dissolved Cadmium (Cd)	ug/L	<1.0	<1.0	<1.0	1.0	3851615
Dissolved Chromium (Cr)	ug/L	<50	<50	<50	50	3851615
Dissolved Cobalt (Co)	ug/L	7.3	7.5	6.8	5.0	3851615
Dissolved Copper (Cu)	ug/L	<10	<10	<10	10	3851615
Dissolved Lead (Pb)	ug/L	15	15	14	5.0	3851615
Dissolved Molybdenum (Mo)	ug/L	<5.0	<5.0	<5.0	5.0	3851615
Dissolved Nickel (Ni)	ug/L	29	28	28	10	3851615
Dissolved Selenium (Se)	ug/L	<20	<20	<20	20	3851615
Dissolved Silver (Ag)	ug/L	<1.0	<1.0	<1.0	1.0	3851615
Dissolved Sodium (Na)	ug/L	3700000	3700000	3700000	1000	3851615
Dissolved Thallium (Tl)	ug/L	0.86	0.81	0.72	0.50	3851615
Dissolved Uranium (U)	ug/L	5.8	6.0	5.8	1.0	3851615
Dissolved Vanadium (V)	ug/L	<5.0	6.2	12	5.0	3851615
Dissolved Zinc (Zn)	ug/L	<50	<50	<50	50	3851615

RDL = Reportable Detection Limit  
QC Batch = Quality Control Batch

Maxxam Job #: B4M9028  
Report Date: 2014/12/10

MMM Group Limited  
Client Project #: 1412815-001-PH2  
Site Location: 770 Somerset St  
Sampler Initials: MH

### Test Summary

**Maxxam ID** YS3403  
**Sample ID** MW5C 1A  
**Matrix** Water

**Collected** 2014/12/03  
**Shipped**  
**Received** 2014/12/03

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Chloride by Automated Colourimetry	AC	3849098	N/A	2014/12/05	Deonarine Ramnarine

**Maxxam ID** YS3404  
**Sample ID** MW5C 1B  
**Matrix** Water

**Collected** 2014/12/03  
**Shipped**  
**Received** 2014/12/03

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Lab Filtered Metals by ICPMS	ICP/MS	3851615	2014/12/08	2014/12/08	Raigamage Perera

**Maxxam ID** YS3404 Dup  
**Sample ID** MW5C 1B  
**Matrix** Water

**Collected** 2014/12/03  
**Shipped**  
**Received** 2014/12/03

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Lab Filtered Metals by ICPMS	ICP/MS	3851615	2014/12/08	2014/12/08	Raigamage Perera

**Maxxam ID** YS3405  
**Sample ID** MW5C 2A  
**Matrix** Water

**Collected** 2014/12/03  
**Shipped**  
**Received** 2014/12/03

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Chloride by Automated Colourimetry	AC	3849098	N/A	2014/12/05	Deonarine Ramnarine

**Maxxam ID** YS3406  
**Sample ID** MW5C 2B  
**Matrix** Water

**Collected** 2014/12/03  
**Shipped**  
**Received** 2014/12/03

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Lab Filtered Metals by ICPMS	ICP/MS	3851615	2014/12/08	2014/12/08	Raigamage Perera

Maxxam Job #: B4M9028  
Report Date: 2014/12/10

MMM Group Limited  
Client Project #: 1412815-001-PH2  
Site Location: 770 Somerset St  
Sampler Initials: MH

Package 1	10.0°C
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Each temperature is the average of up to three cooler temperatures taken at receipt

**GENERAL COMMENTS**

Sample YS3404-01: Metal Analysis:

Sample was diluted due to high concentrations of elements effecting the Internal Standard. RDLs were adjusted accordingly.

Sample was lab filtered. Please view results for discretion.

Sample YS3406-01: Metal Analysis:

Sample was diluted due to high concentrations of elements effecting the Internal Standard. RDLs were adjusted accordingly.

Sample was lab filtered. Please view results for discretion.

**Results relate only to the items tested.**

MMM Group Limited  
Attention: Allison Read  
Client Project #: 1412815-001-PH2  
P.O. #:  
Site Location: 770 Somerset St

Quality Assurance Report  
Maxxam Job Number: TB4M9028

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3849098 DRM	Matrix Spike	Dissolved Chloride (Cl)	2014/12/05		NC	%	80 - 120
	Spiked Blank	Dissolved Chloride (Cl)	2014/12/05		101	%	80 - 120
	Method Blank	Dissolved Chloride (Cl)	2014/12/05	<1		mg/L	
	RPD	Dissolved Chloride (Cl)	2014/12/05	2.4		%	20
3851615 RAI	Matrix Spike [YS3404-01]	Dissolved Antimony (Sb)	2014/12/08		110	%	80 - 120
		Dissolved Arsenic (As)	2014/12/08		98	%	80 - 120
		Dissolved Barium (Ba)	2014/12/08		NC	%	80 - 120
		Dissolved Beryllium (Be)	2014/12/08		103	%	80 - 120
		Dissolved Boron (B)	2014/12/08		NC	%	80 - 120
		Dissolved Cadmium (Cd)	2014/12/08		106	%	80 - 120
		Dissolved Chromium (Cr)	2014/12/08		99	%	80 - 120
		Dissolved Cobalt (Co)	2014/12/08		101	%	80 - 120
		Dissolved Copper (Cu)	2014/12/08		100	%	80 - 120
		Dissolved Lead (Pb)	2014/12/08		99	%	80 - 120
		Dissolved Molybdenum (Mo)	2014/12/08		105	%	80 - 120
		Dissolved Nickel (Ni)	2014/12/08		101	%	80 - 120
		Dissolved Selenium (Se)	2014/12/08		109	%	80 - 120
		Dissolved Silver (Ag)	2014/12/08		98	%	80 - 120
		Dissolved Sodium (Na)	2014/12/08		NC	%	80 - 120
		Dissolved Thallium (Tl)	2014/12/08		99	%	80 - 120
		Dissolved Uranium (U)	2014/12/08		101	%	80 - 120
		Dissolved Vanadium (V)	2014/12/08		99	%	80 - 120
		Dissolved Zinc (Zn)	2014/12/08		105	%	80 - 120
	Spiked Blank	Dissolved Antimony (Sb)	2014/12/08		104	%	80 - 120
		Dissolved Arsenic (As)	2014/12/08		97	%	80 - 120
		Dissolved Barium (Ba)	2014/12/08		95	%	80 - 120
		Dissolved Beryllium (Be)	2014/12/08		101	%	80 - 120
		Dissolved Boron (B)	2014/12/08		101	%	80 - 120
		Dissolved Cadmium (Cd)	2014/12/08		104	%	80 - 120
		Dissolved Chromium (Cr)	2014/12/08		99	%	80 - 120
		Dissolved Cobalt (Co)	2014/12/08		101	%	80 - 120
		Dissolved Copper (Cu)	2014/12/08		100	%	80 - 120
		Dissolved Lead (Pb)	2014/12/08		100	%	80 - 120
		Dissolved Molybdenum (Mo)	2014/12/08		100	%	80 - 120
		Dissolved Nickel (Ni)	2014/12/08		99	%	80 - 120
		Dissolved Selenium (Se)	2014/12/08		106	%	80 - 120
		Dissolved Silver (Ag)	2014/12/08		98	%	80 - 120
		Dissolved Sodium (Na)	2014/12/08		101	%	80 - 120
		Dissolved Thallium (Tl)	2014/12/08		99	%	80 - 120
		Dissolved Uranium (U)	2014/12/08		99	%	80 - 120
		Dissolved Vanadium (V)	2014/12/08		99	%	80 - 120
		Dissolved Zinc (Zn)	2014/12/08		105	%	80 - 120
	Method Blank	Dissolved Antimony (Sb)	2014/12/08	<0.10		ug/L	
		Dissolved Arsenic (As)	2014/12/08	<0.10		ug/L	
		Dissolved Barium (Ba)	2014/12/08	<0.10		ug/L	
		Dissolved Beryllium (Be)	2014/12/08	<0.10		ug/L	
		Dissolved Boron (B)	2014/12/08	<0.60		ug/L	
		Dissolved Cadmium (Cd)	2014/12/08	<0.10		ug/L	
		Dissolved Chromium (Cr)	2014/12/08	<0.20		ug/L	
		Dissolved Cobalt (Co)	2014/12/08	<0.10		ug/L	
		Dissolved Copper (Cu)	2014/12/08	<0.30		ug/L	
		Dissolved Lead (Pb)	2014/12/08	<0.50		ug/L	
		Dissolved Molybdenum (Mo)	2014/12/08	<0.10		ug/L	
		Dissolved Nickel (Ni)	2014/12/08	<0.10		ug/L	

MMM Group Limited  
Attention: Allison Read  
Client Project #: 1412815-001-PH2  
P.O. #:  
Site Location: 770 Somerset St

### Quality Assurance Report (Continued)

Maxxam Job Number: TB4M9028

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3851615 RAI	Method Blank	Dissolved Selenium (Se)	2014/12/08	<0.20		ug/L	
		Dissolved Silver (Ag)	2014/12/08	<0.10		ug/L	
		Dissolved Sodium (Na)	2014/12/08	<30		ug/L	
		Dissolved Thallium (Tl)	2014/12/08	<0.050		ug/L	
		Dissolved Uranium (U)	2014/12/08	<0.10		ug/L	
	RPD [YS3404-01]	Dissolved Vanadium (V)	2014/12/08	0.11, RDL=0.10		ug/L	
		Dissolved Zinc (Zn)	2014/12/08	<0.50		ug/L	
		Dissolved Antimony (Sb)	2014/12/08	NC		%	25
		Dissolved Arsenic (As)	2014/12/08	NC		%	25
		Dissolved Barium (Ba)	2014/12/08	2.2		%	25
		Dissolved Beryllium (Be)	2014/12/08	NC		%	25
		Dissolved Boron (B)	2014/12/08	1.1		%	25
		Dissolved Cadmium (Cd)	2014/12/08	NC		%	25
		Dissolved Chromium (Cr)	2014/12/08	NC		%	25
		Dissolved Cobalt (Co)	2014/12/08	NC		%	25
		Dissolved Copper (Cu)	2014/12/08	NC		%	25
		Dissolved Lead (Pb)	2014/12/08	NC		%	25
		Dissolved Molybdenum (Mo)	2014/12/08	NC		%	25
		Dissolved Nickel (Ni)	2014/12/08	NC		%	25
		Dissolved Selenium (Se)	2014/12/08	NC		%	25
		Dissolved Silver (Ag)	2014/12/08	NC		%	25
		Dissolved Sodium (Na)	2014/12/08	1		%	25
		Dissolved Thallium (Tl)	2014/12/08	NC		%	25
		Dissolved Uranium (U)	2014/12/08	4.0		%	25
		Dissolved Vanadium (V)	2014/12/08	NC		%	25
		Dissolved Zinc (Zn)	2014/12/08	NC		%	25

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of the native sample concentration).

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).



## Validation Signature Page

**Maxxam Job #: B4M9028**

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The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



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Brad Newman, Scientific Specialist



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Paul Rubinato, Analyst, Maxxam Analytics

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Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

**A-4**

**SURVEY OF PHASE TWO PROPERTY**

BELL STREET NORTH  
(Formerly Bell Road)

N23°35'00"W (M) (23°27'50"W P1) 98.89 (RWA, P1&M)

PART 1  
PLAN SR-14238

"ST. LUKES" CHURCH  
AND PARISH HALL

PART 2  
PLAN SR-14238

REGISTERED

PART 1  
PLAN SR-14238

PLAN

No. 4908

LOT 23

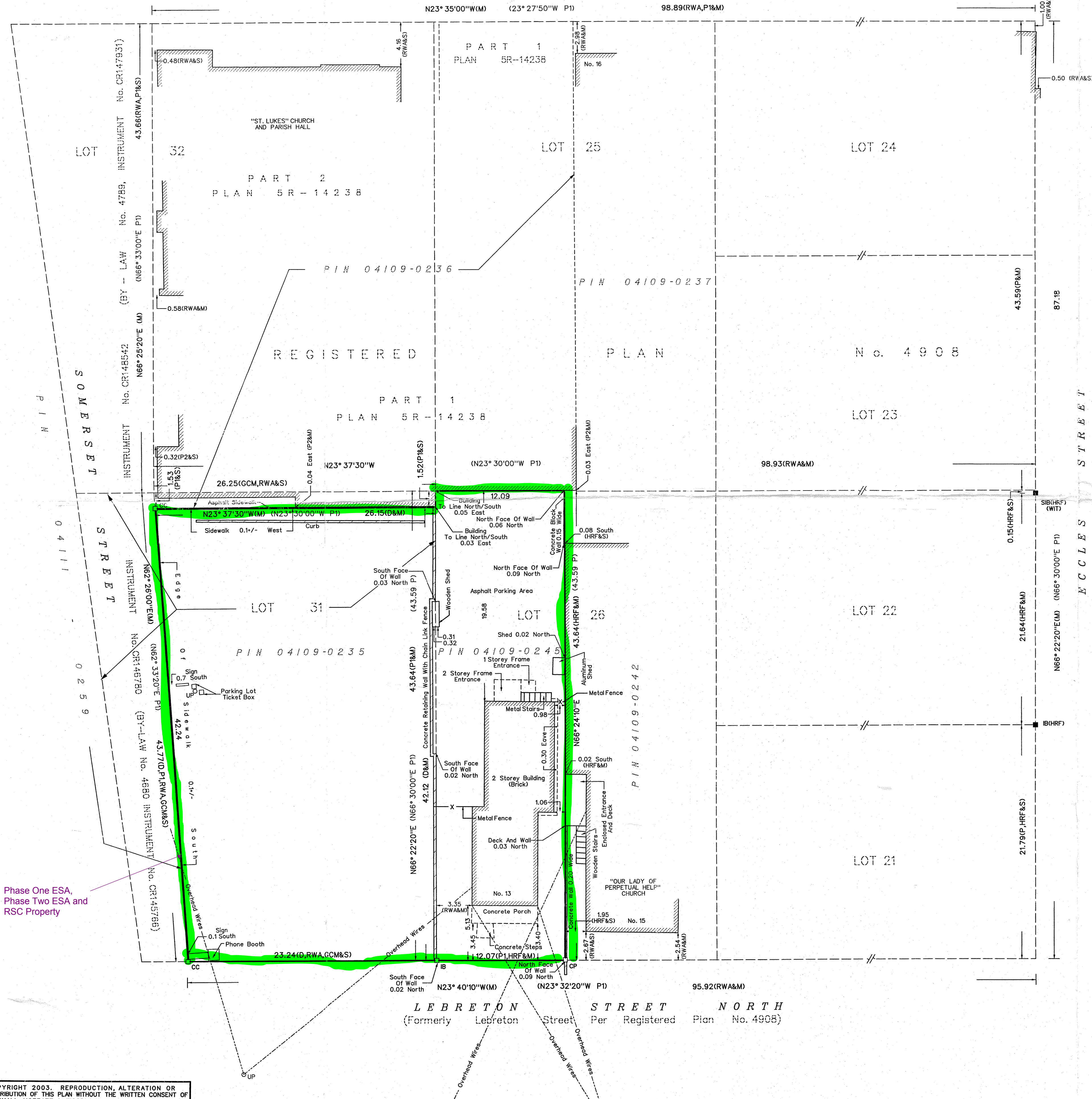
98.93 (RWA&M)

LOT 22

LOT 21

LEBRETON STREET NORTH  
(Formerly Lebreton Street Per Registered Plan No. 4908)

95.92 (RWA&M)



Phase One ESA,  
Phase Two ESA and  
RSC Property

SURVEYOR'S REAL PROPERTY REPORT - PART 1  
PLAN OF

PART OF LOTS 26 AND 31  
REGISTERED PLAN No. 4908  
CITY OF OTTAWA

SCALE 1:200  
0 1 2 3 4 5 10 20 metres

FAIRHALL, MOFFATT & WOODLAND LIMITED  
ONTARIO LAND SURVEYORS

NOTES

BEARINGS ARE GRID BEARINGS AND ARE DERIVED FROM N.C. HORIZONTAL CONTROL MONUMENTS No. 0198530878 (NS030478.294, E386486.483) AND 0197534209 (NS030336.709, E386708.457) AND ARE REFERRED TO THE CENTRAL MERIDIAN 76°30'W LONGITUDE, ZONE 9 OF THE 3° MTM ONTARIO COORDINATE SYSTEM (NAD 83).

LEGEND

- - SURVEY MONUMENT SET
- - SURVEY MONUMENT FOUND
- SIB - STANDARD IRON BAR
- IB - IRON BAR
- CC - CUT CROSS
- CP - CONCRETE PIN
- NCC - NATIONAL CAPITAL COMMISSION
- D - INSTRUMENT No. NS185691
- P - REGISTERED PLAN No. 4908
- P1 - PLAN SR-14238
- P2 - PLAN OF SURVEY BY ANNIS, O'SULLIVAN, VOLLEBEK, O.L.S. (JOB No. 0-293-89)
- (S) - SET
- (M) - MEASURED
- (RWA) - R. W. ARNETT, O.L.S. (REF 5-4908)
- HRF - H. R. FARLEY SURVEYING LTD, O.L.S. (PLAN OF SURVEY OF No. 15 LEBRETON STREET DATED DEC. 09, 1983)
- GCM - G.C.M. MCROSTIE, O.L.S. (REF 1-4908)
- UP - UTILITY POLE
- WIT - WITNESS

SURVEYOR'S REAL PROPERTY REPORT - PART 2  
REPORT SUMMARY

DESCRIPTION OF LAND  
PART OF LOT 26, REGISTERED PLAN No. 4908, CITY OF OTTAWA AS IN ALL OF PIN 04109-0235 AND PART OF LOT 31, REGISTERED PLAN No. 4908, CITY OF OTTAWA AS IN ALL OF PIN 04109-0245.

REGISTERED EASEMENTS  
NONE REGISTERED. NOTE OVERHEAD UTILITY WIRES AT No. 15 LEBRETON CROSS SOUTHWESTERLY CORNER AND THOSE CROSSING NORTHWESTERLY CORNER.

REMARKS  
NOTE SIGN AND PHONE BOOTH ENCROACHES AT NORTHWEST PROPERTY CORNER. NOTE NORTH FACE OF WALL OF CHURCH No. 15 LEBRETON ENCROACHES OVER SOUTHERLY BOUNDARY. NOTE LOCATION OF SIDEWALKS ALONG NORTHERLY AND EASTERLY BOUNDARIES.

ZONING  
COMPLIANCE WITH ZONING, LAND USE, ENVIRONMENTAL AND BUILDING REGULATIONS NOT CERTIFIED BY THIS REPORT

THIS REPORT WAS PREPARED FOR  
KEN YIP  
THE UNDERSIGNED ACCEPTS NO  
RESPONSIBILITY FOR USE BY OTHER PARTIES.

ASSOCIATION OF ONTARIO  
LAND SURVEYORS  
PLAN SUBMISSION FORM  
1461244

SURVEYOR'S CERTIFICATE

I CERTIFY:  
1. THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT, THE SURVEYORS ACT AND THE REGULATIONS MADE UNDER THEM.  
2. THE SURVEY WAS COMPLETED ON MAY 23, 2005.

DATE 2005/05/26  
DAVID W. WOODLAND  
ONTARIO LAND SURVEYOR

Fairhall  
Moffatt &  
Woodland

235 TERENCE MATTHEWS CRESCENT, KANATA, ONTARIO K2M 2B3  
TEL: (613) 591-2580 FAX: (613) 591-1495  
www.fmw.ca

JOB No. E21800  
FILE No.  
Drawing Name  
SURVEYING AND LAND INFORMATION SERVICES  
REFERENCE No. 13-4908





## STANDARD LIMITATIONS

### PHASE II ENVIRONMENTAL SITE ASSESSMENT (PHASE II ESA)

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*These Standard Limitations form part of the Report to which they are appended and any use of the Report is subject to them.*

#### 1. EXCLUSIVE USE BY CLIENT

This Report was prepared for the exclusive use of the client identified as the intended recipient. Any use of the report by any other party without the written consent of MMM Group Limited is the sole responsibility of such party. MMM Group Limited accepts no responsibility for damages that may be suffered by any third party as a result of decisions made or actions taken based on this Report.

#### 2. SCOPE, TERMS AND CONDITIONS OF CONTRACT

The observations and investigations (hereinafter referred to as the "Work") upon which this Report is based were carried out in accordance with the scope, terms and conditions of the contract or the proposal pursuant to which the Work was commissioned. The conclusions presented in the Report are based solely upon the scope of services described in the contract or the proposal and governed by the time and budgetary constraints imposed by them.

#### 3. STANDARD OF CARE

The Phase II ESA was carried out in accordance with generally accepted environmental study and/or professional practices, industry standards and applicable environmental regulations. No other warranties are either expressed or implied with respect to the professional services provided under the terms of the contract or proposal and represented in this Report.

#### 4. SCOPE OF THE PHASE II ESA

A Phase II ESA is conducted to obtain information about environmental conditions in the land or water on, in or under the subject property. This Report has been prepared based on information obtained at discrete borehole, test pit, monitoring well, or other (e.g., surface water) sampling locations. The conditions reported herein were those encountered at the subject property at the time the Work was performed and as present at the discrete sampling locations. Conditions

between sampling locations may be different than those encountered at the sampling locations and MMM Group Limited is not responsible for such differences.

#### 5. REASONABLE CONCLUSIONS

The conclusions of the Phase II ESA regarding the environmental conditions at the subject property are based on the investigations conducted during the Work and information from other sources as may be indicated in the Report. The accuracy of information from other sources was not verified unless specifically noted in the Report, nor was it determined if the reviewed information constituted all information that exists and pertains to the subject property.

The conclusions made are based on reasonable and professional interpretation of the information considered. If additional information concerning environmental conditions of relevance to this Report is obtained during future work at the subject property, MMM Group Limited should be notified in order that we may determine if modifications to the conclusions presented in this Report are necessary.

#### 6. REPORT AS A COMPLETE DOCUMENT

This Report must be read as a whole and sections taken out of context may be misleading. If discrepancies exist between the preliminary (draft) and final versions of the Report, the final version of the Report shall take precedence.

#### 7. LIMITATION OF LIABILITY

MMM Group Limited's liability with respect to the Phase II ESA is limited to re-performing, without cost, any part of the Work that is unacceptable solely as a result of failure to comply with industry standards. MMM Group Limited's maximum liability is limited in accordance with terms in the original contract, provided that notice of claim is made within regulated timelines as of the date of delivery of the Report.