

FINAL REPORT

NATIONAL CAPITAL COMMISSION

**NCC PROPERTY ASSET NO. 97390
LEITRIM ROAD, OTTAWA, ONTARIO**

2011 GROUNDWATER MONITORING PROGRAM

REF.: 11-910



**Submitted:
January 20, 2012**

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**SNC•LAVALIN
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EXECUTIVE SUMMARY

SNC-Lavalin Environment (SLE), Division of SNC-Lavalin Inc., was retained by the National Capital Commission (NCC) to conduct a groundwater monitoring program at NCC Property Asset No. 97390 in Ottawa, Ontario. The site consists of a vacant parcel of land owned by the NCC located along the north side of Leintrim Road between Hawthorne Road and Ramsayville Road, formerly leased by the Ontario Ministry of Natural Resources (MNR). TCE-contaminated groundwater was identified at the site in 2008; the extent of TCE-contaminated groundwater was delineated during the period of 2009 to 2010.

Field activities for the groundwater monitoring program were completed in June and September 2011 and consisted of groundwater level monitoring and groundwater sample collection from twenty-three (23) groundwater monitoring wells. Groundwater samples selected for laboratory analysis were submitted for volatile organic compound (VOC) analyses.

Analysed groundwater samples were reported with concentrations of dissolved-phase TCE exceeding MOE (2011) Table 2 site condition standards, CCME community water supply guidelines and FIGQGs Table 2, Tier 1 in the eastern portion of the site. All analysed groundwater samples in sentinel monitoring wells, MW-10-21 to MW-10-25, located along the southeast property boundary, satisfied the selected federal guidelines and provincial standards. There is no evidence to suggest the presence of free-phase TCE, a DNAPL (Dense Non-Aqueous Phase Liquid), beneath the site.

Based on the results of the 2011 monitoring SLE provided the following conclusions:

- Groundwater analytical results in 2011, the extent of TCE-contaminated groundwater has been confirmed to remain on site.
- Analysed groundwater samples were reported with concentrations of dissolved-phase TCE exceeding MOE (2011) Table 2 site condition standards, CCME community water supply guidelines and FIGQGs Table 2, Tier 1 in the southeastern portion of the monitoring area.
- Some exceedances of cis-1,2-DCE, a degradation product of TCE, were reported in one well.
- All analysed groundwater samples in the downgradient, sentinel, monitoring wells MW-10-21 to MW-10-25, located along the southeast property boundary, satisfied the selected federal guidelines and provincial standards.
- Marginal detections of cis-1,2-DCE were detected in two sentinel monitoring wells.
- There is no evidence to suggest the presence of free-phase TCE DNAPL beneath the site.

- Low concentrations of BTEX parameters, primarily xylenes, are present across approximately the same area as TCE contamination, including four of the five sentinel wells.

The results of the groundwater monitoring program in 2011 generally agree with historical results, suggesting that the TCE-contaminated groundwater has not extended off site and off site receptors are not at significant risk to experience adverse environmental effects.

Given that TCE contamination is present in groundwater, and some residences in the area may still be using groundwater as a drinking water source downgradient of the delineated TCE contamination, continued monitoring is recommended due to the potential for off-site migration.

The semi-annual groundwater monitoring and sampling program initiated in 2011 should be continued for 2012; sampling events should be completed in both the spring (May-June) and fall (September-November) 2012. Water levels should be measured in all wells and selected monitoring wells should be sampled. Wells recommended for sampling should include MW-08-1, MW09-8, MW-10-10, MW-10-11, MW-10-13, MW-10-15, MW-10-17, MW-10-20, and the five (5) sentinel wells (MW-10-21 to -25). The sampling frequency after this second year of semi-annual monitoring, may be reduced, pending favourable results (i.e. consistent without groundwater exceedances near the downgradient property boundary).

TABLE OF CONTENTS

<u>1.</u>	<u>INTRODUCTION.....</u>	<u>1</u>
1.1	Background	1
1.2	Scope of Work.....	3
1.3	Report Structure	4
<u>2.</u>	<u>METHODOLOGY.....</u>	<u>5</u>
2.1	Project Start-up	5
2.2	Groundwater Level Monitoring	5
2.3	Groundwater Sampling.....	6
2.4	Quality Assurance/Quality Control (QA/QC).....	6
<u>3.</u>	<u>REGULATORY CRITERIA</u>	<u>7</u>
<u>4.</u>	<u>RESULTS</u>	<u>8</u>
4.1	Groundwater Level Monitoring Results	8
4.2	Groundwater Analytical Results	8
4.3	Quality Assurance & Quality Control	10
<u>5.</u>	<u>DISCUSSION.....</u>	<u>12</u>
<u>6.</u>	<u>CONCLUSIONS AND RECOMMENDATIONS</u>	<u>14</u>
6.1	Conclusions	14
6.2	Recommendations	15
<u>7.</u>	<u>DISCLAIMER.....</u>	<u>16</u>
<u>8.</u>	<u>REFERENCES.....</u>	<u>17</u>

LIST OF FIGURES

Figure 1.1	Site Location
Figure 1.2	Monitoring Well Locations
Figure 4.1	Interpreted Horizontal Groundwater Flow Direction in Overburden (June 6, 2011)
Figure 5.1	Groundwater Analytical Results for Trichloroethylene (2011)

LIST OF TABLES

Table 4.1	Groundwater Level Monitoring Summary
Table 4.2	Groundwater Analytical Results – 2011 – Volatile Organic Compounds
Table 5.1	Historical Groundwater Analytical Results – 2008-2011 – Volatile Organic Compounds

LIST OF APPENDICES

Appendix A	Regulatory Criteria Selection
Appendix B	Laboratory Certificates of Analysis – Groundwater Samples
Appendix C	Quality Assurance and Quality Control

1. INTRODUCTION

SNC-Lavalin Environment (SLE), Division of SNC-Lavalin Inc., formerly known as Aqua Terre Solutions Inc. (Aqua Terre), was retained by the National Capital Commission (NCC) to conduct a groundwater monitoring program at NCC Property Asset No. 97390 in Ottawa, Ontario (the “site”). The site location is shown in Figure 1.1. The work was completed in accordance with the SLE proposal dated May 17, 2011. This report documents the methodology and results of the groundwater monitoring program.

1.1 Background

The site consists of a vacant parcel of land owned by the NCC located along the north side of Leitrim Road between Hawthorne Road and Ramsayville Road, formerly leased by the Ontario Ministry of Natural Resources (MNR). The site was leased from the NCC by the MNR circa 1961 and was used as a maintenance and storage depot, which included three buildings, a carpenter shop, and a number of on-site sheds/huts, until the early 1980s at which time it was vacated. The buildings on site have since been demolished and the site is currently comprised of an NCC National Capital Greenbelt trail head and parking lot (Lot P19). The site layout is illustrated on Figure 1.2. The site currently consists of undeveloped green space on the east portion and forest covered land on the west portion. Leitrim Road is adjacent to the south of the site, further south of Leitrim Road are residential and agricultural properties. Adjacent to the north, east and west of the site is undeveloped, forest covered land.

In 1992, ADAMAS Engineering Ltd. (ADAMAS) conducted a “Soil Characterization Study” following the excavation and removal of a former underground storage tank (UST) located northeast of a former carpenter shop. The UST reportedly contained petroleum products. One of the groundwater samples collected from the excavation and analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX), was also reported with a trichloroethylene (TCE) concentration of 74.4 micrograms per Litre (µg/L). In 1992, the provincial criterion for TCE in groundwater in a potable groundwater situation was reportedly 50 µg/L.

In 2000, SLE, as Aqua Terre Solutions Inc. (Aqua Terre) was retained by the Ontario Realty Corporation (ORC) to assess potential land impacts from the MNR’s tenancy at the maintenance facility. This initial environmental site assessment comprised of a historical review and a site investigation program including a geophysical survey, test pit excavation, borehole drilling, soil sampling, monitoring well installation and groundwater sampling. Soil and groundwater samples were submitted for analysis for a list of contaminants of concern which was based on the existing knowledge of the site history and was comprised of petroleum

hydrocarbons, BTEX and pesticides. The assessment identified an area of organochlorine pesticide impacted soil and groundwater in the vicinity of a former pesticide storage hut.

A supplemental site assessment was also completed by Aqua Terre in 2000, which comprised of test pit excavations and installation and sampling of monitoring wells. Soil and groundwater samples were submitted for analyses of organochlorine pesticides. The supplemental assessment delineated the extent of soils contaminated with organochlorine pesticides and classified the soil as solid, non-hazardous waste suitable for disposal at a licensed municipal landfill (Aqua Terre, 2000). Approximately 900 tonnes of potentially impacted soils were excavated and disposed off site in December 2000 (Aqua Terre, 2001).

The 1992 ADAMAS report which first identified the potential for TCE contamination in groundwater was not known to Aqua Terre prior to 2008 as it was not referenced in any of Aqua Terre's previous reports for the subject property. This may be a result of the ADAMAS report being commissioned by the NCC, whereas Aqua Terre's work was originally commissioned by the ORC.

A Limited Phase II Environmental Site Assessment (ESA) was completed by Aqua Terre in 2008 (Aqua Terre, 2008). The objectives of the limited Phase II ESA were to firstly determine the presence or absence of trichloroethylene (TCE) historically detected in groundwater in the vicinity of the former carpenter shop and secondly to identify the source area of TCE in groundwater. The 2008 limited Phase II ESA consisted of two phases of borehole drilling, soil sampling, monitoring well installation and drivepoint and groundwater sampling. TCE contamination was confirmed in groundwater in the area just northeast of the former carpenter shop. The groundwater at monitoring well MW08-1 was reported with a concentration of approximately double the federal Canadian Council of Ministers of the Environment (CCME) water quality guideline (CCME, 1999 as updated), but satisfied the current provincial water quality standard for TCE (MOE, 2004). The full extent of groundwater contamination was not delineated, however based on the measured groundwater flow gradient and estimated hydrogeological parameters for soils at the site, SLE had estimated that the maximum extent of contaminant migration, over a 50-year period from when the MNR first occupied the site, would have been in the order of 200 m; given the source location relative to existing development and the interpreted groundwater flow direction at that time, it was determined that any off-site receptors were unlikely to be adversely affected.

In 2009, Aqua Terre was retained by the NCC to conduct groundwater delineation activities to delineate the extent of TCE contamination in groundwater in the vicinity of the former carpenter shop and verify that there was limited potential of adverse affects to off-site receptors (Aqua Terre, 2009). The delineation activities consisted of borehole drilling and monitoring well

installation, soil and groundwater sampling and the advancement of drivepoints for groundwater sampling. Concentrations of TCE in groundwater samples collected from two (2) monitoring wells and eight (8) drivepoints exceeded the federal CCME water quality guideline (CCME, 1999 as updated), but satisfied the provincial water quality standard (MOE, 2004). The extent of groundwater contaminated with TCE was not delineated to the east. Supplemental groundwater delineation was recommended to identify the source and extent of TCE contamination and any potential for adverse effects to off-site receptors.

In 2010, SLE was retained by the NCC to conduct supplemental groundwater investigation activities to delineate the extent of TCE contamination and any potential for adverse effects to off-site receptors (SLE, 2011). The delineation activities consisted of borehole drilling and monitoring well installation, soil and groundwater sampling and the advancement of drivepoints for groundwater sampling. Concentrations of dissolved-phase TCE in groundwater samples collected from four (4) monitoring wells and four (4) drivepoints exceeded federal CCME water quality guideline (CCME, 1999 as updated) and/or Federal Interim Groundwater Quality Guidelines (FIGQGs) Table 2, Tier 1 (FIGQGs, 2010), but satisfied the provincial water quality standard (MOE, 2004). The extent of groundwater contaminated with TCE was delineated on site. There was no evidence to suggest the presence of free-phase TCE, a dense non-aqueous phase liquid (DNAPL), beneath the site. The results suggested that the TCE-contaminated groundwater had not extended off site and off-site receptors were unlikely to experience adverse environmental effects. Given the TCE contamination present in groundwater and likelihood that some residences in the area may be using groundwater as a drinking water source downgradient of the delineated TCE contamination, continued monitoring was recommended due to the potential for off-site migration.

1.2 Scope of Work

The objective of the semi-annual groundwater monitoring program was to continue monitoring groundwater quality at the site with respect to the extent of TCE contamination in groundwater and the potential for adverse effects to off-site receptors.

In order to achieve the above objective, SLE completed the following scope of work:

- Project start-up activities including obtaining access to the site, and updating health and safety documents for the project;
- Measuring organic vapour concentrations in the headspace of each monitoring well;
- Measuring water levels in all monitoring wells;
- Purging all monitoring wells prior to sampling;

- Collecting groundwater samples and submitting them for laboratory analysis of volatile organic compounds (VOCs);
- Collecting and submitted duplicate groundwater samples for quality assurance and quality control (QA/QC) purposes; and
- Comparing analytical results to applicable federal and provincial regulatory guidelines and standards (where available).

1.3 Report Structure

Section 2 of this report documents the methodology of the groundwater monitoring program. Regulatory criteria selection is discussed in Section 3. Section 4 presents the results of the field work activities and Section 5 discusses the significance of the results to the objectives of the groundwater monitoring program. Conclusions and recommendations are provided in Section 6. Limitations of the monitoring program and references cited are presented in Section 7 and Section 8, respectively.

2. METHODOLOGY

The field work program for the groundwater monitoring program was completed in June and September 2011.

The field work was conducted in accordance with established protocols including the Ontario Ministry of Environment and Energy (MOEE) *"Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario"* (MOEE, 1996), Canadian Council of Ministers of the Environment (CCME) *"Guidance Manual on Sampling, Analysis, and Data Management for Contaminated Sites"* (CCME, 1993) and generally accepted industry practices. Each of the field program elements are described in detail in the following sections.

2.1 Project Start-up

Prior to each sampling event, a land access permit (Numbers 12542 and 12839) was obtained from the NCC.

All tasks completed as part of the field programs were subject to a health and safety plan and specific site investigation protocols. Procedures outlined in SLE's Health and Safety Manual (Version 2.1, Aqua Terre 2006 which has been adopted by SLE) were followed as part of the monitoring program. On-site health and safety procedures included a kick-off meeting and daily tailgate health and safety meetings with all field personnel.

2.2 Groundwater Level Monitoring

Groundwater level monitoring was conducted on June 7 and September 27, 2011. Monitoring well locations are shown in Figure 1.2. Groundwater level monitoring activities included measurement of headspace organic vapour readings and water level depths in all twenty-three (23) monitoring wells.

Headspace organic vapour concentrations were measured using a pre-calibrated RAE Systems MiniRAE 2000 photoionization detector. Water levels were measured from the top of the PVC riser using an electronic water level meter.

2.3 Groundwater Sampling

Groundwater samples were collected from all twenty-three 23 monitoring wells (MW08-1 to MW08-5, MW09-8, MW09-9, and MW-10-10 to MW-10-25) on June 7 and September 27, 2011.

Prior to the collection of groundwater samples, a minimum of three (3) standing volumes of water were removed from each well or the well was purged dry three (3) times if there was an insufficient rate of groundwater recovery. Groundwater samples were collected directly into laboratory-prepared bottles using dedicated inertial hand pumps constructed of plastic foot valves and low density polyethylene tubing. The foot valve was positioned approximately 0.7 m from the bottom of each well during sample collection. Samples were placed in coolers on ice and delivered to Maxxam Analytics Ltd. (Maxxam) of Ottawa, Ontario for analyses of VOCs.

2.4 Quality Assurance/Quality Control (QA/QC)

The general philosophy of the Quality Assurance and Quality Control (QA/QC) program is to verify that analytical data is reliable and representative of site conditions. To this end, SLE has established its own QA/QC program based on Canadian Council of Ministers of the Environment (CCME, 1993) and MOE (MOEE, 1996) protocols. The QA/QC program included the use of a field duplicate and laboratory control samples as quality control samples.

As part of the QA/QC program, sampling protocols included minimizing sample handling, using dedicated non-contaminating sampling equipment to the greatest extent practicable, using sample specific identification and labelling procedures and using chain of custody records.

Field QA/QC samples for the groundwater sampling program included:

- MW-98 – Duplicate samples collected from MW-10-17 on June 7 and September 27, 2011; and,
- MW-99 – Duplicate samples collected from MW-10-13 on June 7 and September 27, 2011.

Reported laboratory QA/QC measures included the use and analysis of chemical surrogates and comparison to surrogate recovery standards and preparation and analysis of laboratory blank, duplicate, spiked blank and matrix spike samples.

3. REGULATORY CRITERIA

Regulatory criteria applicable to the site have been previously established as part of past intrusive investigations completed at the site (Aqua Terre, 2008 and 2009). The rationale used to select federal and provincial regulatory criteria is discussed in detail in Appendix A.

Historically, groundwater analytical results have been compared to federal guidelines using Canadian Council of Ministers of the Environment (CCME) *Canadian Environmental Quality Guidelines*, Chapter 2 - Community Water Supplies, (CCME, 1998, as updated). In addition, groundwater analytical results have been compared to the recently released Federal Interim Groundwater Quality Guidelines (FIGQGs) Table 2, Tier 1: Generic Guidelines for residential/parkland land use and coarse textured soils (FIGQGs, 2010).

Historically, groundwater analytical results have been compared to provincial standards using the Ontario Ministry of the Environment (MOE) *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act (O. Reg. 153/04)* Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for all residential/parkland/institutional property use and coarse textured soils (MOE, 2004). For comparison purposes, groundwater analytical results have been compared to the current updated provincial site condition standards which correspond to revised MOE Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for all residential/parkland/institutional property use and coarse textured soils (MOE, 2011).

4. RESULTS

4.1 Groundwater Level Monitoring Results

Groundwater level monitoring data recorded on June 7 and September 27, 2011 are summarized in Table 4.1.

The well headspace organic vapour concentrations measured in June and September 2011 ranged from 0 parts per million by volume (ppmv) to 14.1 ppmv at MW08-4, as summarized in Table 4.1.

Water levels ranged from approximately 0.33 to 2.17 m below ground surface (bgs) during the June and September 2011 monitoring events. Relative groundwater elevations in the monitoring wells ranged from 97.50 m above local datum (ald) at MW-10-22 to 98.93 m ald at MW08-5 on June 7, 2011. Relative groundwater elevations in the monitoring wells ranged from 97.22 m ald at MW-10-22 to 98.15 m ald at MW08-5 on September 27, 2011. Based on water levels measured in June and September 2011, the interpreted horizontal groundwater direction flow in overburden is generally to the east/southeast, with a hydraulic gradient of approximately 0.009, as shown in Figure 4.1.

Sheen or odours were not noted in any of the monitoring wells. Dense non-aqueous phase liquid (DNAPL) was not observed to have settled out at the bottom of any of the collected groundwater sample containers.

4.2 Groundwater Analytical Results

Groundwater analytical results for groundwater samples collected and submitted for VOC analyses in June and September 2011 are summarized in Table 4.2. Analytical results for the blind field duplicate samples collected for QA/QC purposes are also summarized in Table 4.2. Federal guidelines and provincial standards are also summarized in Table 4.2 for comparison. Copies of laboratory certificates of analysis from the 2011 monitoring events are included in Appendix B.

The table below outlines the groundwater samples and parameters that exceeded the selected guidelines and/or standards in June and September 2011:

Location	Sampling Event	Parameter Exceeds MOE (2011) Table 2 Standard	Parameter Exceeds CCME (1999 as updated) Guidelines	Parameter Exceeds FIGQs (2010) Table 2, Tier 1
MW08-1	June	TCE	TCE	None
	September	TCE	TCE	None
MW09-8	June	TCE	TCE	None
	September	TCE	TCE	TCE
MW-10-10	June	TCE	TCE	None
	September	TCE	TCE	None
MW-10-11	June	cis-1,2DCE ¹ TCE	TCE	None
	September	cis-1,2DCE ¹ TCE	TCE	None
MW-10-13	June	TCE	None	None
	September	TCE	TCE	None
MW-10-15	September	TCE	None	None
MW-10-17	June	cis-1,2DCE ¹ TCE	TCE	None
	September	cis-1,2DCE ¹ TCE	TCE	None

¹ – cis-1,2-dichloroethylene (cis-1,2-DCE) is a degradation product of trichloroethylene (TCE)

Based on a review of Table 4.2 and the above summary table, the following observations were made:

- TCE concentrations exceeded selected federal and/or provincial guidelines/standards in seven (7) monitoring wells in June and/or September 2011;
- cis-1,2-dichloroethylene (cis-1,2-DCE), a degradation product of TCE, exceeded the selected provincial standard in two (2) monitoring wells (MW-10-11 and MW-10-17) in June and September 2011
- Detectable concentrations of TCE were also reported in the groundwater samples collected from the following three (3) monitoring wells, but at concentrations that satisfied the selected site standards and guidelines:
 - MW08-5 (June/September);
 - MW09-9 (September); and
 - MW-10-20 (September).
- Concentrations of TCE in all other monitoring wells were below the laboratory reportable detection limits during both sampling events.

- various degradation products of TCE, including cis-1,2-DCE, trans-1,2-DCE, 1,1-DCE, 1,1-DCA and 1,2-DCA were also detected in groundwater samples collected at the following ten (10) of the monitoring wells but, at concentrations that satisfied the selected site standards and guidelines:
 - MW-08-1 ○ MW-08-4 ○ MW-09-8 ○ MW-10-10
 - MW-10-13 ○ MW-10-15 ○ MW-10-16 ○ MW-10-20
 - MW-10-24 (sentinel well) ○ MW-10-25 (sentinel well)
- various BTEX parameters (benzene, toluene, ethylbenzene and xylenes) were detected primarily in wells located near the southeast (downgradient) portion of the plume.
 - an elevated benzene concentration was reported at MW-10-17 at a concentration of 1.5 µg/L (MOE/CCME criterion of 5 µg/L)
 - low concentrations of xylenes (MOE/CCME criterion of 300 µg/L) were reported at the following wells:
 - MW-10-18 - ranging from 0.2 to 0.7 µg/L
 - MW-10-21 - ranging from 0.5 to 0.8 µg/L
 - MW-10-22 - ranging from 0.7 to 1.0 µg/L
 - MW-10-23 - ranging from 0.3 to 0.9 µg/L
 - BTEX concentrations (primarily xylenes) were reported at or near the detection limit at MW-10-10, MW-10-11, MW-10-12, MW-10-13, MW-10-19, MW-10-20 and MW-10-25;

4.3 Quality Assurance & Quality Control

As part of the groundwater analytical program conducted in June and September 2011, blind QA/QC field duplicate groundwater samples were collected from MW-10-13 (duplicate sample identified as MW-99), and MW-10-17 (duplicate sample identified as MW-98) during each sampling event for laboratory analysis of VOCs. The analytical results from the duplicate samples are summarized in Table 4.2.

Relative percent differences (RPDs) were calculated only where detected concentrations in both samples were greater than five (5) times the laboratory detection limits. Calculated RPD values are provided in Appendix C.

The RPDs calculated for the duplicate groundwater samples collected in August and October 2011 ranged from 0% to 23%. RPDs for all other parameters analysed were not calculable as the laboratory results were less than five (5) times the laboratory detection limit. The calculated

RPDs were less than the RPD alert limit of 30%, which is considered acceptable for aqueous matrices (USEPA, 1996).

Results of laboratory QA/QC analyses are included in the laboratory certificates of analysis provided in Appendix B. Analytical results for the laboratory blank, duplicate, spiked blank and matrix spike samples satisfied laboratory acceptance criteria.

Based on the above discussion, the results of QA/QC analyses were of good quality and are acceptable without qualification.

5. DISCUSSION

To aid in the discussion of the distribution of TCE contamination, the reported TCE concentrations from all monitoring well groundwater samples from June to September 2011 are shown on Figure 5.1, without differentiation of the date of sample collection. Concentrations which exceed the selected federal guidelines and provincial standards are shown in magenta, red, or blue text, whereas concentrations that satisfy all the selected criteria are shown in green text.

Based on a review of the TCE concentration distribution on Figure 5.1, the following observations are made:

- The highest TCE concentrations in groundwater were reported in groundwater samples collected from monitoring well MW09-8; groundwater concentrations at MW09-8 exceeded both selected federal groundwater quality guidelines (CCME and FIGQGSs) and the provincial groundwater quality standard (MOE). TCE concentrations at six (6) other monitoring wells, MW08-1, MW-10-10, MW-10-11, MW-10-13, MW-10-15 and MW-10-17, exceeded one of the selected federal groundwater quality guidelines (CCME) and the provincial groundwater quality standard (MOE). The centralization of the elevated TCE concentrations between MW08-1 and MW-10-17 appear to corroborate the interpreted east/southeast direction of shallow groundwater flow in overburden;
- TCE and degradation product concentrations were confirmed to satisfy the selected federal guidelines and provincial standards in groundwater samples collected from the line of sentinel wells (monitoring wells MW-10-21 to MW-10-25), located along the southeast property boundary perpendicular to the direction of groundwater flow;
- The reported TCE concentrations do not show evidence of free product or a significant quantity of contaminated groundwater; and

A summary of all VOC analytical data collected from all monitoring wells to date (from 2008 to 2011) is presented on Table 5.1. Based on a review of Table 5.1 the following observations were made with respect to potential trends:

- The concentrations of TCE at MW-09-8 have generally been the highest reported concentrations for monitoring wells;
- The concentrations of TCE at MW-10-13 have fluctuated over four (4) monitoring rounds completed to date, from a high of 17 µg/L in 2010 to a low of 1.9 µg/L in June 2011;
- The concentrations of TCE at MW-10-15 may be increasing as TCE concentrations for August 2010, October 2010 and June 2011 were reported at 2.0, 2.1 and 1.3 µg/L, respectively; the reported TCE concentration in September 2011 was 4.9 µg/L;

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- Degradation products, at concentrations marginally above detection limits, where present, at two (2) sentinel wells, MW-10-24 and MW-10-25;
 - With the exception of the above-noted wells, reported concentrations of TCE and its degradation products, have generally remained consistent at all other monitoring wells; and
 - Minor BTEX contamination is present across approximately the same area as TCE contamination, including four of the five sentinel wells.

6. CONCLUSIONS AND RECOMMENDATIONS

SLE was retained by the NCC to conduct a groundwater monitoring program at NCC Property Asset No. 97390 in Ottawa, Ontario. Field activities completed in June and September 2011 included groundwater monitoring and groundwater sample collection from monitoring wells.

6.1 Conclusions

Based on the above, SLE provides the following conclusions:

- Groundwater analytical results in 2011, the extent of TCE-contaminated groundwater has been confirmed to remain on site.
- Analysed groundwater samples were reported with concentrations of dissolved-phase TCE exceeding MOE (2011) Table 2 site condition standards, CCME community water supply guidelines and FIGQGs Table 2, Tier 1 in the southeastern portion of the monitoring area.
- Some exceedances of cis-1,2-DCE, a degradation product of TCE, were reported in one well.
- All analysed groundwater samples in the downgradient, sentinel, monitoring wells MW-10-21 to MW-10-25, located along the southeast property boundary, satisfied the selected federal guidelines and provincial standards.
- Marginal detections of cis-1,2-DCE were detected in two sentinel monitoring wells.
- There is no evidence to suggest the presence of free-phase TCE DNAPL beneath the site.
- Low concentrations of BTEX parameters, primarily xylenes, are present across approximately the same area as TCE contamination, including four of the five sentinel wells.

The results of the groundwater monitoring program in 2011 generally agree with historical results, suggesting that the TCE-contaminated groundwater has not extended off site and off-site receptors are not at significant risk to experience adverse environmental effects.

6.2 Recommendations

Given that TCE contamination is present in groundwater, and some residences in the area may still be using groundwater as a drinking water source downgradient of the delineated TCE contamination, continued monitoring is recommended due to the potential for off-site migration.

The semi-annual groundwater monitoring and sampling program initiated in 2011 should be continued for 2012; sampling events should be completed in both the spring (May-June) and fall (September-November) 2012. Water levels should be measured in all wells and selected monitoring wells should be sampled. Wells recommended for sampling should include MW-08-1, MW09-8, MW-10-10, MW-10-11, MW-10-13, MW-10-15, MW-10-17, MW-10-20, and the five (5) sentinel wells (MW-10-21 to -25). The sampling frequency after this second year of semi-annual monitoring, may be reduced, pending favourable results (i.e. consistent without groundwater exceedances near the downgradient property boundary).

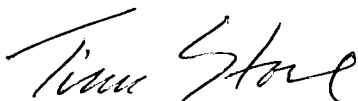
7. DISCLAIMER

The statements made in this report are based solely on the information obtained to date as part of the above referenced study. SNC-Lavalin Environment, Division of SNC-Lavalin Inc. (SLE) has used its professional judgement in assessing this information and formulating its opinion and recommendations. New information may result in a change in this opinion. The mandate at SLE is to perform the tasks prescribed by the Client with the due diligence of the profession. No other warranty or representation, expressed or implied, as to the accuracy of the information or recommendations is included or intended in this report. The results of this study should in no way be construed as a warranty that the subject property is free from any and all contamination.

SLE disclaims any liability or responsibility to any person or party, other than the party to whom this report is addressed, for any loss, damage, expense, fine, or penalty which may arise or result from the use of any information or recommendations contained in this report. Any use which a third party makes of this report, or any reliance on or decisions made based on it, are the sole responsibility of the third party.

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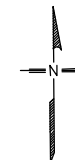
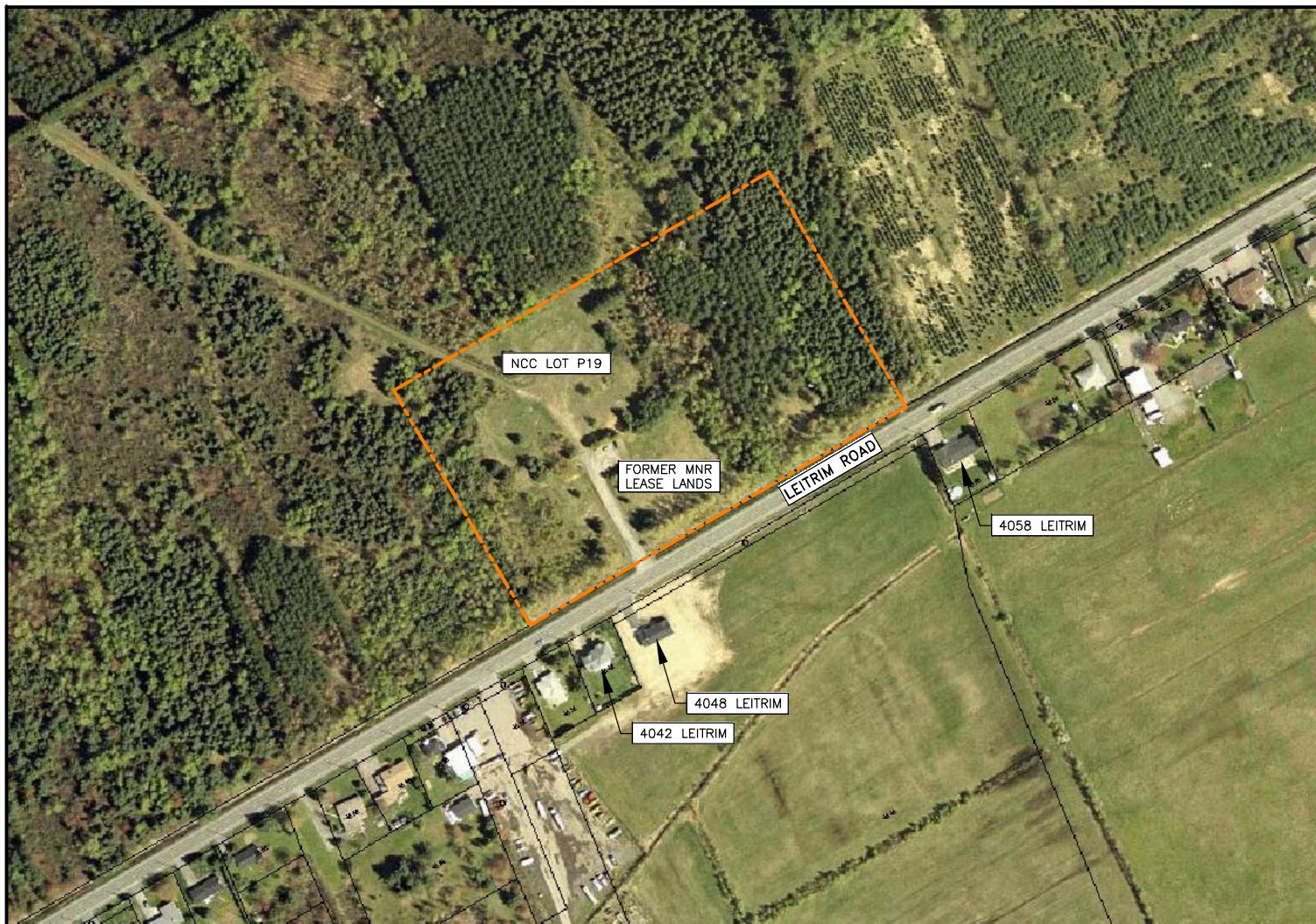
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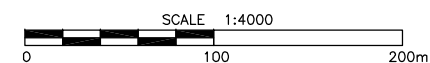
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FIGURES



LEGEND

----- APPROXIMATE LIMIT OF SUBJECT PROPERTY



NOTE(S):
 1. SCALE AND SITE INFRASTRUCTURE LOCATIONS ARE APPROXIMATE
 2. INFORMATION ON THIS FIGURE MAY BE LOST IF IT IS PHOTOCOPIED, FAXED OR PRINTED FROM PDF

SOURCE(S):
 1. HISTORICAL AIR PHOTO 2002



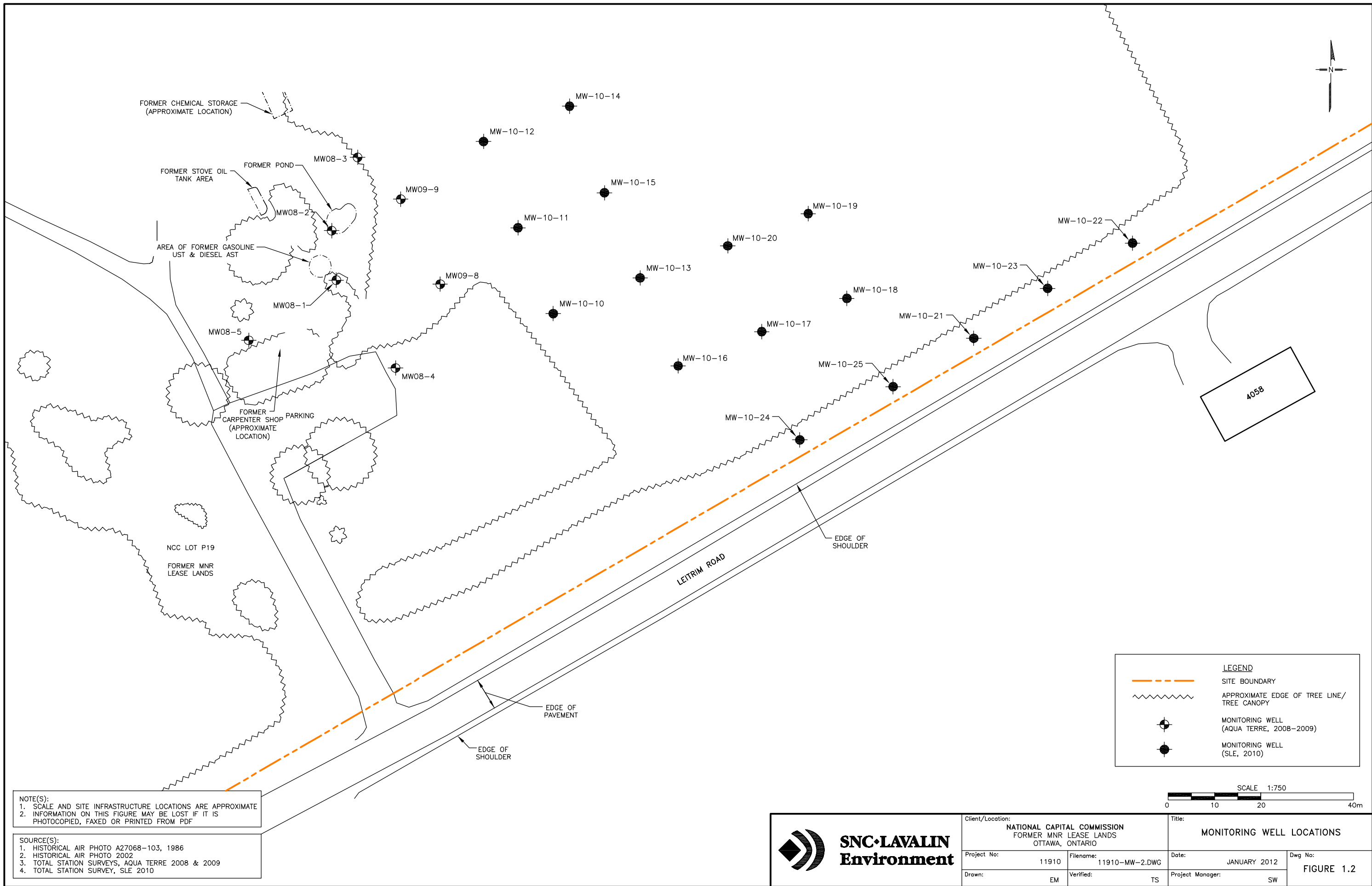
Client/Location:
 NATIONAL CAPITAL COMMISSION
 FORMER MNR LEASE LANDS
 OTTAWA, ONTARIO

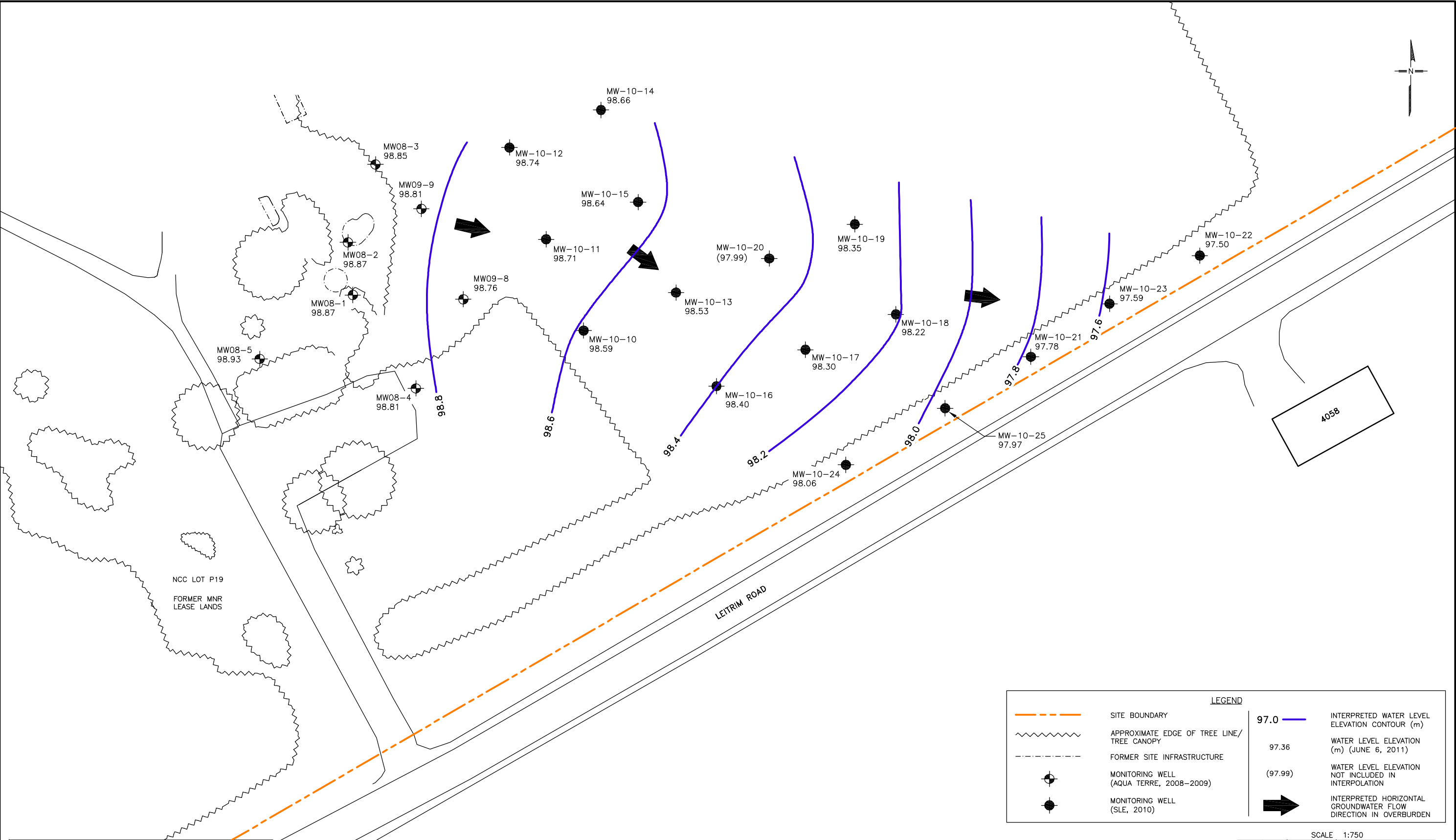
Project No:	11910	Filename:	11910-LEITRIM-2.DWG
Drawn:	EM	Verified:	SW

Title:
 SITE LOCATION

Date:	JANUARY 2012
Project Manager:	SW

Dwg No:
 FIGURE 1.1





NOTE(S):
1. SCALE AND SITE INFRASTRUCTURE LOCATIONS ARE APPROXIMATE
2. INFORMATION ON THIS FIGURE MAY BE LOST IF IT IS PHOTOCOPIED, FAXED OR PRINTED FROM PDF

SOURCE(S):
1. HISTORICAL AIR PHOTO A27068-103, 1986
2. HISTORICAL AIR PHOTO 2002
3. TOTAL STATION SURVEYS, AQUA TERRE 2008 & 2009
4. TOTAL STATION SURVEY, SLE 2010

SITE BOUNDARY

APPROXIMATE EDGE OF TREE LINE/
TREE CANOPY

FORMER SITE INFRASTRUCTURE

MONITORING WELL
(AQUA TERRE, 2008-2009)

MONITORING WELL
(SLE, 2010)

97.0

INTERPRETED WATER LEVEL
ELEVATION CONTOUR (m)

97.36

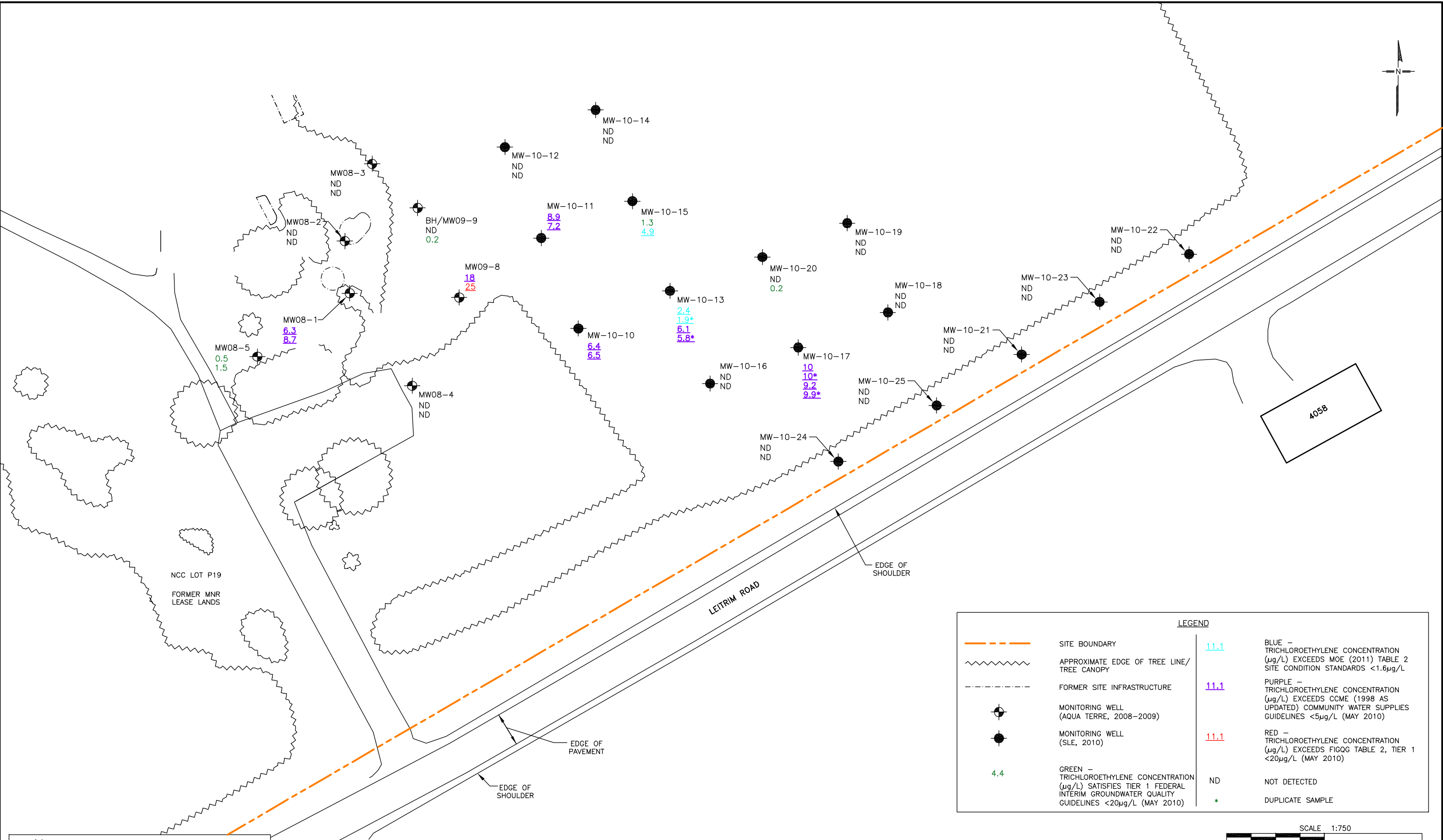
WATER LEVEL ELEVATION
(m) (JUNE 6, 2011)

(97.99)

WATER LEVEL ELEVATION
NOT INCLUDED IN
INTERPOLATION

INTERPRETED HORIZONTAL
GROUNDWATER FLOW
DIRECTION IN OVERBURDEN

Client/Location: NATIONAL CAPITAL COMMISSION FORMER MNR LEASE LANDS OTTAWA, ONTARIO		Title: INTERPRETED HORIZONTAL GROUNDWATER FLOW DIRECTION IN OVERBURDEN (JUNE 6, 2011)	
Project No:	11910	Filename:	11910-CT-JN11B.DWG
Drawn:	EM	Verified:	TS
		Date:	JANUARY 2012
		Project Manager:	SW
		Dwg No:	FIGURE 4.1



LEGEND			
	SITE BOUNDARY		BLUE – TRICHLOROETHYLENE CONCENTRATION (µg/L) EXCEEDS MOE (2011) TABLE 2 SITE CONDITION STANDARDS <1.6µg/L
	APPROXIMATE EDGE OF TREE LINE/ TREE CANOPY		PURPLE – TRICHLOROETHYLENE CONCENTRATION (µg/L) EXCEEDS CCME (1998 AS UPDATED) COMMUNITY WATER SUPPLIES GUIDELINES <5µg/L (MAY 2010)
	FORMER SITE INFRASTRUCTURE		RED – TRICHLOROETHYLENE CONCENTRATION (µg/L) EXCEEDS FIGQG TABLE 2, TIER 1 <20µg/L (MAY 2010)
	MONITORING WELL (AQUA TERRE, 2008–2009)	ND	NOT DETECTED
	MONITORING WELL (SLE, 2010)	*	DUPLICATE SAMPLE
	GREEN – TRICHLOROETHYLENE CONCENTRATION (µg/L) SATISFIES TIER 1 FEDERAL INTERIM GROUNDWATER QUALITY GUIDELINES <20µg/L (MAY 2010)		

NOTE(S):
1. SCALE AND SITE INFRASTRUCTURE LOCATIONS ARE APPROXIMATE
2. INFORMATION ON THIS FIGURE MAY BE LOST IF IT IS PHOTOCOPIED, FAXED OR PRINTED FROM PDF

SOURCE(S):
1. HISTORICAL AIR PHOTO A27068–103, 1986
2. HISTORICAL AIR PHOTO 2002
3. TOTAL STATION SURVEYS, AQUA TERRE 2008 & 2009
4. TOTAL STATION SURVEY, SLE 2010



Client/Location: NATIONAL CAPITAL COMMISSION FORMER MNR LEASE LANDS OTTAWA, ONTARIO		Title: MONITORING WELL TCE CONCENTRATIONS (2011)	
Project No:	11910	Filename:	11910–TCE–C–2.DWG
Drawn:	EM	Verified:	SW
		Date:	JANUARY 2012
		Project Manager:	SW
		Dwg No: FIGURE 5.1	

TABLES

TABLE 4.1 GROUNDWATER LEVEL MONITORING SUMMARY
Former MNR Lease Lands, Leitrim Road, Ottawa, ON
(see end of table for footnotes)

Monitoring Well	Ground Surface Elevation ¹ (m ald)	Top of PVC Casing Elevation ¹ (m ald)	Date	OVM Reading ² (ppmv)	PID Reading ³ (ppmv)	Water Level Depth (m btc)	Water Level Depth (m bgs)	Water Level Elevation ¹ (m ald)
MW08-1	99.78	100.64	23-Jun-08	<25	nm	1.816	0.961	98.82
			27-Jun-08	nm	1.3	1.809	0.954	98.83
			16-Sep-08	nm	nm	2.451	1.596	98.19
			5-Aug-09	nm	nm	1.896	1.041	98.74
	99.83	100.65	14-Aug-09	<25	nm	2.070	1.250	98.58
			8-Sep-09	nm	nm	2.287	1.467	98.36
	ns	100.65	20-Aug-10	nm	nm	2.281	1.459	98.37
			26-Aug-10	nm	0.2	2.218	1.396	98.43
			31-Aug-10	nm	nm	2.260	1.438	98.39
			1-Oct-10	<25	nm	1.991	1.169	98.66
			6-Jun-11	nm	1.0	1.786	0.964	98.87
			26-Sep-11	nm	<0.0	2.552	1.730	98.10
MW08-2	99.66	100.70	23-Jun-08	<25	nm	1.890	0.847	98.81
			27-Jun-08	nm	2.0	1.896	0.853	98.81
			16-Sep-08	nm	nm	2.542	1.499	98.16
			5-Aug-09	nm	nm	1.985	0.942	98.72
	99.74	100.71	14-Aug-09	<25	nm	2.161	1.191	98.55
			8-Sep-09	nm	nm	2.374	1.404	98.34
	ns	100.71	20-Aug-10	nm	nm	2.370	1.399	98.34
			26-Aug-10	nm	2.1	2.309	1.338	98.40
			31-Aug-10	nm	nm	2.348	1.377	98.37
			1-Oct-10	<25	nm	2.095	1.124	98.62
			6-Jun-11	nm	11.2	1.842	0.871	98.87
			26-Sep-11	nm	<0.0	2.632	1.661	98.08
MW08-3	99.51	100.38	23-Jun-08	<25	nm	1.615	0.745	98.76
			27-Jun-08	nm	1.2	1.626	0.756	98.75
			16-Sep-08	nm	nm	2.276	1.406	98.10
			5-Aug-09	nm	nm	1.740	0.870	98.64
	99.57	100.40	14-Aug-09	<25	nm	1.893	1.066	98.50
			8-Sep-09	nm	nm	2.115	1.288	98.28
	ns	100.40	20-Aug-10	nm	nm	2.117	1.288	98.28
			26-Aug-10	nm	0.8	2.063	1.234	98.34
			31-Aug-10	nm	nm	2.093	1.264	98.31
			1-Oct-10	<25	nm	1.840	1.011	98.56
			6-Jun-11	nm	1.6	1.546	0.717	98.85
			26-Sep-11	nm	<0.0	2.341	1.512	98.06
MW08-4	99.63	100.47	23-Jun-08	<25	nm	1.655	0.820	98.81
			27-Jun-08	nm	2.2	1.637	0.802	98.83
			16-Sep-08	nm	nm	2.272	1.437	98.20
			5-Aug-09	nm	nm	1.727	0.892	98.74
	99.65	100.47	14-Aug-09	<25	nm	1.922	1.100	98.55
			8-Sep-09	nm	nm	2.117	1.295	98.36
	ns	100.48	20-Aug-10	nm	nm	2.106	1.282	98.37
			26-Aug-10	nm	1.1	2.034	1.210	98.44
			31-Aug-10	nm	nm	2.088	1.264	98.39
			1-Oct-10	<25	nm	1.753	0.929	98.72
			6-Jun-11	nm	14.1	1.667	0.843	98.81
			26-Sep-11	nm	11.3	2.373	1.549	98.10

TABLE 4.1 GROUNDWATER LEVEL MONITORING SUMMARY
Former MNR Lease Lands, Leitrim Road, Ottawa, ON
(see end of table for footnotes)

Monitoring Well	Ground Surface Elevation ¹ (m ald)	Top of PVC Casing Elevation ¹ (m ald)	Date	OVM Reading ² (ppmv)	PID Reading ³ (ppmv)	Water Level Depth (m btc)	Water Level Depth (m bgs)	Water Level Elevation ¹ (m ald)
MW08-5	99.99	100.92	16-Sep-08	nm	nm	2.637	1.711	98.28
			5-Aug-09	nm	nm	2.067	1.141	98.85
			14-Aug-09	25	nm	2.256	1.330	98.66
			8-Sep-09	nm	nm	2.474	1.548	98.44
			20-Aug-10	nm	nm	2.465	1.536	98.46
	ns	100.92	26-Aug-10	nm	57	2.393	1.464	98.53
			31-Aug-10	nm	nm	2.443	1.514	98.48
			1-Oct-10	<25	nm	2.128	1.199	98.79
			6-Jun-11	nm	10.7	1.994	1.065	98.93
			26-Sep-11	nm	<0.0	2.767	1.838	98.15
MW09-8	99.49	100.60	14-Aug-09	75	nm	2.129	1.016	98.47
	ns	100.61	8-Sep-09	nm	nm	2.314	1.201	98.29
			20-Aug-10	nm	nm	2.318	1.192	98.30
			26-Aug-10	nm	0.2	2.251	1.125	98.36
			1-Oct-10	100	nm	2.001	0.875	98.61
			6-Jun-11	nm	1.8	1.852	0.726	98.76
			26-Sep-11	nm	<0.0	2.583	1.457	98.03
MW09-9	99.26	100.34	14-Aug-09	<25	nm	1.868	0.793	98.47
	ns	100.34	8-Sep-09	nm	nm	2.074	0.999	98.26
			20-Aug-10	nm	nm	2.081	1.005	98.26
			26-Aug-10	nm	0.2	2.022	0.946	98.32
			1-Oct-10	<25	nm	1.781	0.705	98.56
			6-Jun-11	nm	1.3	1.526	0.450	98.81
			26-Sep-11	nm	<0.0	2.306	1.230	98.03
MW10-10	99.29	100.45	26-Aug-10	nm	1.7	2.244	1.088	98.20
			31-Aug-10	nm	nm	2.291	1.135	98.16
			1-Oct-10	<25	nm	1.964	0.808	98.48
			6-Jun-11	nm	2.0	1.854	0.698	98.59
			26-Sep-11	nm	0.4	2.515	1.359	97.93
MW10-11	99.22	100.32	26-Aug-10	nm	0.7	2.097	0.995	98.22
			31-Aug-10	nm	nm	2.130	1.028	98.19
			1-Oct-10	<25	nm	1.832	0.730	98.49
			6-Jun-11	nm	1.0	1.604	0.502	98.71
			26-Sep-11	nm	0.3	2.343	1.241	97.98
MW10-12	99.07	100.20	26-Aug-10	nm	0.5	1.973	0.846	98.23
			31-Aug-10	nm	nm	2.011	0.884	98.19
			1-Oct-10	<25	nm	1.718	0.591	98.48
			6-Jun-11	nm	1.5	1.459	0.332	98.74
			26-Sep-11	nm	0.4	2.226	1.099	97.98
MW10-13	99.69	100.79	26-Aug-10	nm	2.5	2.723	1.621	98.07
	ns	100.78	31-Aug-10	nm	nm	2.724	1.622	98.07
			1-Oct-10	<25	nm	2.497	1.395	98.29
			6-Jun-11	nm	3.2	2.254	1.152	98.53
			26-Sep-11	nm	1.3	2.904	1.802	97.88
MW10-14	99.86	100.93	26-Aug-10	nm	4	2.748	1.678	98.18
			31-Aug-10	nm	nm	2.779	1.709	98.15
			1-Oct-10	<25	nm	2.504	1.434	98.42
			6-Jun-11	nm	1.3	2.272	1.202	98.66
			26-Sep-11	nm	0.5	2.999	1.929	97.93

TABLE 4.1 GROUNDWATER LEVEL MONITORING SUMMARY
Former MNR Lease Lands, Leitrim Road, Ottawa, ON
 (see end of table for footnotes)

Monitoring Well	Ground Surface Elevation ¹ (m ald)	Top of PVC Casing Elevation ¹ (m ald)	Date	OVM Reading ² (ppmv)	PID Reading ³ (ppmv)	Water Level Depth (m btc)	Water Level Depth (m bgs)	Water Level Elevation ¹ (m ald)
MW10-15	ns	100.86	26-Aug-10	nm	11.6	2.710	1.681	98.15
			31-Aug-10	nm	nm	2.732	1.703	98.13
			1-Oct-10	<25	nm	2.475	1.446	98.38
			6-Jun-11	nm	2.9	2.218	1.189	98.64
			26-Sep-11	nm	0.1	2.941	1.912	97.92
MW10-16	99.75	100.60	1-Oct-10	30	nm	2.388	1.536	98.22
			6-Jun-11	nm	2.9	2.202	1.350	98.40
			26-Sep-11	nm	0.8	2.758	1.906	97.85
MW10-17	99.87	100.94	1-Oct-10	30	nm	2.813	1.734	98.13
			6-Jun-11	nm	6.6	2.642	1.563	98.30
			26-Sep-11	nm	1.2	3.147	2.068	97.80
MW10-18	99.56	100.67	1-Oct-10	290	nm	2.574	1.458	98.10
			6-Jun-11	nm	3.3	2.449	1.333	98.22
			26-Sep-11	nm	1.3	2.888	1.772	97.78
MW10-19	99.67	100.74	1-Oct-10	125	nm	2.540	1.478	98.20
			6-Jun-11	nm	1.9	2.382	1.320	98.35
			26-Sep-11	nm	0.6	2.930	1.868	97.81
MW10-20	99.75	100.88	1-Oct-10	290	nm	2.665	1.539	98.21
			6-Jun-11	nm	3.3	2.885	1.759	97.99
			26-Sep-11	nm	1.1	3.047	1.921	97.83
MW10-21	98.66	99.83	1-Oct-10	55	nm	1.899	0.729	97.93
			6-Jun-11	nm	2.3	2.052	0.882	97.78
			26-Sep-11	nm	1.2	2.383	1.213	97.45
MW10-22	98.02	99.17	1-Oct-10	90	nm	1.358	0.204	97.81
			6-Jun-11	nm	3.1	1.671	0.517	97.50
			26-Sep-11	nm	2.2	1.951	0.797	97.22
MW10-23	98.41	99.55	1-Oct-10	<25	nm	1.641	0.502	97.90
			6-Jun-11	nm	2.8	1.954	0.815	97.59
			26-Sep-11	nm	1.6	2.195	1.056	97.35
MW10-24	99.95	101.23	1-Oct-10	220	nm	3.181	1.908	98.05
			6-Jun-11	nm	2.2	3.164	1.891	98.06
			26-Sep-11	nm	1.4	3.447	2.174	97.78
MW10-25	99.48	100.65	1-Oct-10	<25	nm	2.673	1.501	97.98
			6-Jun-11	nm	2.9	2.679	1.507	97.97
			26-Sep-11	nm	0.5	2.922	1.750	97.73

Notes:

¹ Elevations measured on June 18, 2008 relative to local benchmark (SW corner of concrete slab east side of gate) having an assigned elevation of 100.00m ald. Elevations were resurveyed on September 8, 2009, August 26, 2010, and October 1, 2010.

² Organic Vapour Meter (OVM) readings measured in ppmv unless noted

³ Photo Ionization Detector (PID) readings measured in ppmv unless noted

(m ald) metres above local datum

(m btc) metres below top of PVC casing

(m bgs) metres below ground surface

ppmv parts per million by volume

ns not surveyed

nm not measured

TABLE 4.2 GROUNDWATER ANALYTICAL RESULTS - 2011
Volatile Organic Parameters
NCC Property Asset No. 97390, Leitrim Road, Ottawa, Ontario

SNC-Lavalin Environment Sample No.			2011 MOE Standard Table 2 ¹	CCME Community Water ²	2010 FIGQGs Table 2 Tier 1 ⁴	MW08-1	MW08-1	MW08-2	MW08-2	MW08-3	MW08-3
<i>Laboratory Sample No.</i>	na	na	na	na	na	JT2467	LB0317	JT2468	LB0318	JT2469	LB0319
<i>Sampling Date</i>	na	na	na	na	na	7-Jun-11	27-Sep-11	7-Jun-11	27-Sep-11	7-Jun-11	27-Sep-11
<i>Monitoring Well No.</i>	na	na	na	na	na	MW08-1	MW08-1	MW08-2	MW08-2	MW08-3	MW08-3
Acetone	10	µg/L	2700	ng	330	<	<	<	<	<	<
Benzene	0.1	µg/L	5	5	140	<	<	<	<	<	<
Bromodichloromethane	0.1	µg/L	16	16	67000	<	<	<	<	<	<
Bromoform	0.2	µg/L	25	ng	840	<	<	<	<	<	<
Bromomethane	0.5	µg/L	0.89	ng	2	<	<	<	<	<	<
Carbon Tetrachloride	0.1	µg/L	0.79	5	0.56	<	<	<	<	<	<
Chlorobenzene	0.1	µg/L	30	80	1.3	<	<	<	<	<	<
Chloroform	0.1	µg/L	2.4	ng	1.8	<	<	<	<	<	<
Dibromochloromethane	0.2	µg/L	25	ng	1100	<	<	<	<	<	<
1,2-Dichlorobenzene	0.2	µg/L	3	200	0.7	<	<	<	<	<	<
1,3-Dichlorobenzene	0.2	µg/L	59	ng	42	<	<	<	<	<	<
1,4-Dichlorobenzene	0.2	µg/L	1	5	26	<	<	<	<	<	<
Dichlorodifluoromethane (FREON 12)	0.5	µg/L	590	ng	ng	<	<	<	<	<	<
1,1-Dichloroethane	0.1	µg/L	5	ng	9000	<	<	<	<	<	<
1,2-Dichloroethane	0.2	µg/L	1.6	5	10	<	<	<	<	<	<
1,1-Dichloroethylene	0.1	µg/L	1.6	14	39	<	<	<	<	<	<
cis-1,2-Dichloroethylene	0.1	µg/L	1.6	ng	12000	1.0	1.2	<	<	<	<
trans-1,2-Dichloroethylene	0.1	µg/L	1.6	ng	12000	0.1	0.2	<	<	<	<
1,2-Dichloropropane	0.1	µg/L	5	ng	9.3	<	<	<	<	<	<
cis-1,3-Dichloropropene	0.2	µg/L	ns	ng	ng	<	<	<	<	<	<
trans-1,3-Dichloropropene	0.2	µg/L	ns	ng	ng	<	<	<	<	<	<
1,3-Dichloropropene	0.2	µg/L	0.5	ng	3.8	<	<	<	<	<	<
Ethylbenzene	0.1	µg/L	2.4	2.4 ³	11000	<	<	<	<	<	<
Ethylene Dibromide	0.2	µg/L	0.2	ng	3.3	<	<	<	<	<	<
Hexane	0.5	µg/L	51	ng	ng	<	<	<	<	<	<
Methyl Ethyl Ketone	5	µg/L	1800	ng	120000	<	<	<	<	<	<
Methyl Isobutyl Ketone	5	µg/L	640	ng	57000	<	<	<	<	<	<
Methyl t-butyl ether	0.2	µg/L	15	15 ³	340	<	<	<	<	<	<
Methylene Chloride	0.5	µg/L	50	50	98	<	<	<	<	<	<
Styrene	0.2	µg/L	5.4	ng	72	<	<	<	<	<	<
1,1,1,2-Tetrachloroethane	0.1	µg/L	1.1	ng	6	<	<	<	<	<	<
1,1,2,2-Tetrachloroethane	0.2	µg/L	1	ng	22	<	<	<	<	<	<
Tetrachloroethylene	0.1	µg/L	1.6	30	110	<0.4	<	<0.4	<	<0.4	<
Toluene	0.2	µg/L	24	24 ³	83	<	<	<	<	<	<
1,1,1-Trichloroethane	0.1	µg/L	200	ng	4200	<	<	<	<	<	<
1,1,2-Trichloroethane	0.2	µg/L	4.7	ng	9400	<	<	<	<	<	<
Trichloroethylene	0.1	µg/L	1.6	5	20	6.3	8.7	<	<	<	<
Trichlorofluoromethane (FREON 11)	0.2	µg/L	150	ng	ng	<	<	<	<	<	<
Vinyl Chloride	0.2	µg/L	0.5	2	1.1	<	<	<	<	<	<
p+m-Xylene	0.1	µg/L	ns	ng	ng	<	<	<	<	<	<
o-Xylene	0.1	µg/L	ns	ng	ng	<	<	<	<	<	<
Xylene (Total)	0.1	µg/L	300	300 ³	3900	<	<	<	<	<	<

RDL reportable detection limit

< less than RDL

na not applicable

ns no standards

ng no guideline

µg/L micrograms per litre

¹ MOE Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for All Types of Property Use, coarse textured soils (MOE, 2011)

² CCME Community Water: Guidelines for Canadian Drinking Water Quality, Community Water Supplies, Canadian Environmental Quality Guidelines (CCME, 1999, as updated)

³ Aesthetic Objective

⁴ FIGQGs Table 2, Tier 1: Generic Guidelines for residential/parkland use and coarse

Underline Exceeds MOE (2011) Table 2 groundwater standard

Italic Exceeds CCME (1999 as updated) drinking water quality guidelines

BOLD Exceeds FIGQGs (2010) Table 2, Tier 1

TABLE 4.2 GROUNDWATER ANALYTICAL RESULTS - 2011
Volatile Organic Parameters
NCC Property Asset No. 97390, Leirtrim Road, Ottawa, Ontario

SNC-Lavalin Environment Sample No.			2011 MOE Standard Table 2 ¹	CCME Community Water ²	2010 FIGQGs Table 2 Tier 1 ⁴	MW08-4	MW08-4	MW08-5	MW08-5	MW09-8	MW09-8
<i>Laboratory Sample No.</i>	na	na	na	na	na	JT2470	LB0320	JT2471	LB0321	JT2472	LB0322
<i>Sampling Date</i>	na	na	na	na	na	7-Jun-11	27-Sep-11	7-Jun-11	27-Sep-11	7-Jun-11	27-Sep-11
<i>Monitoring Well No.</i>	na	na	na	na	na	MW08-4	MW08-4	MW08-5	MW08-5	MW09-8	MW09-8
Acetone	10	µg/L	2700	ng	330	<	<	<	<	<	<
Benzene	0.1	µg/L	5	5	140	<	<	<	<	<	<
Bromodichloromethane	0.1	µg/L	16	16	67000	<	<	<	<	<	<
Bromoform	0.2	µg/L	25	ng	840	<	<	<	<	<	<
Bromomethane	0.5	µg/L	0.89	ng	2	<	<	<	<	<	<
Carbon Tetrachloride	0.1	µg/L	0.79	5	0.56	<	<	<	<	<	<
Chlorobenzene	0.1	µg/L	30	80	1.3	<	<	<	<	<	<
Chloroform	0.1	µg/L	2.4	ng	1.8	<	<	<	<	<	<
Dibromochloromethane	0.2	µg/L	25	ng	1100	<	<	<	<	<	<
1,2-Dichlorobenzene	0.2	µg/L	3	200	0.7	<	<	<	<	<	<
1,3-Dichlorobenzene	0.2	µg/L	59	ng	42	<	<	<	<	<	<
1,4-Dichlorobenzene	0.2	µg/L	1	5	26	<	<	<	<	<	<
Dichlorodifluoromethane (FREON 12)	0.5	µg/L	590	ng	ng	<	<	<	<	<	<
1,1-Dichloroethane	0.1	µg/L	5	ng	9000	<	<	<	<	<	<
1,2-Dichloroethane	0.2	µg/L	1.6	5	10	<	<	<	<	<	<
1,1-Dichloroethylene	0.1	µg/L	1.6	14	39	<	<	<	<	<	<
cis-1,2-Dichloroethylene	0.1	µg/L	1.6	ng	12000	<	0.1	<	<	0.5	0.7
trans-1,2-Dichloroethylene	0.1	µg/L	1.6	ng	12000	<	<	<	<	<	0.2
1,2-Dichloropropane	0.1	µg/L	5	ng	9.3	<	<	<	<	<	<
cis-1,3-Dichloropropene	0.2	µg/L	ns	ng	ng	<	<	<	<	<	<
trans-1,3-Dichloropropene	0.2	µg/L	ns	ng	ng	<	<	<	<	<	<
1,3-Dichloropropene	0.2	µg/L	0.5	ng	3.8	<	<	<	<	<	<
Ethylbenzene	0.1	µg/L	2.4	2.4 ³	11000	<	<	<	<	<	<
Ethylene Dibromide	0.2	µg/L	0.2	ng	3.3	<	<	<	<	<	<
Hexane	0.5	µg/L	51	ng	ng	<	<	<	<	<	<
Methyl Ethyl Ketone	5	µg/L	1800	ng	120000	<	<	<	<	<	<
Methyl Isobutyl Ketone	5	µg/L	640	ng	57000	<	<	<	<	<	<
Methyl t-butyl ether	0.2	µg/L	15	15 ³	340	<	<	<	<	<	<
Methylene Chloride	0.5	µg/L	50	50	98	<	<	<	<	<	<
Styrene	0.2	µg/L	5.4	ng	72	<	<	<	<	<	<
1,1,1,2-Tetrachloroethane	0.1	µg/L	1.1	ng	6	<	<	<	<	<	<
1,1,2,2-Tetrachloroethane	0.2	µg/L	1	ng	22	<	<	<	<	<	<
Tetrachloroethylene	0.1	µg/L	1.6	30	110	<0.4	<	<0.4	<	<0.4	<
Toluene	0.2	µg/L	24	24 ³	83	<	<	<	<	<	<
1,1,1-Trichloroethane	0.1	µg/L	200	ng	4200	<	<	<	<	<	<
1,1,2-Trichloroethane	0.2	µg/L	4.7	ng	9400	<	<	<	<	<	<
Trichloroethylene	0.1	µg/L	1.6	5	20	<	<	0.5	1.5	18	25
Trichlorofluoromethane (FREON 11)	0.2	µg/L	150	ng	ng	<	<	<	<	<	<
Vinyl Chloride	0.2	µg/L	0.5	2	1.1	<	<	<	<	<	<
p+m-Xylene	0.1	µg/L	ns	ng	ng	<	<	<	<	<	<
o-Xylene	0.1	µg/L	ns	ng	ng	<	<	<	<	<	<
Xylene (Total)	0.1	µg/L	300	300 ³	3900	<	<	<	<	<	<

RDL reportable detection limit

< less than RDL

na not applicable

ns no standards

ng no guideline

µg/L micrograms per litre

¹ MOE Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for All Types of Property Use, coarse textured soils (MOE, 2011)

² CCME Community Water: Guidelines for Canadian Drinking Water Quality, Community Water Supplies, Canadian Environmental Quality Guidelines (CCME, 1999, as updated)

³ Aesthetic Objective

⁴ FIGQGs Table 2, Tier 1: Generic Guidelines for residential/parkland use and coarse

Underline Exceeds MOE (2011) Table 2 groundwater standard

Italic Exceeds CCME (1999 as updated) drinking water quality guidelines

BOLD Exceeds FIGQGs (2010) Table 2, Tier 1

TABLE 4.2 GROUNDWATER ANALYTICAL RESULTS - 2011
Volatile Organic Parameters
NCC Property Asset No. 97390, Leirtrim Road, Ottawa, Ontario

SNC-Lavalin Environment Sample No.			2011 MOE Standard Table 2 ¹	CCME Community Water ²	2010 FIGQGs Table 2 Tier 1 ⁴	MW09-9	MW09-9	MW-10-10	MW-10-10	MW-10-11	MW-10-11
<i>Laboratory Sample No.</i>	na	na	na	na	na	JT2473	LB0323	JT2474	LB0324	JT2475	LB0325
<i>Sampling Date</i>	na	na	na	na	na	7-Jun-11	27-Sep-11	7-Jun-11	27-Sep-11	7-Jun-11	27-Sep-11
<i>Monitoring Well No.</i>	na	na	na	na	na	MW09-9	MW09-9	MW-10-10	MW-10-10	MW-10-11	MW-10-11
Acetone	10	µg/L	2700	ng	330	<	<	<	<	<	<
Benzene	0.1	µg/L	5	5	140	<	<	<	<	<	<
Bromodichloromethane	0.1	µg/L	16	16	67000	<	<	<	<	<	<
Bromoform	0.2	µg/L	25	ng	840	<	<	<	<	<	<
Bromomethane	0.5	µg/L	0.89	ng	2	<	<	<	<	<	<
Carbon Tetrachloride	0.1	µg/L	0.79	5	0.56	<	<	<	<	<	<
Chlorobenzene	0.1	µg/L	30	80	1.3	<	<	<	<	<	<
Chloroform	0.1	µg/L	2.4	ng	1.8	<	<	<	<	<	<
Dibromochloromethane	0.2	µg/L	25	ng	1100	<	<	<	<	<	<
1,2-Dichlorobenzene	0.2	µg/L	3	200	0.7	<	<	<	<	<	<
1,3-Dichlorobenzene	0.2	µg/L	59	ng	42	<	<	<	<	<	<
1,4-Dichlorobenzene	0.2	µg/L	1	5	26	<	<	<	<	<	<
Dichlorodifluoromethane (FREON 12)	0.5	µg/L	590	ng	ng	<	<	<	<	<	<
1,1-Dichloroethane	0.1	µg/L	5	ng	9000	<	<	<	<	<	<
1,2-Dichloroethane	0.2	µg/L	1.6	5	10	<	<	<	<	<	<
1,1-Dichloroethylene	0.1	µg/L	1.6	14	39	<	<	<	<	<	<
cis-1,2-Dichloroethylene	0.1	µg/L	1.6	ng	12000	<	<	0.3	0.3	2.8	2.7
trans-1,2-Dichloroethylene	0.1	µg/L	1.6	ng	12000	<	<	<	<	0.7	0.5
1,2-Dichloropropane	0.1	µg/L	5	ng	9.3	<	<	<	<	<	<
cis-1,3-Dichloropropene	0.2	µg/L	ns	ng	ng	<	<	<	<	<	<
trans-1,3-Dichloropropene	0.2	µg/L	ns	ng	ng	<	<	<	<	<	<
1,3-Dichloropropene	0.2	µg/L	0.5	ng	3.8	<	<	<	<	<	<
Ethylbenzene	0.1	µg/L	2.4	2.4 ³	11000	<	<	<	<	<	<
Ethylene Dibromide	0.2	µg/L	0.2	ng	3.3	<	<	<	<	<	<
Hexane	0.5	µg/L	51	ng	ng	<	<	<	<	<	<
Methyl Ethyl Ketone	5	µg/L	1800	ng	120000	<	<	<	<	<	<
Methyl Isobutyl Ketone	5	µg/L	640	ng	57000	<	<	<	<	<	<
Methyl t-butyl ether	0.2	µg/L	15	15 ³	340	<	<	<	<	<	<
Methylene Chloride	0.5	µg/L	50	50	98	<	<	<	<	<	<
Styrene	0.2	µg/L	5.4	ng	72	<	<	<	<	<	<
1,1,1,2-Tetrachloroethane	0.1	µg/L	1.1	ng	6	<	<	<	<	<	<
1,1,2,2-Tetrachloroethane	0.2	µg/L	1	ng	22	<	<	<	<	<	<
Tetrachloroethylene	0.1	µg/L	1.6	30	110	<0.4	<	<0.4	<	<0.4	<
Toluene	0.2	µg/L	24	24 ³	83	<	<	<	<	<	<
1,1,1-Trichloroethane	0.1	µg/L	200	ng	4200	<	<	<	<	<	<
1,1,2-Trichloroethane	0.2	µg/L	4.7	ng	9400	<	<	<	<	<	<
Trichloroethylene	0.1	µg/L	1.6	5	20	<	0.2	6.4	6.5	8.9	7.2
Trichlorofluoromethane (FREON 11)	0.2	µg/L	150	ng	ng	<	<	<	<	<	<
Vinyl Chloride	0.2	µg/L	0.5	2	1.1	<	<	<	<	<	<
p+m-Xylene	0.1	µg/L	ns	ng	ng	<	<	<	<	<	<
o-Xylene	0.1	µg/L	ns	ng	ng	<	<	<	<	<	<
Xylene (Total)	0.1	µg/L	300	300 ³	3900	<	<	<	<	<	<

RDL reportable detection limit

< less than RDL

na not applicable

ns no standards

ng no guideline

µg/L micrograms per litre

¹ MOE Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for All Types of Property Use, coarse textured soils (MOE, 2011)

² CCME Community Water: Guidelines for Canadian Drinking Water Quality, Community Water Supplies, Canadian Environmental Quality Guidelines (CCME, 1999, as updated)

³ Aesthetic Objective

⁴ FIGQGs Table 2, Tier 1: Generic Guidelines for residential/parkland use and coarse

Underline Exceeds MOE (2011) Table 2 groundwater standard

Italic Exceeds CCME (1999 as updated) drinking water quality guidelines

BOLD Exceeds FIGQGs (2010) Table 2, Tier 1

TABLE 4.2 GROUNDWATER ANALYTICAL RESULTS - 2011
Volatile Organic Parameters
NCC Property Asset No. 97390, Leirtrim Road, Ottawa, Ontario

SNC-Lavalin Environment Sample No.			2011 MOE Standard Table 2 ¹	CCME Community Water ²	2010 FIGQGs Table 2 Tier 1 ⁴	MW-10-12	MW-10-12	MW-10-13	MW-99 Field Dupl. of MW-10-13	MW-10-13	MW-99 Field Dupl. of MW-10-13
<i>Laboratory Sample No.</i>	na	na	na	na	na	JT2476	LB0326	JT2511	JT2512	LB0344	LB0345
<i>Sampling Date</i>	na	na	na	na	na	7-Jun-11	27-Sep-11	7-Jun-11	7-Jun-11	27-Sep-11	27-Sep-11
<i>Monitoring Well No.</i>	na	na	na	na	na	MW-10-12	MW-10-12	MW-10-13	MW-10-13	MW-10-13	MW-99
Acetone	10	µg/L	2700	ng	330	<	<	<	<	<	<
Benzene	0.1	µg/L	5	5	140	<	<	<	<	0.1	0.1
Bromodichloromethane	0.1	µg/L	16	16	67000	<	<	<	<	<	<
Bromoform	0.2	µg/L	25	ng	840	<	<	<	<	<	<
Bromomethane	0.5	µg/L	0.89	ng	2	<	<	<	<	<	<
Carbon Tetrachloride	0.1	µg/L	0.79	5	0.56	<	<	<	<	<	<
Chlorobenzene	0.1	µg/L	30	80	1.3	<	<	<	<	<	<
Chloroform	0.1	µg/L	2.4	ng	1.8	<	<	<	<	<	<
Dibromochloromethane	0.2	µg/L	25	ng	1100	<	<	<	<	<	<
1,2-Dichlorobenzene	0.2	µg/L	3	200	0.7	<	<	<	<	<	<
1,3-Dichlorobenzene	0.2	µg/L	59	ng	42	<	<	<	<	<	<
1,4-Dichlorobenzene	0.2	µg/L	1	5	26	<	<	<	<	<	<
Dichlorodifluoromethane (FREON 12)	0.5	µg/L	590	ng	ng	<	<	<	<	<	<
1,1-Dichloroethane	0.1	µg/L	5	ng	9000	<	<	<	<	<	0.1
1,2-Dichloroethane	0.2	µg/L	1.6	5	10	<	<	<	<	<	<
1,1-Dichloroethylene	0.1	µg/L	1.6	14	39	<	<	<	<	<	<
cis-1,2-Dichloroethylene	0.1	µg/L	1.6	ng	12000	<	<	0.3	0.2	1.1	1.0
trans-1,2-Dichloroethylene	0.1	µg/L	1.6	ng	12000	<	<	<	<	0.2	0.2
1,2-Dichloropropane	0.1	µg/L	5	ng	9.3	<	<	<	<	<	<
cis-1,3-Dichloropropene	0.2	µg/L	ns	ng	ng	<	<	<	<	<	<
trans-1,3-Dichloropropene	0.2	µg/L	ns	ng	ng	<	<	<	<	<	<
1,3-Dichloropropene	0.2	µg/L	0.5	ng	3.8	<	<	<	<	<	<
Ethylbenzene	0.1	µg/L	2.4	2.4 ³	11000	<	<	<	<	<	<
Ethylene Dibromide	0.2	µg/L	0.2	ng	3.3	<	<	<	<	<	<
Hexane	0.5	µg/L	51	ng	ng	<	<	<	<	<	<
Methyl Ethyl Ketone	5	µg/L	1800	ng	120000	<	<	<	<	<	<
Methyl Isobutyl Ketone	5	µg/L	640	ng	57000	<	<	<	<	<	<
Methyl t-butyl ether	0.2	µg/L	15	15 ³	340	<	<	<	<	<	<
Methylene Chloride	0.5	µg/L	50	50	98	<	<	<	<	<	<
Styrene	0.2	µg/L	5.4	ng	72	<	<	<	<	<	<
1,1,1,2-Tetrachloroethane	0.1	µg/L	1.1	ng	6	<	<	<	<	<	<
1,1,2,2-Tetrachloroethane	0.2	µg/L	1	ng	22	<	<	<	<	<	<
Tetrachloroethylene	0.1	µg/L	1.6	30	110	<0.4	<	<0.4	<0.4	<	<
Toluene	0.2	µg/L	24	24 ³	83	<	<	<	<	<	<
1,1,1-Trichloroethane	0.1	µg/L	200	ng	4200	<	<	<	<	<	<
1,1,2-Trichloroethane	0.2	µg/L	4.7	ng	9400	<	<	<	<	<	<
Trichloroethylene	0.1	µg/L	1.6	5	20	<	<	2.4	1.9	6.1	5.8
Trichlorofluoromethane (FREON 11)	0.2	µg/L	150	ng	ng	<	<	<	<	<	<
Vinyl Chloride	0.2	µg/L	0.5	2	1.1	<	<	<	<	<	<
p+m-Xylene	0.1	µg/L	ns	ng	ng	<	<	<	<	<	<
o-Xylene	0.1	µg/L	ns	ng	ng	<	<	<	<	<	<
Xylene (Total)	0.1	µg/L	300	300 ³	3900	<	<	<	<	<	<

RDL reportable detection limit

< less than RDL

na not applicable

ns no standards

ng no guideline

µg/L micrograms per litre

¹ MOE Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for All Types of Property Use, coarse textured soils (MOE, 2011)

² CCME Community Water: Guidelines for Canadian Drinking Water Quality, Community Water Supplies, Canadian Environmental Quality Guidelines (CCME, 1999, as updated)

³ Aesthetic Objective

⁴ FIGQGs Table 2, Tier 1: Generic Guidelines for residential/parkland use and coarse

Underline Exceeds MOE (2011) Table 2 groundwater standard

Italic Exceeds CCME (1999 as updated) drinking water quality guidelines

BOLD Exceeds FIGQGs (2010) Table 2, Tier 1

TABLE 4.2 GROUNDWATER ANALYTICAL RESULTS - 2011
Volatile Organic Parameters
NCC Property Asset No. 97390, Leirtrim Road, Ottawa, Ontario

SNC-Lavalin Environment Sample No.			2011 MOE Standard Table 2 ¹	CCME Community Water ²	2010 FIGQGs Table 2 Tier 1 ⁴	MW-10-14	MW-10-14	MW-10-15	MW-10-15	MW-10-16	MW-10-16
<i>Laboratory Sample No.</i>	na	na	na	na	na	JT2513	LB0346	JT2514	LB0347	JT2515	LB0348
<i>Sampling Date</i>	na	na	na	na	na	7-Jun-11	27-Sep-11	7-Jun-11	27-Sep-11	7-Jun-11	27-Sep-11
<i>Monitoring Well No.</i>	na	na	na	na	na	MW-10-14	MW-10-14	MW-10-15	MW-10-15	MW-10-16	MW-10-16
Acetone	10	µg/L	2700	ng	330	<	<	<	<	<	<
Benzene	0.1	µg/L	5	5	140	<	<	<	<	<	<
Bromodichloromethane	0.1	µg/L	16	16	67000	<	<	<	<	<	<
Bromoform	0.2	µg/L	25	ng	840	<	<	<	<	<	<
Bromomethane	0.5	µg/L	0.89	ng	2	<	<	<	<	<	<
Carbon Tetrachloride	0.1	µg/L	0.79	5	0.56	<	<	<	<	<	<
Chlorobenzene	0.1	µg/L	30	80	1.3	<	<	<	<	<	<
Chloroform	0.1	µg/L	2.4	ng	1.8	<	<	<	<	<	<
Dibromochloromethane	0.2	µg/L	25	ng	1100	<	<	<	<	<	<
1,2-Dichlorobenzene	0.2	µg/L	3	200	0.7	<	<	<	<	<	<
1,3-Dichlorobenzene	0.2	µg/L	59	ng	42	<	<	<	<	<	<
1,4-Dichlorobenzene	0.2	µg/L	1	5	26	<	<	<	<	<	<
Dichlorodifluoromethane (FREON 12)	0.5	µg/L	590	ng	ng	<	<	<	<	<	<
1,1-Dichloroethane	0.1	µg/L	5	ng	9000	<	<	<	<	0.2	0.3
1,2-Dichloroethane	0.2	µg/L	1.6	5	10	<	<	<	<	<	<
1,1-Dichloroethylene	0.1	µg/L	1.6	14	39	<	<	<	<	<	<
cis-1,2-Dichloroethylene	0.1	µg/L	1.6	ng	12000	<	<	0.1	0.7	<	0.1
trans-1,2-Dichloroethylene	0.1	µg/L	1.6	ng	12000	<	<	<	<	<	<
1,2-Dichloropropane	0.1	µg/L	5	ng	9.3	<	<	<	<	<	<
cis-1,3-Dichloropropene	0.2	µg/L	ns	ng	ng	<	<	<	<	<	<
trans-1,3-Dichloropropene	0.2	µg/L	ns	ng	ng	<	<	<	<	<	<
1,3-Dichloropropene	0.2	µg/L	0.5	ng	3.8	<	<	<	<	<	<
Ethylbenzene	0.1	µg/L	2.4	2.4 ³	11000	<	<	<	<	<	<
Ethylene Dibromide	0.2	µg/L	0.2	ng	3.3	<	<	<	<	<	<
Hexane	0.5	µg/L	51	ng	ng	<	<	<	<	<	<
Methyl Ethyl Ketone	5	µg/L	1800	ng	120000	<	<	<	<	<	<
Methyl Isobutyl Ketone	5	µg/L	640	ng	57000	<	<	<	<	<	<
Methyl t-butyl ether	0.2	µg/L	15	15 ³	340	<	<	<	<	<	<
Methylene Chloride	0.5	µg/L	50	50	98	<	<	<	<	<	<
Styrene	0.2	µg/L	5.4	ng	72	<	<	<	<	<	<
1,1,1,2-Tetrachloroethane	0.1	µg/L	1.1	ng	6	<	<	<	<	<	<
1,1,2,2-Tetrachloroethane	0.2	µg/L	1	ng	22	<	<	<	<	<	<
Tetrachloroethylene	0.1	µg/L	1.6	30	110	<0.4	<	<0.4	<	<0.4	<
Toluene	0.2	µg/L	24	24 ³	83	<	<	<	<	<	<
1,1,1-Trichloroethane	0.1	µg/L	200	ng	4200	<	<	<	<	<	<
1,1,2-Trichloroethane	0.2	µg/L	4.7	ng	9400	<	<	<	<	<	<
Trichloroethylene	0.1	µg/L	1.6	5	20	<	<	1.3	<u>4.9</u>	<	<
Trichlorofluoromethane (FREON 11)	0.2	µg/L	150	ng	ng	<	<	<	<	<	<
Vinyl Chloride	0.2	µg/L	0.5	2	1.1	<	<	<	<	<	<
p+m-Xylene	0.1	µg/L	ns	ng	ng	<	<	<	<	<	<
o-Xylene	0.1	µg/L	ns	ng	ng	<	<	<	<	<	<
Xylene (Total)	0.1	µg/L	300	300 ³	3900	<	<	<	<	<	<

RDL reportable detection limit

< less than RDL

na not applicable

ns no standards

ng no guideline

µg/L micrograms per litre

¹ MOE Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for All Types of Property Use, coarse textured soils (MOE, 2011)

² CCME Community Water: Guidelines for Canadian Drinking Water Quality, Community Water Supplies, Canadian Environmental Quality Guidelines (CCME, 1999, as updated)

³ Aesthetic Objective

⁴ FIGQGs Table 2, Tier 1: Generic Guidelines for residential/parkland use and coarse

Underline Exceeds MOE (2011) Table 2 groundwater standard

Italic Exceeds CCME (1999 as updated) drinking water quality guidelines

BOLD Exceeds FIGQGs (2010) Table 2, Tier 1

TABLE 4.2 GROUNDWATER ANALYTICAL RESULTS - 2011
Volatile Organic Parameters
NCC Property Asset No. 97390, Leitrim Road, Ottawa, Ontario

SNC-Lavalin Environment Sample No.			2011 MOE Standard Table 2 ¹	CCME Community Water ²	2010 FIGQGs Table 2 Tier 1 ⁴	MW-10-17	MW-98 Field Dupl. of MW-10-17	MW-10-17	MW-98 Field Dupl. of MW-10-17	MW-10-18	MW-10-18
<i>Laboratory Sample No.</i>	na	na	na	na	na	JT2516	JT2517	LB0349	LB0350	JT2518	LB0351
<i>Sampling Date</i>	na	na	na	na	na	7-Jun-11	7-Jun-11	27-Sep-11	27-Sep-11	7-Jun-11	27-Sep-11
<i>Monitoring Well No.</i>	na	na	na	na	na	MW-10-17	MW-10-17	MW-10-17	MW-98	MW-10-18	MW-10-18
Acetone	10	µg/L	2700	ng	330	<	<	<	<	<	<
Benzene	0.1	µg/L	5	5	140	1.5	1.5	1.5	1.5	<	<
Bromodichloromethane	0.1	µg/L	16	16	67000	<	<	<	<	<	<
Bromoform	0.2	µg/L	25	ng	840	<	<	<	<	<	<
Bromomethane	0.5	µg/L	0.89	ng	2	<	<	<	<	<	<
Carbon Tetrachloride	0.1	µg/L	0.79	5	0.56	<	<	<	<	<	<
Chlorobenzene	0.1	µg/L	30	80	1.3	<	<	<	<	<	<
Chloroform	0.1	µg/L	2.4	ng	1.8	<	<	<	<	<	<
Dibromochloromethane	0.2	µg/L	25	ng	1100	<	<	<	<	<	<
1,2-Dichlorobenzene	0.2	µg/L	3	200	0.7	<	<	<	<	<	<
1,3-Dichlorobenzene	0.2	µg/L	59	ng	42	<	<	<	<	<	<
1,4-Dichlorobenzene	0.2	µg/L	1	5	26	<	<	<	<	<	<
Dichlorodifluoromethane (FREON 12)	0.5	µg/L	590	ng	ng	<	<	<	<	<	<
1,1-Dichloroethane	0.1	µg/L	5	ng	9000	0.2	0.2	0.3	0.3	<	<
1,2-Dichloroethane	0.2	µg/L	1.6	5	10	0.5	0.5	0.6	0.6	<	<
1,1-Dichloroethylene	0.1	µg/L	1.6	14	39	0.1	0.1	0.2	0.2	<	<
cis-1,2-Dichloroethylene	0.1	µg/L	1.6	ng	12000	<u>5.0</u>	<u>5.0</u>	<u>6.0</u>	<u>6.2</u>	<	<
trans-1,2-Dichloroethylene	0.1	µg/L	1.6	ng	12000	1.1	1.1	1.1	1.2	<	<
1,2-Dichloropropane	0.1	µg/L	5	ng	9.3	<	<	<	<	<	<
cis-1,3-Dichloropropene	0.2	µg/L	ns	ng	ng	<	<	<	<	<	<
trans-1,3-Dichloropropene	0.2	µg/L	ns	ng	ng	<	<	<	<	<	<
1,3-Dichloropropene	0.2	µg/L	0.5	ng	3.8	<	<	<	<	<	<
Ethylbenzene	0.1	µg/L	2.4	2.4 ³	11000	<	<	<	<	<	<
Ethylene Dibromide	0.2	µg/L	0.2	ng	3.3	<	<	<	<	<	<
Hexane	0.5	µg/L	51	ng	ng	<	<	<	<	<	<
Methyl Ethyl Ketone	5	µg/L	1800	ng	120000	<	<	<	<	<	<
Methyl Isobutyl Ketone	5	µg/L	640	ng	57000	<	<	<	<	<	<
Methyl t-butyl ether	0.2	µg/L	15	15 ³	340	<	<	<	<	<	<
Methylene Chloride	0.5	µg/L	50	50	98	<	<	<	<	<	<
Styrene	0.2	µg/L	5.4	ng	72	<	<	<	<	<	<
1,1,1,2-Tetrachloroethane	0.1	µg/L	1.1	ng	6	<	<	<	<	<	<
1,1,2,2-Tetrachloroethane	0.2	µg/L	1	ng	22	<	<	<	<	<	<
Tetrachloroethylene	0.1	µg/L	1.6	30	110	<0.4	<0.4	<	<	<0.4	<
Toluene	0.2	µg/L	24	24 ³	83	<	<	<	<	<	<
1,1,1-Trichloroethane	0.1	µg/L	200	ng	4200	<	<	<	<	<	<
1,1,2-Trichloroethane	0.2	µg/L	4.7	ng	9400	<	<	<	<	<	<
Trichloroethylene	0.1	µg/L	1.6	5	20	<u>10</u>	<u>10</u>	<u>9.2</u>	<u>9.9</u>	<	<
Trichlorofluoromethane (FREON 11)	0.2	µg/L	150	ng	ng	<	<	<	<	<	<
Vinyl Chloride	0.2	µg/L	0.5	2	1.1	<	<	<	<	<	<
p+m-Xylene	0.1	µg/L	ns	ng	ng	<	<	0.3	0.3	<	0.5
o-Xylene	0.1	µg/L	ns	ng	ng	<	<	0.2	0.2	<	0.2
Xylene (Total)	0.1	µg/L	300	300 ³	3900	<	<	0.5	0.5	<	0.7

RDL	reportable detection limit
<	less than RDL
na	not applicable
ns	no standards
ng	no guideline
µg/L	micrograms per litre
¹	MOE Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for All Types of Property Use, coarse textured soils (MOE, 2011)
²	CCME Community Water: Guidelines for Canadian Drinking Water Quality, Community Water Supplies, Canadian Environmental Quality Guidelines (CCME, 1999, as updated)
³	Aesthetic Objective
⁴	FIGQGs Table 2, Tier 1: Generic Guidelines for residential/parkland use and coarse
<u>Underline</u>	Exceeds MOE (2011) Table 2 groundwater standard
<i>Italic</i>	Exceeds CCME (1999 as updated) drinking water quality guidelines
BOLD	Exceeds FIGQGs (2010) Table 2, Tier 1

TABLE 4.2 GROUNDWATER ANALYTICAL RESULTS - 2011
Volatile Organic Parameters
NCC Property Asset No. 97390, Leirtrim Road, Ottawa, Ontario

SNC-Lavalin Environment Sample No.			2011 MOE Standard Table 2 ¹	CCME Community Water ²	2010 FIGQGs Table 2 Tier 1 ⁴	MW-10-19	MW-10-19	MW-10-20	MW-10-20	MW-10-21	MW-10-21
<i>Laboratory Sample No.</i>	na	na	na	na	na	JT2519	LB0352	JT2520	LB0353	JT2568	LB0360
<i>Sampling Date</i>	na	na	na	na	na	7-Jun-11	27-Sep-11	7-Jun-11	27-Sep-11	7-Jun-11	27-Sep-11
<i>Monitoring Well No.</i>	na	na	na	na	na	MW-10-19	MW-10-19	MW-10-20	MW-10-20	MW-10-21	MW-10-21
Acetone	10	µg/L	2700	ng	330	<	<	<	<	<	<
Benzene	0.1	µg/L	5	5	140	<	<	<	<	<	<
Bromodichloromethane	0.1	µg/L	16	16	67000	<	<	<	<	<	<
Bromoform	0.2	µg/L	25	ng	840	<	<	<	<	<	<
Bromomethane	0.5	µg/L	0.89	ng	2	<	<	<	<	<	<
Carbon Tetrachloride	0.1	µg/L	0.79	5	0.56	<	<	<	<	<	<
Chlorobenzene	0.1	µg/L	30	80	1.3	<	<	<	<	<	<
Chloroform	0.1	µg/L	2.4	ng	1.8	<	<	<	<	<	<
Dibromochloromethane	0.2	µg/L	25	ng	1100	<	<	<	<	<	<
1,2-Dichlorobenzene	0.2	µg/L	3	200	0.7	<	<	<	<	<	<
1,3-Dichlorobenzene	0.2	µg/L	59	ng	42	<	<	<	<	<	<
1,4-Dichlorobenzene	0.2	µg/L	1	5	26	<	<	<	<	<	<
Dichlorodifluoromethane (FREON 12)	0.5	µg/L	590	ng	ng	<	<	<	<	<	<
1,1-Dichloroethane	0.1	µg/L	5	ng	9000	<	<	<	<	<	<
1,2-Dichloroethane	0.2	µg/L	1.6	5	10	<	<	<	<	<	<
1,1-Dichloroethylene	0.1	µg/L	1.6	14	39	<	<	<	<	<	<
cis-1,2-Dichloroethylene	0.1	µg/L	1.6	ng	12000	<	<	<	0.3	<	<
trans-1,2-Dichloroethylene	0.1	µg/L	1.6	ng	12000	<	<	<	<	<	<
1,2-Dichloropropane	0.1	µg/L	5	ng	9.3	<	<	<	<	<	<
cis-1,3-Dichloropropene	0.2	µg/L	ns	ng	ng	<	<	<	<	<	<
trans-1,3-Dichloropropene	0.2	µg/L	ns	ng	ng	<	<	<	<	<	<
1,3-Dichloropropene	0.2	µg/L	0.5	ng	3.8	<	<	<	<	<	<
Ethylbenzene	0.1	µg/L	2.4	2.4 ³	11000	<	<	<	<	<	<
Ethylene Dibromide	0.2	µg/L	0.2	ng	3.3	<	<	<	<	<	<
Hexane	0.5	µg/L	51	ng	ng	<	<	<	<	<	<
Methyl Ethyl Ketone	5	µg/L	1800	ng	120000	<	<	<	<	<	<
Methyl Isobutyl Ketone	5	µg/L	640	ng	57000	<	<	<	<	<	<
Methyl t-butyl ether	0.2	µg/L	15	15 ³	340	<	<	<	<	<	<
Methylene Chloride	0.5	µg/L	50	50	98	<	<	<	<	<	<
Styrene	0.2	µg/L	5.4	ng	72	<	<	<	<	<	<
1,1,1,2-Tetrachloroethane	0.1	µg/L	1.1	ng	6	<	<	<	<	<	<
1,1,2,2-Tetrachloroethane	0.2	µg/L	1	ng	22	<	<	<	<	<	<
Tetrachloroethylene	0.1	µg/L	1.6	30	110	<0.4	<	<0.4	<	<	<
Toluene	0.2	µg/L	24	24 ³	83	<	<	<	<	<	0.2
1,1,1-Trichloroethane	0.1	µg/L	200	ng	4200	<	<	<	<	<	<
1,1,2-Trichloroethane	0.2	µg/L	4.7	ng	9400	<	<	<	<	<	<
Trichloroethylene	0.1	µg/L	1.6	5	20	<	<	<	0.2	<	<
Trichlorofluoromethane (FREON 11)	0.2	µg/L	150	ng	ng	<	<	<	<	<	<
Vinyl Chloride	0.2	µg/L	0.5	2	1.1	<	<	<	<	<	<
p+m-Xylene	0.1	µg/L	ns	ng	ng	<	0.2	<	0.4	<	0.5
o-Xylene	0.1	µg/L	ns	ng	ng	<	<	<	0.2	<	0.3
Xylene (Total)	0.1	µg/L	300	300 ³	3900	<	0.2	<	0.6	<	0.8

RDL reportable detection limit

< less than RDL

na not applicable

ns no standards

ng no guideline

µg/L micrograms per litre

¹ MOE Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for All Types of Property Use, coarse textured soils (MOE, 2011)

² CCME Community Water: Guidelines for Canadian Drinking Water Quality, Community Water Supplies, Canadian Environmental Quality Guidelines (CCME, 1999, as updated)

³ Aesthetic Objective

⁴ FIGQGs Table 2, Tier 1: Generic Guidelines for residential/parkland use and coarse

Underline Exceeds MOE (2011) Table 2 groundwater standard

Italic Exceeds CCME (1999 as updated) drinking water quality guidelines

BOLD Exceeds FIGQGs (2010) Table 2, Tier 1

TABLE 4.2 GROUNDWATER ANALYTICAL RESULTS - 2011
Volatile Organic Parameters
NCC Property Asset No. 97390, Leirtrim Road, Ottawa, Ontario

SNC-Lavalin Environment Sample No.			2011 MOE Standard Table 2 ¹	CCME Community Water ²	2010 FIGQGs Table 2 Tier 1 ⁴	MW-10-22	MW-10-22	MW-10-23	MW-10-23	MW-10-24	MW-10-24
<i>Laboratory Sample No.</i>	na	na	na	na	na	JT2569	LB0361	JT2570	LB0362	JT2571	LB0363
<i>Sampling Date</i>	na	na	na	na	na	7-Jun-11	27-Sep-11	7-Jun-11	27-Sep-11	7-Jun-11	27-Sep-11
<i>Monitoring Well No.</i>	na	na	na	na	na	MW-10-22	MW-10-22	MW-10-23	MW-10-23	MW-10-24	MW-10-24
Acetone	10	µg/L	2700	ng	330	<	<	<	<	<	<
Benzene	0.1	µg/L	5	5	140	<	<	<	<	<	<
Bromodichloromethane	0.1	µg/L	16	16	67000	<	<	<	<	<	<
Bromoform	0.2	µg/L	25	ng	840	<	<	<	<	<	<
Bromomethane	0.5	µg/L	0.89	ng	2	<	<	<	<	<	<
Carbon Tetrachloride	0.1	µg/L	0.79	5	0.56	<	<	<	<	<	<
Chlorobenzene	0.1	µg/L	30	80	1.3	<	<	<	<	<	<
Chloroform	0.1	µg/L	2.4	ng	1.8	<	<	<	<	<	<
Dibromochloromethane	0.2	µg/L	25	ng	1100	<	<	<	<	<	<
1,2-Dichlorobenzene	0.2	µg/L	3	200	0.7	<	<	<	<	<	<
1,3-Dichlorobenzene	0.2	µg/L	59	ng	42	<	<	<	<	<	<
1,4-Dichlorobenzene	0.2	µg/L	1	5	26	<	<	<	<	<	<
Dichlorodifluoromethane (FREON 12)	0.5	µg/L	590	ng	ng	<	<	<	<	<	<
1,1-Dichloroethane	0.1	µg/L	5	ng	9000	<	<	<	<	<	0.2
1,2-Dichloroethane	0.2	µg/L	1.6	5	10	<	<	<	<	<	<
1,1-Dichloroethylene	0.1	µg/L	1.6	14	39	<	<	<	<	<	<
cis-1,2-Dichloroethylene	0.1	µg/L	1.6	ng	12000	<	<	<	<	<	<
trans-1,2-Dichloroethylene	0.1	µg/L	1.6	ng	12000	<	<	<	<	<	<
1,2-Dichloropropane	0.1	µg/L	5	ng	9.3	<	<	<	<	<	<
cis-1,3-Dichloropropene	0.2	µg/L	ns	ng	ng	<	<	<	<	<	<
trans-1,3-Dichloropropene	0.2	µg/L	ns	ng	ng	<	<	<	<	<	<
1,3-Dichloropropene	0.2	µg/L	0.5	ng	3.8	<	<	<	<	<	<
Ethylbenzene	0.1	µg/L	2.4	2.4 ³	11000	0.2	<	<	<	<	<
Ethylene Dibromide	0.2	µg/L	0.2	ng	3.3	<	<	<	<	<	<
Hexane	0.5	µg/L	51	ng	ng	<	<	<	<	<	<
Methyl Ethyl Ketone	5	µg/L	1800	ng	120000	<	<	<	<	<	<
Methyl Isobutyl Ketone	5	µg/L	640	ng	57000	<	<	<	<	<	<
Methyl t-butyl ether	0.2	µg/L	15	15 ³	340	<	<	<	<	<	<
Methylene Chloride	0.5	µg/L	50	50	98	<	<	<	<	<	<
Styrene	0.2	µg/L	5.4	ng	72	<	<	<	<	<	<
1,1,1,2-Tetrachloroethane	0.1	µg/L	1.1	ng	6	<	<	<	<	<	<
1,1,2,2-Tetrachloroethane	0.2	µg/L	1	ng	22	<	<	<	<	<	<
Tetrachloroethylene	0.1	µg/L	1.6	30	110	<	<	<	<	<	<
Toluene	0.2	µg/L	24	24 ³	83	<	<	<	0.2	<	<
1,1,1-Trichloroethane	0.1	µg/L	200	ng	4200	<	<	<	<	<	<
1,1,2-Trichloroethane	0.2	µg/L	4.7	ng	9400	<	<	<	<	<	<
Trichloroethylene	0.1	µg/L	1.6	5	20	<	<	<	<	<	<
Trichlorofluoromethane (FREON 11)	0.2	µg/L	150	ng	ng	<	<	<	<	<	<
Vinyl Chloride	0.2	µg/L	0.5	2	1.1	<	<	<	<	<	<
p+m-Xylene	0.1	µg/L	ns	ng	ng	0.7	0.5	0.2	0.6	<	<
o-Xylene	0.1	µg/L	ns	ng	ng	0.4	0.2	0.1	0.3	<	<
Xylene (Total)	0.1	µg/L	300	300 ³	3900	1.0	0.7	0.3	0.9	<	<

RDL reportable detection limit

< less than RDL

na not applicable

ns no standards

ng no guideline

µg/L micrograms per litre

¹ MOE Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for All Types of Property Use, coarse textured soils (MOE, 2011)

² CCME Community Water: Guidelines for Canadian Drinking Water Quality, Community Water Supplies, Canadian Environmental Quality Guidelines (CCME, 1999, as updated)

³ Aesthetic Objective

⁴ FIGQGs Table 2, Tier 1: Generic Guidelines for residential/parkland use and coarse

Underline Exceeds MOE (2011) Table 2 groundwater standard

Italic Exceeds CCME (1999 as updated) drinking water quality guidelines

BOLD Exceeds FIGQGs (2010) Table 2, Tier 1

TABLE 4.2 GROUNDWATER ANALYTICAL RESULTS - 2011
Volatile Organic Parameters
NCC Property Asset No. 97390, Leitrim Road, Ottawa, Ontario

SNC-Lavalin Environment Sample No.			2011 MOE Standard Table 2 ¹	CCME Community Water ²	2010 FIGQGs Table 2 Tier 1 ⁴	MW-10-25	MW-10-25
	RDL	Units					
<i>Laboratory Sample No.</i>	na	na	na	na	na	JT2572	LB0364
<i>Sampling Date</i>	na	na	na	na	na	7-Jun-11	27-Sep-11
<i>Monitoring Well No.</i>	na	na	na	na	na	MW-10-25	MW-10-25
Acetone	10	µg/L	2700	ng	330	<	<
Benzene	0.1	µg/L	5	5	140	<	<
Bromodichloromethane	0.1	µg/L	16	16	67000	<	<
Bromoform	0.2	µg/L	25	ng	840	<	<
Bromomethane	0.5	µg/L	0.89	ng	2	<	<
Carbon Tetrachloride	0.1	µg/L	0.79	5	0.56	<	<
Chlorobenzene	0.1	µg/L	30	80	1.3	<	<
Chloroform	0.1	µg/L	2.4	ng	1.8	<	<
Dibromochloromethane	0.2	µg/L	25	ng	1100	<	<
1,2-Dichlorobenzene	0.2	µg/L	3	200	0.7	<	<
1,3-Dichlorobenzene	0.2	µg/L	59	ng	42	<	<
1,4-Dichlorobenzene	0.2	µg/L	1	5	26	<	<
Dichlorodifluoromethane (FREON 12)	0.5	µg/L	590	ng	ng	<	<
1,1-Dichloroethane	0.1	µg/L	5	ng	9000	<	<
1,2-Dichloroethane	0.2	µg/L	1.6	5	10	<	<
1,1-Dichloroethylene	0.1	µg/L	1.6	14	39	<	<
cis-1,2-Dichloroethylene	0.1	µg/L	1.6	ng	12000	<	0.1
trans-1,2-Dichloroethylene	0.1	µg/L	1.6	ng	12000	<	<
1,2-Dichloropropane	0.1	µg/L	5	ng	9.3	<	<
cis-1,3-Dichloropropene	0.2	µg/L	ns	ng	ng	<	<
trans-1,3-Dichloropropene	0.2	µg/L	ns	ng	ng	<	<
1,3-Dichloropropene	0.2	µg/L	0.5	ng	3.8	<	<
Ethylbenzene	0.1	µg/L	2.4	2.4 ³	11000	<	<
Ethylene Dibromide	0.2	µg/L	0.2	ng	3.3	<	<
Hexane	0.5	µg/L	51	ng	ng	<	<
Methyl Ethyl Ketone	5	µg/L	1800	ng	120000	<	<
Methyl Isobutyl Ketone	5	µg/L	640	ng	57000	<	<
Methyl t-butyl ether	0.2	µg/L	15	15 ³	340	<	<
Methylene Chloride	0.5	µg/L	50	50	98	<	<
Styrene	0.2	µg/L	5.4	ng	72	<	<
1,1,1,2-Tetrachloroethane	0.1	µg/L	1.1	ng	6	<	<
1,1,2,2-Tetrachloroethane	0.2	µg/L	1	ng	22	<	<
Tetrachloroethylene	0.1	µg/L	1.6	30	110	<	<
Toluene	0.2	µg/L	24	24 ³	83	<	<
1,1,1-Trichloroethane	0.1	µg/L	200	ng	4200	<	<
1,1,2-Trichloroethane	0.2	µg/L	4.7	ng	9400	<	<
Trichloroethylene	0.1	µg/L	1.6	5	20	<	<
Trichlorofluoromethane (FREON 11)	0.2	µg/L	150	ng	ng	<	<
Vinyl Chloride	0.2	µg/L	0.5	2	1.1	<	<
p+m-Xylene	0.1	µg/L	ns	ng	ng	0.1	<
o-Xylene	0.1	µg/L	ns	ng	ng	<	<
Xylene (Total)	0.1	µg/L	300	300 ³	3900	0.1	<

RDL reportable detection limit

< less than RDL

na not applicable

ns no standards

ng no guideline

µg/L micrograms per litre

¹ MOE Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for All Types of Property Use, coarse textured soils (MOE, 2011)

² CCME Community Water: Guidelines for Canadian Drinking Water Quality, Community Water Supplies, Canadian Environmental Quality Guidelines (CCME, 1999, as updated)

³ Aesthetic Objective

⁴ FIGQGs Table 2, Tier 1: Generic Guidelines for residential/parkland use and coarse

Underline Exceeds MOE (2011) Table 2 groundwater standard

Italic Exceeds CCME (1999 as updated) drinking water quality guidelines

BOLD Exceeds FIGQGs (2010) Table 2, Tier 1

TABLE 5.1 HISTORICAL GROUNDWATER ANALYTICAL RESULTS - 2008 to 2011
Volatile Organic Compounds
NCC Property Asset No. 97390, Leitrim Road, Ottawa, Ontario

SLE Sample No.			2011 MOE Standard Table 2 ¹	CCME Community Water ²	2010 FIGQGs Table 2 Tier 1 ⁴	MW08-1					MW08-2			
	RDL	Units												
Laboratory Sample No.	na	na	na	na	na	0826015-01	0835081-01	DJ5420	JT2467	LB0317	0826015-02	DJ5421	JT2468	LB0318
Sampling Date	na	na	na	na	na	23-Jun-08	27-Aug-08	14-Aug-09	7-Jun-11	27-Sep-11	23-Jun-08	14-Aug-09	7-Jun-11	27-Sep-11
Monitoring Well No.	na	na	na	na	na	MW08-1	MW08-1	MW08-1	MW08-1	MW08-1	MW08-2	MW08-2	MW08-2	MW08-2
Acetone	10	µg/L	2700	ng	330	-	-	-	<	<	-	-	<	<
Benzene	0.1	µg/L	5	5	140	<	<	-	<	<	<	-	<	<
Bromodichloromethane	0.1	µg/L	16	16	67000	<	<	-	<	<	<	-	<	<
Bromoform	0.2	µg/L	25	ng	840	<	<	-	<	<	<	-	<	<
Bromomethane	0.5	µg/L	0.89	ng	2	<	<	-	<	<	<	-	<	<
Carbon Tetrachloride	0.1	µg/L	0.79	5	0.56	<	<	-	<	<	<	-	<	<
Chlorobenzene	0.1	µg/L	30	80	1.3	<	<	-	<	<	<	-	<	<
Chloroethane	1	µg/L	ns	ng	ng	<	<	-	-	-	<	-	-	-
Chloroform	0.1	µg/L	2.4	ng	1.8	<	<	-	<	<	<	-	<	<
Chloromethane	3	µg/L	ns	ng	ng	<	<	-	-	-	<	-	-	-
Dibromochloromethane	0.2	µg/L	25	ng	1100	<	<	-	<	<	<	-	<	<
1,2-Dibromoethane	1	µg/L	ns	ng	ng	<	<	-	-	-	<	-	-	-
1,2-Dichlorobenzene	0.2	µg/L	3	200	0.7	<	<	-	<	<	<	-	<	<
1,3-Dichlorobenzene	0.2	µg/L	59	ng	42	<	<	-	<	<	<	-	<	<
1,4-Dichlorobenzene	0.2	µg/L	1	5	26	<	<	-	<	<	<	-	<	<
Dichlorodifluoromethane	0.5	µg/L	590	ng	ng	-	-	-	<	<	-	-	<	<
1,1-Dichloroethane	0.1	µg/L	5	ng	9000	<	<	-	<	<	<	-	<	<
1,2-Dichloroethane	0.2	µg/L	1.6	5	10	<	<	-	<	<	<	-	<	<
1,1-Dichloroethylene	0.1	µg/L	1.6	14	39	<	<	-	<	<	<	-	<	<
cis-1,2-Dichloroethylene	0.1	µg/L	1.6	ng	12000	0.6	0.8	0.9	1.0	1.2	<	<	<	<
trans-1,2-Dichloroethylene	0.1	µg/L	1.6	ng	12000	<	<	0.2	0.1	0.2	<	<	<	<
1,2-Dichloropropane	0.1	µg/L	5	ng	9.3	<	<	-	<	<	<	-	<	<
cis-1,3-Dichloropropene	0.2	µg/L	ns	ng	ng	<	<	-	<	<	<	-	<	<
trans-1,3-Dichloropropene	0.2	µg/L	ns	ng	ng	<	<	-	<	<	<	-	<	<
1,3-Dichloropropene	0.2	µg/L	0.5	ng	3.8	-	-	-	<	<	-	-	<	<
Ethylbenzene	0.1	µg/L	2.4	2.4 ³	11000	<	<	-	<	<	<	-	<	<
Ethylene Dibromide	0.2	µg/L	0.2	ng	3.3	-	-	-	<	<	-	-	<	<
Hexane	0.5	µg/L	51	ng	ng	-	-	-	<	<	-	-	<	<
Methyl Ethyl Ketone	5	µg/L	1800	ng	120000	-	-	-	<	<	-	-	<	<
Methyl Isobutyl Ketone	5	µg/L	640	ng	57000	-	-	-	<	<	-	-	<	<
Methyl t-butyl ether	0.2	µg/L	15	15 ³	340	-	-	-	<	<	-	-	<	<
Methylene Chloride	0.5	µg/L	50	50	98	<	<	-	<	<	<	-	<	<
Styrene	0.2	µg/L	5.4	ng	72	<	<	-	<	<	<	-	<	<
1,1,1,2-Tetrachloroethane	0.1	µg/L	1.1	ng	6	<	<	-	<	<	<	-	<	<
1,1,2,2-Tetrachloroethane	0.2	µg/L	1	ng	22	<	<	-	<	<	<	-	<	<
Tetrachloroethylene	0.1	µg/L	1.6	30	110	<	<	<	<0.4	<	<	<	<0.4	<
Toluene	0.2	µg/L	24	24 ³	83	<	<	-	<	<	<	-	<	<
1,1,1-Trichloroethane	0.1	µg/L	200	ng	4200	<	<	-	<	<	<	-	<	<
1,1,2-Trichloroethane	0.2	µg/L	4.7	ng	9400	<	<	-	<	<	<	-	<	<
Trichloroethylene	0.1	µg/L	1.6	5	20	9.5	11.1	11	6.3	8.7	<	<	<	<
Trichlorofluoromethane	0.2	µg/L	150	ng	ng	<	<	-	<	<	<	-	<	<
1,3,5-Trimethylbenzene	0.5	µg/L	ns	ng	ng	<	<	-	-	-	<	-	-	-
Vinyl chloride	0.4	µg/L	0.5	2	1.1	<	<	<	-	-	<	<	-	-
p+m-Xylene	0.1	µg/L	ns	ng	ng	<	<	-	<	<	<	-	<	<
o-Xylene	0.1	µg/L	ns	ng	ng	<	<	-	<	<	<	-	<	<
Xylene (Total)	0.1	µg/L	300	300 ³	3900	<	<	-	<	<	<	-	<	<

RDL reportable detection limit

< less than RDL

na not applicable

ns no standards

ng no guideline

µg/L micrograms per litre

- not sampled

¹ MOE Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for All Types of Property Use, coarse textured soils (MOE, 2011)

² CCME Community Water: Guidelines for Canadian Drinking Water Quality, Community Water Supplies, Canadian Environmental Quality Guidelines (CCME, 1999, as updated)

³ Aesthetic Objective

⁴ FIGQGs Table 2, Tier 1: Generic Guidelines for residential/parkland use and coarse textured soils (FIGQG, 2010)

Underline Exceeds MOE (2011) Table 2 groundwater standard

Italic Exceeds CCME (1999 as updated) drinking water quality guidelines

BOLD Exceeds FIGQGs (2010) Table 2, Tier 1

TABLE 5.1 HISTORICAL GROUNDWATER ANALYTICAL RESULTS - 2008 to 2011
Volatile Organic Compounds
NCC Property Asset No. 97390, Leitrim Road, Ottawa, Ontario

SLE Sample No.			2011 MOE Standard Table 2 ¹	CCME Community Water ²	2010 FIGQGs Table 2 Tier 1 ⁴	MW08-3				MW08-4				
	RDL	Units												
Laboratory Sample No.	na	na	na	na	na	0826015-03	DJ5422	JT2469	LB0319	0826015-04	0826015-05	DJ5423	JT2470	LB0320
Sampling Date	na	na	na	na	na	23-Jun-08	14-Aug-09	7-Jun-11	27-Sep-11	23-Jun-08	23-Jun-08	14-Aug-09	7-Jun-11	27-Sep-11
Monitoring Well No.	na	na	na	na	na	MW08-3	MW08-3	MW08-3	MW08-3	MW08-4	na	MW08-4	MW08-4	MW08-4
Acetone	10	µg/L	2700	ng	330	-	-	<	<	-	-	-	<	<
Benzene	0.1	µg/L	5	5	140	<	-	<	<	<	<	-	<	<
Bromodichloromethane	0.1	µg/L	16	16	67000	<	-	<	<	<	<	-	<	<
Bromoform	0.2	µg/L	25	ng	840	<	-	<	<	<	<	-	<	<
Bromomethane	0.5	µg/L	0.89	ng	2	<	-	<	<	<	<	-	<	<
Carbon Tetrachloride	0.1	µg/L	0.79	5	0.56	<	-	<	<	<	<	-	<	<
Chlorobenzene	0.1	µg/L	30	80	1.3	<	-	<	<	<	<	-	<	<
Chloroethane	1	µg/L	ns	ng	ng	<	-	-	-	<	<	-	-	-
Chloroform	0.1	µg/L	2.4	ng	1.8	<	-	<	<	<	<	-	<	<
Chloromethane	3	µg/L	ns	ng	ng	<	-	-	-	<	<	-	-	-
Dibromochloromethane	0.2	µg/L	25	ng	1100	<	-	<	<	<	<	-	<	<
1,2-Dibromoethane	1	µg/L	ns	ng	ng	<	-	-	-	<	<	-	-	-
1,2-Dichlorobenzene	0.2	µg/L	3	200	0.7	<	-	<	<	<	<	-	<	<
1,3-Dichlorobenzene	0.2	µg/L	59	ng	42	<	-	<	<	<	<	-	<	<
1,4-Dichlorobenzene	0.2	µg/L	1	5	26	<	-	<	<	<	<	-	<	<
Dichlorodifluoromethane	0.5	µg/L	590	ng	ng	-	-	<	<	-	-	-	<	<
1,1-Dichloroethane	0.1	µg/L	5	ng	9000	<	-	<	<	<	<	-	<	<
1,2-Dichloroethane	0.2	µg/L	1.6	5	10	<	-	<	<	<	<	-	<	<
1,1-Dichloroethylene	0.1	µg/L	1.6	14	39	<	-	<	<	<	<	-	<	<
cis-1,2-Dichloroethylene	0.1	µg/L	1.6	ng	12000	<	<	<	<	<	<	<	<	0.1
trans-1,2-Dichloroethylene	0.1	µg/L	1.6	ng	12000	<	<	<	<	<	<	<	<	<
1,2-Dichloropropane	0.1	µg/L	5	ng	9.3	<	-	<	<	<	<	-	<	<
cis-1,3-Dichloropropene	0.2	µg/L	ns	ng	ng	<	-	<	<	<	<	-	<	<
trans-1,3-Dichloropropene	0.2	µg/L	ns	ng	ng	<	-	<	<	<	<	-	<	<
1,3-Dichloropropene	0.2	µg/L	0.5	ng	3.8	-	-	<	<	-	-	-	<	<
Ethylbenzene	0.1	µg/L	2.4	2.4 ³	11000	<	-	<	<	<	<	-	<	<
Ethylene Dibromide	0.2	µg/L	0.2	ng	3.3	-	-	<	<	-	-	-	<	<
Hexane	0.5	µg/L	51	ng	ng	-	-	<	<	-	-	-	<	<
Methyl Ethyl Ketone	5	µg/L	1800	ng	120000	-	-	<	<	-	-	-	<	<
Methyl Isobutyl Ketone	5	µg/L	640	ng	57000	-	-	<	<	-	-	-	<	<
Methyl t-butyl ether	0.2	µg/L	15	15 ³	340	-	-	<	<	-	-	-	<	<
Methylene Chloride	0.5	µg/L	50	50	98	<	-	<	<	<	<	-	<	<
Styrene	0.2	µg/L	5.4	ng	72	<	-	<	<	<	<	-	<	<
1,1,1,2-Tetrachloroethane	0.1	µg/L	1.1	ng	6	<	-	<	<	<	<	-	<	<
1,1,2,2-Tetrachloroethane	0.2	µg/L	1	ng	22	<	-	<	<	<	<	-	<	<
Tetrachloroethylene	0.1	µg/L	1.6	30	110	<	<	<0.4	<	<	<	<	<0.4	<
Toluene	0.2	µg/L	24	24 ³	83	<	-	<	<	<	<	-	<	<
1,1,1-Trichloroethane	0.1	µg/L	200	ng	4200	<	-	<	<	<	<	-	<	<
1,1,2-Trichloroethane	0.2	µg/L	4.7	ng	9400	<	-	<	<	<	<	-	<	<
Trichloroethylene	0.1	µg/L	1.6	5	20	<	<	<	<	<	<	<	<	<
Trichlorofluoromethane	0.2	µg/L	150	ng	ng	<	-	<	<	<	<	-	<	<
1,3,5-Trimethylbenzene	0.5	µg/L	ns	ng	ng	<	-	-	-	<	<	-	-	-
Vinyl chloride	0.4	µg/L	0.5	2	1.1	<	<	-	-	<	<	<	<	-
p+m-Xylene	0.1	µg/L	ns	ng	ng	<	-	<	<	<	<	-	<	<
o-Xylene	0.1	µg/L	ns	ng	ng	<	-	<	<	<	<	-	<	<
Xylene (Total)	0.1	µg/L	300	300 ³	3900	<	-	<	<	<	<	-	<	<

RDL reportable detection limit

< less than RDL

na not applicable

ns no standards

ng no guideline

µg/L micrograms per litre

- not sampled

¹ MOE Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for All Types of Property Use, coarse textured soils (MOE, 2011)

² CCME Community Water: Guidelines for Canadian Drinking Water Quality, Community Water Supplies, Canadian Environmental Quality Guidelines (CCME, 1999, as updated)

³ Aesthetic Objective

⁴ FIGQGs Table 2, Tier 1: Generic Guidelines for residential/parkland use and coarse textured soils (FIGQG, 2010)

Underline Exceeds MOE (2011) Table 2 groundwater standard

Italic Exceeds CCME (1999 as updated) drinking water quality guidelines

BOLD Exceeds FIGQGs (2010) Table 2, Tier 1

TABLE 5.1 HISTORICAL GROUNDWATER ANALYTICAL RESULTS - 2008 to 2011
Volatile Organic Compounds
NCC Property Asset No. 97390, Leitrim Road, Ottawa, Ontario

SLE Sample No.			2011 MOE Standard Table 2 ¹	CCME Community Water ²	2010 FIGQGs Table 2 Tier 1 ⁴	MW08-5				MW09-8			
	RDL	Units											
<i>Laboratory Sample No.</i>	na	na	na	na	na	0835081-02	DJ5424	JT2471	LB0321	DJ5425	GY9187	JT2472	LB0322
<i>Sampling Date</i>	na	na	na	na	na	27-Aug-08	14-Aug-09	7-Jun-11	27-Sep-11	14-Aug-09	27-Aug-10	7-Jun-11	27-Sep-11
<i>Monitoring Well No.</i>	na	na	na	na	na	MW08-5	MW08-5	MW08-5	MW08-5	MW08-8	MW09-8	MW09-8	MW09-8
Acetone	10	µg/L	2700	ng	330	-	-	<	<	-	<	<	<
Benzene	0.1	µg/L	5	5	140	<	-	<	<	-	<	<	<
Bromodichloromethane	0.1	µg/L	16	16	67000	<	-	<	<	-	<	<	<
Bromoform	0.2	µg/L	25	ng	840	<	-	<	<	-	<	<	<
Bromomethane	0.5	µg/L	0.89	ng	2	<	-	<	<	-	<	<	<
Carbon Tetrachloride	0.1	µg/L	0.79	5	0.56	<	-	<	<	-	<	<	<
Chlorobenzene	0.1	µg/L	30	80	1.3	<	-	<	<	-	<	<	<
Chloroethane	1	µg/L	ns	ng	ng	<	-	-	-	-	-	-	-
Chloroform	0.1	µg/L	2.4	ng	1.8	<	-	<	<	-	<	<	<
Chloromethane	3	µg/L	ns	ng	ng	<	-	-	-	-	-	-	-
Dibromochloromethane	0.2	µg/L	25	ng	1100	<	-	<	<	-	<	<	<
1,2-Dibromoethane	1	µg/L	ns	ng	ng	<	-	-	-	-	-	-	-
1,2-Dichlorobenzene	0.2	µg/L	3	200	0.7	<	-	<	<	-	<	<	<
1,3-Dichlorobenzene	0.2	µg/L	59	ng	42	<	-	<	<	-	<	<	<
1,4-Dichlorobenzene	0.2	µg/L	1	5	26	<	-	<	<	-	<	<	<
Dichlorodifluoromethane	0.5	µg/L	590	ng	ng	-	-	<	<	-	<	<	<
1,1-Dichloroethane	0.1	µg/L	5	ng	9000	<	-	<	<	-	<	<	<
1,2-Dichloroethane	0.2	µg/L	1.6	5	10	<	-	<	<	-	<	<	<
1,1-Dichloroethylene	0.1	µg/L	1.6	14	39	<	-	<	<	-	<	<	<
cis-1,2-Dichloroethylene	0.1	µg/L	1.6	ng	12000	<	<	<	<	0.6	0.2	0.5	0.7
trans-1,2-Dichloroethylene	0.1	µg/L	1.6	ng	12000	<	<	<	<	0.2	<	<	0.2
1,2-Dichloropropane	0.1	µg/L	5	ng	9.3	<	-	<	<	-	<	<	<
cis-1,3-Dichloropropene	0.2	µg/L	ns	ng	ng	<	-	<	<	-	<	<	<
trans-1,3-Dichloropropene	0.2	µg/L	ns	ng	ng	<	-	<	<	-	<	<	<
1,3-Dichloropropene	0.2	µg/L	0.5	ng	3.8	-	-	<	<	-	<	<	<
Ethylbenzene	0.1	µg/L	2.4	2.4 ³	11000	<	-	<	<	-	<	<	<
Ethylene Dibromide	0.2	µg/L	0.2	ng	3.3	-	-	<	<	-	<	<	<
Hexane	0.5	µg/L	51	ng	ng	-	-	<	<	-	<	<	<
Methyl Ethyl Ketone	5	µg/L	1800	ng	120000	-	-	<	<	-	<	<	<
Methyl Isobutyl Ketone	5	µg/L	640	ng	57000	-	-	<	<	-	<	<	<
Methyl t-butyl ether	0.2	µg/L	15	15 ³	340	-	-	<	<	-	<	<	<
Methylene Chloride	0.5	µg/L	50	50	98	<	-	<	<	-	<	<	<
Styrene	0.2	µg/L	5.4	ng	72	<	-	<	<	-	<	<	<
1,1,1,2-Tetrachloroethane	0.1	µg/L	1.1	ng	6	<	-	<	<	-	<	<	<
1,1,2,2-Tetrachloroethane	0.2	µg/L	1	ng	22	<	-	<	<	-	<	<	<
Tetrachloroethylene	0.1	µg/L	1.6	30	110	<	<	<0.4	<	<	<	<0.4	<
Toluene	0.2	µg/L	24	24 ³	83	<	-	<	<	-	<	<	<
1,1,1-Trichloroethane	0.1	µg/L	200	ng	4200	<	-	<	<	-	<	<	<
1,1,2-Trichloroethane	0.2	µg/L	4.7	ng	9400	<	-	<	<	-	<	<	<
Trichloroethylene	0.1	µg/L	1.6	5	20	<	1.4	0.5	1.5	34	13	18	25
Trichlorofluoromethane	0.2	µg/L	150	ng	ng	<	-	<	<	-	<	<	<
1,3,5-Trimethylbenzene	0.5	µg/L	ns	ng	ng	<	-	-	-	-	-	-	-
Vinyl chloride	0.4	µg/L	0.5	2	1.1	<	<	-	-	<	-	-	-
p+m-Xylene	0.1	µg/L	ns	ng	ng	<	-	<	<	-	<	<	<
o-Xylene	0.1	µg/L	ns	ng	ng	<	-	<	<	-	<	<	<
Xylene (Total)	0.1	µg/L	300	300 ³	3900	<	-	<	<	-	<	<	<

RDL reportable detection limit

< less than RDL

na not applicable

ns no standards

ng no guideline

µg/L micrograms per litre

- not sampled

¹ MOE Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for All Types of Property Use, coarse textured soils (MOE, 2011)

² CCME Community Water: Guidelines for Canadian Drinking Water Quality, Community Water Supplies, Canadian Environmental Quality Guidelines (CCME, 1999, as updated)

³ Aesthetic Objective

⁴ FIGQGs Table 2, Tier 1: Generic Guidelines for residential/parkland use and coarse textured soils (FIGQG, 2010)

Underline Exceeds MOE (2011) Table 2 groundwater standard

Italic Exceeds CCME (1999 as updated) drinking water quality guidelines

BOLD Exceeds FIGQGs (2010) Table 2, Tier 1

TABLE 5.1 HISTORICAL GROUNDWATER ANALYTICAL RESULTS - 2008 to 2011
Volatile Organic Compounds
NCC Property Asset No. 97390, Leitrim Road, Ottawa, Ontario

SLE Sample No.			2011 MOE Standard Table 2 ¹	CCME Community Water ²	2010 FIGQGs Table 2 Tier 1 ⁴	MW09-9				MW-10-10			
	RDL	Units											
<i>Laboratory Sample No.</i>	na	na	na	na	na	DJ5426	GY9188	JT2473	LB0323	GY9189	HJ9172	JT2474	LB0324
<i>Sampling Date</i>	na	na	na	na	na	14-Aug-09	27-Aug-10	7-Jun-11	27-Sep-11	27-Aug-10	1-Oct-10	7-Jun-11	27-Sep-11
<i>Monitoring Well No.</i>	na	na	na	na	na	MW08-9	MW-09-9	MW09-9	MW09-9	MW-10-10	MW-10-10	MW-10-10	MW-10-10
Acetone	10	µg/L	2700	ng	330	-	<	<	<	<	<	<	<
Benzene	0.1	µg/L	5	5	140	-	<	<	<	<	<	<	<
Bromodichloromethane	0.1	µg/L	16	16	67000	-	<	<	<	<	<	<	<
Bromoform	0.2	µg/L	25	ng	840	-	<	<	<	<	<	<	<
Bromomethane	0.5	µg/L	0.89	ng	2	-	<	<	<	<	<	<	<
Carbon Tetrachloride	0.1	µg/L	0.79	5	0.56	-	<	<	<	<	<	<	<
Chlorobenzene	0.1	µg/L	30	80	1.3	-	<	<	<	<	<	<	<
Chloroethane	1	µg/L	ns	ng	ng	-	-	-	-	-	-	-	-
Chloroform	0.1	µg/L	2.4	ng	1.8	-	<	<	<	<	<	<	<
Chloromethane	3	µg/L	ns	ng	ng	-	-	-	-	-	-	-	-
Dibromochloromethane	0.2	µg/L	25	ng	1100	-	<	<	<	<	<	<	<
1,2-Dibromoethane	1	µg/L	ns	ng	ng	-	-	-	-	-	-	-	-
1,2-Dichlorobenzene	0.2	µg/L	3	200	0.7	-	<	<	<	<	<	<	<
1,3-Dichlorobenzene	0.2	µg/L	59	ng	42	-	<	<	<	<	<	<	<
1,4-Dichlorobenzene	0.2	µg/L	1	5	26	-	<	<	<	<	<	<	<
Dichlorodifluoromethane	0.5	µg/L	590	ng	ng	-	<	<	<	<	<	<	<
1,1-Dichloroethane	0.1	µg/L	5	ng	9000	-	<	<	<	<	<	<	<
1,2-Dichloroethane	0.2	µg/L	1.6	5	10	-	<	<	<	<	<	<	<
1,1-Dichloroethylene	0.1	µg/L	1.6	14	39	-	<	<	<	<	<	<	<
cis-1,2-Dichloroethylene	0.1	µg/L	1.6	ng	12000	<	<	<	<	0.3	0.2	0.3	0.3
trans-1,2-Dichloroethylene	0.1	µg/L	1.6	ng	12000	<	<	<	<	<	<	<	<
1,2-Dichloropropane	0.1	µg/L	5	ng	9.3	-	<	<	<	<	<	<	<
cis-1,3-Dichloropropene	0.2	µg/L	ns	ng	ng	-	<	<	<	<	<	<	<
trans-1,3-Dichloropropene	0.2	µg/L	ns	ng	ng	-	<	<	<	<	<	<	<
1,3-Dichloropropene	0.2	µg/L	0.5	ng	3.8	-	<	<	<	<	<	<	<
Ethylbenzene	0.1	µg/L	2.4	2.4 ³	11000	-	<	<	<	<	<	<	<
Ethylene Dibromide	0.2	µg/L	0.2	ng	3.3	-	<	<	<	<	<	<	<
Hexane	0.5	µg/L	51	ng	ng	-	<	<	<	<	<	<	<
Methyl Ethyl Ketone	5	µg/L	1800	ng	120000	-	<	<	<	<	<	<	<
Methyl Isobutyl Ketone	5	µg/L	640	ng	57000	-	<	<	<	<	<	<	<
Methyl t-butyl ether	0.2	µg/L	15	15 ³	340	-	<	<	<	<	<	<	<
Methylene Chloride	0.5	µg/L	50	50	98	-	<	<	<	<	<	<	<
Styrene	0.2	µg/L	5.4	ng	72	-	<	<	<	<	<	<	<
1,1,1,2-Tetrachloroethane	0.1	µg/L	1.1	ng	6	-	<	<	<	<	<	<	<
1,1,2,2-Tetrachloroethane	0.2	µg/L	1	ng	22	-	<	<	<	<	<	<	<
Tetrachloroethylene	0.1	µg/L	1.6	30	110	<	<	<0.4	<	<	<	<0.4	<
Toluene	0.2	µg/L	24	24 ³	83	-	<	<	<	<	<	<	<
1,1,1-Trichloroethane	0.1	µg/L	200	ng	4200	-	<	<	<	<	<	<	<
1,1,2-Trichloroethane	0.2	µg/L	4.7	ng	9400	-	<	<	<	<	<	<	<
Trichloroethylene	0.1	µg/L	1.6	5	20	0.1	0.2	<	0.2	4.0	4.0	6.4	6.5
Trichlorofluoromethane	0.2	µg/L	150	ng	ng	-	<	<	<	<	<	<	<
1,3,5-Trimethylbenzene	0.5	µg/L	ns	ng	ng	-	-	-	-	-	-	-	-
Vinyl chloride	0.4	µg/L	0.5	2	1.1	<	-	-	-	-	-	-	-
p+m-Xylene	0.1	µg/L	ns	ng	ng	-	<	<	<	0.1	<	<	<
o-Xylene	0.1	µg/L	ns	ng	ng	-	<	<	<	<	<	<	<
Xylene (Total)	0.1	µg/L	300	300 ³	3900	-	<	<	<	0.1	<	<	<

RDL reportable detection limit

< less than RDL

na not applicable

ns no standards

ng no guideline

µg/L micrograms per litre

- not sampled

¹ MOE Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for All Types of Property Use, coarse textured soils (MOE, 2011)

² CCME Community Water: Guidelines for Canadian Drinking Water Quality, Community Water Supplies, Canadian Environmental Quality Guidelines (CCME, 1999, as updated)

³ Aesthetic Objective

⁴ FIGQGs Table 2, Tier 1: Generic Guidelines for residential/parkland use and coarse textured soils (FIGQG, 2010)

Underline Exceeds MOE (2011) Table 2 groundwater standard

Italic Exceeds CCME (1999 as updated) drinking water quality guidelines

BOLD Exceeds FIGQGs (2010) Table 2, Tier 1

TABLE 5.1 HISTORICAL GROUNDWATER ANALYTICAL RESULTS - 2008 to 2011
Volatile Organic Compounds
NCC Property Asset No. 97390, Leitrim Road, Ottawa, Ontario

SLE Sample No.			2011 MOE Standard Table 2 ¹	CCME Community Water ²	2010 FIGQGs Table 2 Tier 1 ⁴	MW-10-11				MW-10-12		
	RDL	Units										
<i>Laboratory Sample No.</i>	na	na	na	na	na	GY9191	HJ9173	JT2475	LB0325	GY9192	JT2476	LB0326
<i>Sampling Date</i>	na	na	na	na	na	27-Aug-10	1-Oct-10	7-Jun-11	27-Sep-11	27-Aug-10	7-Jun-11	27-Sep-11
<i>Monitoring Well No.</i>	na	na	na	na	na	MW-10-11	MW-10-11	MW-10-11	MW-10-11	MW-10-12	MW-10-12	MW-10-12
Acetone	10	µg/L	2700	ng	330	<	<	<	<	<	<	<
Benzene	0.1	µg/L	5	5	140	0.1	0.1	<	<	<	<	<
Bromodichloromethane	0.1	µg/L	16	16	67000	<	<	<	<	<	<	<
Bromoform	0.2	µg/L	25	ng	840	<	<	<	<	<	<	<
Bromomethane	0.5	µg/L	0.89	ng	2	<	<	<	<	<	<	<
Carbon Tetrachloride	0.1	µg/L	0.79	5	0.56	<	<	<	<	<	<	<
Chlorobenzene	0.1	µg/L	30	80	1.3	<	<	<	<	<	<	<
Chloroethane	1	µg/L	ns	ng	ng	-	-	-	-	-	-	-
Chloroform	0.1	µg/L	2.4	ng	1.8	<	<	<	<	<	<	<
Chloromethane	3	µg/L	ns	ng	ng	-	-	-	-	-	-	-
Dibromochloromethane	0.2	µg/L	25	ng	1100	<	<	<	<	<	<	<
1,2-Dibromoethane	1	µg/L	ns	ng	ng	-	-	-	-	-	-	-
1,2-Dichlorobenzene	0.2	µg/L	3	200	0.7	<	<	<	<	<	<	<
1,3-Dichlorobenzene	0.2	µg/L	59	ng	42	<	<	<	<	<	<	<
1,4-Dichlorobenzene	0.2	µg/L	1	5	26	<	<	<	<	<	<	<
Dichlorodifluoromethane	0.5	µg/L	590	ng	ng	<	<	<	<	<	<	<
1,1-Dichloroethane	0.1	µg/L	5	ng	9000	<	<	<	<	<	<	<
1,2-Dichloroethane	0.2	µg/L	1.6	5	10	<	<	<	<	<	<	<
1,1-Dichloroethylene	0.1	µg/L	1.6	14	39	<	<	<	<	<	<	<
cis-1,2-Dichloroethylene	0.1	µg/L	1.6	ng	12000	3.7	3.6	2.8	2.7	<	<	<
trans-1,2-Dichloroethylene	0.1	µg/L	1.6	ng	12000	0.8	0.6	0.7	0.5	<	<	<
1,2-Dichloropropane	0.1	µg/L	5	ng	9.3	<	<	<	<	<	<	<
cis-1,3-Dichloropropene	0.2	µg/L	ns	ng	ng	<	<	<	<	<	<	<
trans-1,3-Dichloropropene	0.2	µg/L	ns	ng	ng	<	<	<	<	<	<	<
1,3-Dichloropropene	0.2	µg/L	0.5	ng	3.8	<	<	<	<	<	<	<
Ethylbenzene	0.1	µg/L	2.4	2.4 ³	11000	<	<	<	<	<	<	<
Ethylene Dibromide	0.2	µg/L	0.2	ng	3.3	<	<	<	<	<	<	<
Hexane	0.5	µg/L	51	ng	ng	<	<	<	<	<	<	<
Methyl Ethyl Ketone	5	µg/L	1800	ng	120000	<	<	<	<	<	<	<
Methyl Isobutyl Ketone	5	µg/L	640	ng	57000	<	<	<	<	<	<	<
Methyl t-butyl ether	0.2	µg/L	15	15 ³	340	<	<	<	<	<	<	<
Methylene Chloride	0.5	µg/L	50	50	98	<	<	<	<	<	<	<
Styrene	0.2	µg/L	5.4	ng	72	<	<	<	<	<	<	<
1,1,1,2-Tetrachloroethane	0.1	µg/L	1.1	ng	6	<	<	<	<	<	<	<
1,1,2,2-Tetrachloroethane	0.2	µg/L	1	ng	22	<	<	<	<	<	<	<
Tetrachloroethylene	0.1	µg/L	1.6	30	110	<	<	<0.4	<	<	<0.4	<
Toluene	0.2	µg/L	24	24 ³	83	0.2	<	<	<	0.2	<	<
1,1,1-Trichloroethane	0.1	µg/L	200	ng	4200	<	<	<	<	<	<	<
1,1,2-Trichloroethane	0.2	µg/L	4.7	ng	9400	<	<	<	<	<	<	<
Trichloroethylene	0.1	µg/L	1.6	5	20	4.9	5.4	8.9	7.2	<	<	<
Trichlorofluoromethane	0.2	µg/L	150	ng	ng	<	<	<	<	<	<	<
1,3,5-Trimethylbenzene	0.5	µg/L	ns	ng	ng	-	-	-	-	-	-	-
Vinyl chloride	0.4	µg/L	0.5	2	1.1	-	-	-	-	-	-	-
p+m-Xylene	0.1	µg/L	ns	ng	ng	0.1	<	<	<	0.1	<	<
o-Xylene	0.1	µg/L	ns	ng	ng	<	<	<	<	<	<	<
Xylene (Total)	0.1	µg/L	300	300 ³	3900	0.1	<	<	<	0.1	<	<

RDL reportable detection limit

< less than RDL

na not applicable

ns no standards

ng no guideline

µg/L micrograms per litre

- not sampled

¹ MOE Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for All Types of Property Use, coarse textured soils (MOE, 2011)

² CCME Community Water: Guidelines for Canadian Drinking Water Quality, Community Water Supplies, Canadian Environmental Quality Guidelines (CCME, 1999, as updated)

³ Aesthetic Objective

⁴ FIGQGs Table 2, Tier 1: Generic Guidelines for residential/parkland use and coarse textured soils (FIGQG, 2010)

Underline Exceeds MOE (2011) Table 2 groundwater standard

Italic Exceeds CCME (1999 as updated) drinking water quality guidelines

BOLD Exceeds FIGQGs (2010) Table 2, Tier 1

TABLE 5.1 HISTORICAL GROUNDWATER ANALYTICAL RESULTS - 2008 to 2011
Volatile Organic Compounds
NCC Property Asset No. 97390, Leitrim Road, Ottawa, Ontario

SLE Sample No.	RDL	Units	2011	CCME	2010	MW-10-13						MW-10-14		
			MOE Standard Table 2 ¹	Community Water ²	FIGQGs Table 2 Tier 1 ⁴	Field Dupl. of MW-10-13						Field Dupl. of MW-10-13		
<i>Laboratory Sample No.</i>	na	na	na	na	na	GY9193	HJ9174	JT2511	JT2512	LB0344	LB0345	GY9194	JT2513	LB0346
<i>Sampling Date</i>	na	na	na	na	na	27-Aug-10	1-Oct-10	7-Jun-11	7-Jun-11	27-Sep-11	27-Sep-11	27-Aug-10	7-Jun-11	27-Sep-11
<i>Monitoring Well No.</i>	na	na	na	na	na	MW-10-13	MW-10-13	MW-10-13	MW-10-13	MW-10-13	MW-99	MW-10-14	MW-10-14	MW-10-14
Acetone	10	µg/L	2700	ng	330	<	<	<	<	<	<	<	<	<
Benzene	0.1	µg/L	5	5	140	0.9	0.7	<	<	0.1	0.1	<	<	<
Bromodichloromethane	0.1	µg/L	16	16	67000	<	<	<	<	<	<	<	<	<
Bromoform	0.2	µg/L	25	ng	840	<	<	<	<	<	<	<	<	<
Bromomethane	0.5	µg/L	0.89	ng	2	<	<	<	<	<	<	<	<	<
Carbon Tetrachloride	0.1	µg/L	0.79	5	0.56	<	<	<	<	<	<	<	<	<
Chlorobenzene	0.1	µg/L	30	80	1.3	<	<	<	<	<	<	<	<	<
Chloroethane	1	µg/L	ns	ng	ng	-	-	-	-	-	-	-	-	-
Chloroform	0.1	µg/L	2.4	ng	1.8	<	<	<	<	<	<	<	<	<
Chloromethane	3	µg/L	ns	ng	ng	-	-	-	-	-	-	-	-	-
Dibromochloromethane	0.2	µg/L	25	ng	1100	<	<	<	<	<	<	<	<	<
1,2-Dibromoethane	1	µg/L	ns	ng	ng	-	-	-	-	-	-	-	-	-
1,2-Dichlorobenzene	0.2	µg/L	3	200	0.7	<	<	<	<	<	<	<	<	<
1,3-Dichlorobenzene	0.2	µg/L	59	ng	42	<	<	<	<	<	<	<	<	<
1,4-Dichlorobenzene	0.2	µg/L	1	5	26	<	<	<	<	<	<	<	<	<
Dichlorodifluoromethane	0.5	µg/L	590	ng	ng	<	<	<	<	<	<	<	<	<
1,1-Dichloroethane	0.1	µg/L	5	ng	9000	0.2	0.2	<	<	<	0.1	<	<	<
1,2-Dichloroethane	0.2	µg/L	1.6	5	10	<	<	<	<	<	<	<	<	<
1,1-Dichloroethylene	0.1	µg/L	1.6	14	39	<	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethylene	0.1	µg/L	1.6	ng	12000	1.7	1.5	0.3	0.2	1.1	1.0	<	<	<
trans-1,2-Dichloroethylene	0.1	µg/L	1.6	ng	12000	0.5	0.3	<	<	0.2	0.2	<	<	<
1,2-Dichloropropane	0.1	µg/L	5	ng	9.3	<	<	<	<	<	<	<	<	<
cis-1,3-Dichloropropene	0.2	µg/L	ns	ng	ng	<	<	<	<	<	<	<	<	<
trans-1,3-Dichloropropene	0.2	µg/L	ns	ng	ng	<	<	<	<	<	<	<	<	<
1,3-Dichloropropene	0.2	µg/L	0.5	ng	3.8	<	<	<	<	<	<	<	<	<
Ethylbenzene	0.1	µg/L	2.4	2.4 ³	11000	<	<	<	<	<	<	<	<	<
Ethylene Dibromide	0.2	µg/L	0.2	ng	3.3	<	<	<	<	<	<	<	<	<
Hexane	0.5	µg/L	51	ng	ng	<	<	<	<	<	<	<	<	<
Methyl Ethyl Ketone	5	µg/L	1800	ng	120000	<	<	<	<	<	<	<	<	<
Methyl Isobutyl Ketone	5	µg/L	640	ng	57000	<	<	<	<	<	<	<	<	<
Methyl t-butyl ether	0.2	µg/L	15	15 ³	340	<	<	<	<	<	<	<	<	<
Methylene Chloride	0.5	µg/L	50	50	98	<	<	<	<	<	<	<	<	<
Styrene	0.2	µg/L	5.4	ng	72	<	<	<	<	<	<	<	<	<
1,1,1,2-Tetrachloroethane	0.1	µg/L	1.1	ng	6	<	<	<	<	<	<	<	<	<
1,1,2,2-Tetrachloroethane	0.2	µg/L	1	ng	22	<	<	<	<	<	<	<	<	<
Tetrachloroethylene	0.1	µg/L	1.6	30	110	<	<	<0.4	<0.4	<	<	<	<0.4	<
Toluene	0.2	µg/L	24	24 ³	83	<	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	0.1	µg/L	200	ng	4200	<	<	<	<	<	<	<	<	<
1,1,2-Trichloroethane	0.2	µg/L	4.7	ng	9400	<	<	<	<	<	<	<	<	<
Trichloroethylene	0.1	µg/L	1.6	5	20	1.7	1.4	2.4	1.9	6.1	5.8	<	<	<
Trichlorofluoromethane	0.2	µg/L	150	ng	ng	<	<	<	<	<	<	<	<	<
1,3,5-Trimethylbenzene	0.5	µg/L	ns	ng	ng	-	-	-	-	-	-	-	-	-
Vinyl chloride	0.4	µg/L	0.5	2	1.1	-	-	-	-	-	-	-	-	-
p+m-Xylene	0.1	µg/L	ns	ng	ng	<	<	<	<	<	<	<	<	<
o-Xylene	0.1	µg/L	ns	ng	ng	<	<	<	<	<	<	<	<	<
Xylene (Total)	0.1	µg/L	300	300 ³	3900	<	<	<	<	<	<	<	<	<

RDL reportable detection limit

< less than RDL

na not applicable

ns no standards

ng no guideline

µg/L micrograms per litre

- not sampled

¹ MOE Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for All Types of Property Use, coarse textured soils (MOE, 2011)

² CCME Community Water: Guidelines for Canadian Drinking Water Quality, Community Water Supplies, Canadian Environmental Quality Guidelines (CCME, 1999, as updated)

³ Aesthetic Objective

⁴ FIGQGs Table 2, Tier 1: Generic Guidelines for residential/parkland use and coarse textured soils (FIGQG, 2010)

Underline Exceeds MOE (2011) Table 2 groundwater standard

Italic Exceeds CCME (1999 as updated) drinking water quality guidelines

BOLD Exceeds FIGQGs (2010) Table 2, Tier 1

TABLE 5.1 HISTORICAL GROUNDWATER ANALYTICAL RESULTS - 2008 to 2011
Volatile Organic Compounds
NCC Property Asset No. 97390, Leitrim Road, Ottawa, Ontario

SLE Sample No.	RDL	Units	2011	CCME	2010	MW-10-15					MW-10-16		
			MOE Standard Table 2 ¹	Community Water ²	FIGQGs Table 2 Tier 1 ⁴	Field Dupl. of MW-10-15							
<i>Laboratory Sample No.</i>	na	na	na	na	na	GY9190	GY9195	HJ9175	JT2514	LB0347	HJ9176	JT2515	LB0348
<i>Sampling Date</i>	na	na	na	na	na	27-Aug-10	27-Aug-10	1-Oct-10	7-Jun-11	27-Sep-11	1-Oct-10	7-Jun-11	27-Sep-11
<i>Monitoring Well No.</i>	na	na	na	na	na	MW-10-15	MW-10-15	MW-10-15	MW-10-15	MW-10-15	MW-10-16	MW-10-16	MW-10-16
Acetone	10	µg/L	2700	ng	330	<	<	<	<	<	<	<	<
Benzene	0.1	µg/L	5	5	140	<	<	<	<	<	<	<	<
Bromodichloromethane	0.1	µg/L	16	16	67000	<	<	<	<	<	<	<	<
Bromoform	0.2	µg/L	25	ng	840	<	<	<	<	<	<	<	<
Bromomethane	0.5	µg/L	0.89	ng	2	<	<	<	<	<	<	<	<
Carbon Tetrachloride	0.1	µg/L	0.79	5	0.56	<	<	<	<	<	<	<	<
Chlorobenzene	0.1	µg/L	30	80	1.3	<	<	<	<	<	<	<	<
Chloroethane	1	µg/L	ns	ng	ng	-	-	-	-	-	-	-	-
Chloroform	0.1	µg/L	2.4	ng	1.8	<	<	<	<	<	<	<	<
Chloromethane	3	µg/L	ns	ng	ng	-	-	-	-	-	-	-	-
Dibromochloromethane	0.2	µg/L	25	ng	1100	<	<	<	<	<	<	<	<
1,2-Dibromoethane	1	µg/L	ns	ng	ng	-	-	-	-	-	-	-	-
1,2-Dichlorobenzene	0.2	µg/L	3	200	0.7	<	<	<	<	<	<	<	<
1,3-Dichlorobenzene	0.2	µg/L	59	ng	42	<	<	<	<	<	<	<	<
1,4-Dichlorobenzene	0.2	µg/L	1	5	26	<	<	<	<	<	<	<	<
Dichlorodifluoromethane	0.5	µg/L	590	ng	ng	<	<	<	<	<	<	<	<
1,1-Dichloroethane	0.1	µg/L	5	ng	9000	<	<	<	<	<	0.3	0.2	0.3
1,2-Dichloroethane	0.2	µg/L	1.6	5	10	<	<	<	<	<	<	<	<
1,1-Dichloroethylene	0.1	µg/L	1.6	14	39	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethylene	0.1	µg/L	1.6	ng	12000	0.3	0.3	0.3	0.1	0.7	0.1	<	0.1
trans-1,2-Dichloroethylene	0.1	µg/L	1.6	ng	12000	<	<	<	<	<	<	<	<
1,2-Dichloropropane	0.1	µg/L	5	ng	9.3	<	<	<	<	<	<	<	<
cis-1,3-Dichloropropene	0.2	µg/L	ns	ng	ng	<	<	<	<	<	<	<	<
trans-1,3-Dichloropropene	0.2	µg/L	ns	ng	ng	<	<	<	<	<	<	<	<
1,3-Dichloropropene	0.2	µg/L	0.5	ng	3.8	<	<	<	<	<	<	<	<
Ethylbenzene	0.1	µg/L	2.4	2.4 ³	11000	<	<	<	<	<	<	<	<
Ethylene Dibromide	0.2	µg/L	0.2	ng	3.3	<	<	<	<	<	<	<	<
Hexane	0.5	µg/L	51	ng	ng	<	<	<	<	<	<	<	<
Methyl Ethyl Ketone	5	µg/L	1800	ng	120000	<	<	<	<	<	<	<	<
Methyl Isobutyl Ketone	5	µg/L	640	ng	57000	<	<	<	<	<	<	<	<
Methyl t-butyl ether	0.2	µg/L	15	15 ³	340	<	<	<	<	<	<	<	<
Methylene Chloride	0.5	µg/L	50	50	98	<	<	<	<	<	<	<	<
Styrene	0.2	µg/L	5.4	ng	72	<	<	<	<	<	<	<	<
1,1,1,2-Tetrachloroethane	0.1	µg/L	1.1	ng	6	<	<	<	<	<	<	<	<
1,1,2,2-Tetrachloroethane	0.2	µg/L	1	ng	22	<	<	<	<	<	<	<	<
Tetrachloroethylene	0.1	µg/L	1.6	30	110	<	<	<	<0.4	<	<	<0.4	<
Toluene	0.2	µg/L	24	24 ³	83	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	0.1	µg/L	200	ng	4200	<	<	<	<	<	<	<	<
1,1,2-Trichloroethane	0.2	µg/L	4.7	ng	9400	<	<	<	<	<	<	<	<
Trichloroethylene	0.1	µg/L	1.6	5	20	2.0	2.1	2.1	1.3	4.9	<	<	<
Trichlorofluoromethane	0.2	µg/L	150	ng	ng	<	<	<	<	<	<	<	<
1,3,5-Trimethylbenzene	0.5	µg/L	ns	ng	ng	-	-	-	-	-	-	-	-
Vinyl chloride	0.4	µg/L	0.5	2	1.1	-	-	-	-	-	-	-	-
p+m-Xylene	0.1	µg/L	ns	ng	ng	<	<	<	<	<	<	<	<
o-Xylene	0.1	µg/L	ns	ng	ng	<	<	<	<	<	<	<	<
Xylene (Total)	0.1	µg/L	300	300 ³	3900	<	<	<	<	<	<	<	<

RDL reportable detection limit

< less than RDL

na not applicable

ns no standards

ng no guideline

µg/L micrograms per litre

- not sampled

¹ MOE Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for All Types of Property Use, coarse textured soils (MOE, 2011)

² CCME Community Water: Guidelines for Canadian Drinking Water Quality, Community Water Supplies, Canadian Environmental Quality Guidelines (CCME, 1999, as updated)

³ Aesthetic Objective

⁴ FIGQGs Table 2, Tier 1: Generic Guidelines for residential/parkland use and coarse textured soils (FIGQG, 2010)

Underline Exceeds MOE (2011) Table 2 groundwater standard

Italic Exceeds CCME (1999 as updated) drinking water quality guidelines

BOLD Exceeds FIGQGs (2010) Table 2, Tier 1

TABLE 5.1 HISTORICAL GROUNDWATER ANALYTICAL RESULTS - 2008 to 2011
Volatile Organic Compounds
NCC Property Asset No. 97390, Leitrim Road, Ottawa, Ontario

SLE Sample No.	RDL	Units	2011 MOE Standard Table 2 ¹	CCME Community Water ²	2010 FIGQGs Table 2 Tier 1 ⁴	MW-10-17 Field Dupl. of MW-10-17					MW-10-18 Field Dupl. of MW-10-18			
Laboratory Sample No.	na	na	na	na	na	HJ9177	JT2516	JT2517	LB0349	LB0350	HJ9178	HJ9179	JT2518	LB0351
Sampling Date	na	na	na	na	na	1-Oct-10	7-Jun-11	7-Jun-11	27-Sep-11	27-Sep-11	1-Oct-10	1-Oct-10	7-Jun-11	27-Sep-11
Monitoring Well No.	na	na	na	na	na	MW-10-17	MW-10-17	MW-10-17	MW-10-17	MW-98	MW-10-18	MW-10-18	MW-10-18	MW-10-18
Acetone	10	µg/L	2700	ng	330	<	<	<	<	<	<	<	<	<
Benzene	0.1	µg/L	5	5	140	1.5	1.5	1.5	1.5	1.5	<	<	<	<
Bromodichloromethane	0.1	µg/L	16	16	67000	<	<	<	<	<	<	<	<	<
Bromoform	0.2	µg/L	25	ng	840	<	<	<	<	<	<	<	<	<
Bromomethane	0.5	µg/L	0.89	ng	2	<	<	<	<	<	<	<	<	<
Carbon Tetrachloride	0.1	µg/L	0.79	5	0.56	<	<	<	<	<	<	<	<	<
Chlorobenzene	0.1	µg/L	30	80	1.3	<	<	<	<	<	<	<	<	<
Chloroethane	1	µg/L	ns	ng	ng	-	-	-	-	-	-	-	-	-
Chloroform	0.1	µg/L	2.4	ng	1.8	<	<	<	<	<	<	<	<	<
Chloromethane	3	µg/L	ns	ng	ng	-	-	-	-	-	-	-	-	-
Dibromochloromethane	0.2	µg/L	25	ng	1100	<	<	<	<	<	<	<	<	<
1,2-Dibromoethane	1	µg/L	ns	ng	ng	-	-	-	-	-	-	-	-	-
1,2-Dichlorobenzene	0.2	µg/L	3	200	0.7	<	<	<	<	<	<	<	<	<
1,3-Dichlorobenzene	0.2	µg/L	59	ng	42	<	<	<	<	<	<	<	<	<
1,4-Dichlorobenzene	0.2	µg/L	1	5	26	<	<	<	<	<	<	<	<	<
Dichlorodifluoromethane	0.5	µg/L	590	ng	ng	<	<	<	<	<	<	<	<	<
1,1-Dichloroethane	0.1	µg/L	5	ng	9000	0.3	0.2	0.2	0.3	0.3	<	<	<	<
1,2-Dichloroethane	0.2	µg/L	1.6	5	10	0.7	0.5	0.5	0.6	0.6	<	<	<	<
1,1-Dichloroethylene	0.1	µg/L	1.6	14	39	0.1	0.1	0.1	0.2	0.2	<	<	<	<
cis-1,2-Dichloroethylene	0.1	µg/L	1.6	ng	12000	5.2	5.0	5.0	6.0	6.2	<	<	<	<
trans-1,2-Dichloroethylene	0.1	µg/L	1.6	ng	12000	0.9	1.1	1.1	1.1	1.2	<	<	<	<
1,2-Dichloropropane	0.1	µg/L	5	ng	9.3	<	<	<	<	<	<	<	<	<
cis-1,3-Dichloropropene	0.2	µg/L	ns	ng	ng	<	<	<	<	<	<	<	<	<
trans-1,3-Dichloropropene	0.2	µg/L	ns	ng	ng	<	<	<	<	<	<	<	<	<
1,3-Dichloropropene	0.2	µg/L	0.5	ng	3.8	<	<	<	<	<	<	<	<	<
Ethylbenzene	0.1	µg/L	2.4	2.4 ³	11000	0.4	<	<	<	<	<	0.4	<	<
Ethylene Dibromide	0.2	µg/L	0.2	ng	3.3	<	<	<	<	<	<	<	<	<
Hexane	0.5	µg/L	51	ng	ng	<	<	<	<	<	<	<	<	<
Methyl Ethyl Ketone	5	µg/L	1800	ng	120000	<	<	<	<	<	<	<	<	<
Methyl Isobutyl Ketone	5	µg/L	640	ng	57000	<	<	<	<	<	<	<	<	<
Methyl t-butyl ether	0.2	µg/L	15	15 ³	340	<	<	<	<	<	<	<	<	<
Methylene Chloride	0.5	µg/L	50	50	98	<	<	<	<	<	<	<	<	<
Styrene	0.2	µg/L	5.4	ng	72	<	<	<	<	<	<	<	<	<
1,1,1,2-Tetrachloroethane	0.1	µg/L	1.1	ng	6	<	<	<	<	<	<	<	<	<
1,1,2,2-Tetrachloroethane	0.2	µg/L	1	ng	22	<	<	<	<	<	<	<	<	<
Tetrachloroethylene	0.1	µg/L	1.6	30	110	<	<0.4	<0.4	<	<	<	<	<0.4	<
Toluene	0.2	µg/L	24	24 ³	83	1.3	<	<	<	<	<	1.7	<	<
1,1,1-Trichloroethane	0.1	µg/L	200	ng	4200	<	<	<	<	<	<	<	<	<
1,1,2-Trichloroethane	0.2	µg/L	4.7	ng	9400	<	<	<	<	<	<	<	<	<
Trichloroethylene	0.1	µg/L	1.6	5	20	5.5	10	10	9.2	9.9	<	<	<	<
Trichlorofluoromethane	0.2	µg/L	150	ng	ng	<	<	<	<	<	<	<	<	<
1,3,5-Trimethylbenzene	0.5	µg/L	ns	ng	ng	-	-	-	-	-	-	-	-	-
Vinyl chloride	0.4	µg/L	0.5	2	1.1	-	-	-	-	-	-	-	-	-
p+m-Xylene	0.1	µg/L	ns	ng	ng	1.5	<	<	0.3	0.3	0.2	1.7	<	0.5
o-Xylene	0.1	µg/L	ns	ng	ng	0.7	<	<	0.2	0.2	<	0.8	<	0.2
Xylene (Total)	0.1	µg/L	300	300 ³	3900	2.2	<	<	0.5	0.5	0.2	2.6	<	0.7

RDL reportable detection limit

< less than RDL

na not applicable

ns no standards

ng no guideline

µg/L micrograms per litre

- not sampled

¹ MOE Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for All Types of Property Use, coarse textured soils (MOE, 2011)

² CCME Community Water: Guidelines for Canadian Drinking Water Quality, Community Water Supplies, Canadian Environmental Quality Guidelines (CCME, 1999, as updated)

³ Aesthetic Objective

⁴ FIGQGs Table 2, Tier 1: Generic Guidelines for residential/parkland use and coarse textured soils (FIGQG, 2010)

Underline Exceeds MOE (2011) Table 2 groundwater standard

Italic Exceeds CCME (1999 as updated) drinking water quality guidelines

BOLD Exceeds FIGQGs (2010) Table 2, Tier 1

TABLE 5.1 HISTORICAL GROUNDWATER ANALYTICAL RESULTS - 2008 to 2011
Volatile Organic Compounds
NCC Property Asset No. 97390, Leitrim Road, Ottawa, Ontario

SLE Sample No.			2011 MOE Standard Table 2 ¹	CCME Community Water ²	2010 FIGQGs Table 2 Tier 1 ⁴	MW-10-19			MW-10-20			MW-10-21		
	RDL	Units												
Laboratory Sample No.	na	na	na	na	na	<i>HJ9180</i>	<i>JT2519</i>	<i>LB0352</i>	<i>HJ9181</i>	<i>JT2520</i>	<i>LB0353</i>	<i>HJ9182</i>	<i>JT2568</i>	<i>LB0360</i>
Sampling Date	na	na	na	na	na	<i>1-Oct-10</i>	<i>7-Jun-11</i>	<i>27-Sep-11</i>	<i>1-Oct-10</i>	<i>7-Jun-11</i>	<i>27-Sep-11</i>	<i>1-Oct-10</i>	<i>7-Jun-11</i>	<i>27-Sep-11</i>
Monitoring Well No.	na	na	na	na	na	<i>MW-10-19</i>	<i>MW-10-19</i>	<i>MW-10-19</i>	<i>MW-10-20</i>	<i>MW-10-20</i>	<i>MW-10-20</i>	<i>MW-10-21</i>	<i>MW-10-21</i>	<i>MW-10-21</i>
Acetone	10	µg/L	2700	ng	330	<	<	<	<	<	<	<	<	<
Benzene	0.1	µg/L	5	5	140	<	<	<	0.2	<	<	<	<	<
Bromodichloromethane	0.1	µg/L	16	16	67000	<	<	<	<	<	<	<	<	<
Bromoform	0.2	µg/L	25	ng	840	<	<	<	<	<	<	<	<	<
Bromomethane	0.5	µg/L	0.89	ng	2	<	<	<	<	<	<	<	<	<
Carbon Tetrachloride	0.1	µg/L	0.79	5	0.56	<	<	<	<	<	<	<	<	<
Chlorobenzene	0.1	µg/L	30	80	1.3	<	<	<	<	<	<	<	<	<
Chloroethane	1	µg/L	ns	ng	ng	-	-	-	-	-	-	-	-	-
Chloroform	0.1	µg/L	2.4	ng	1.8	<	<	<	<	<	<	<	<	<
Chloromethane	3	µg/L	ns	ng	ng	-	-	-	-	-	-	-	-	-
Dibromochloromethane	0.2	µg/L	25	ng	1100	<	<	<	<	<	<	<	<	<
1,2-Dibromoethane	1	µg/L	ns	ng	ng	-	-	-	-	-	-	-	-	-
1,2-Dichlorobenzene	0.2	µg/L	3	200	0.7	<	<	<	<	<	<	<	<	<
1,3-Dichlorobenzene	0.2	µg/L	59	ng	42	<	<	<	<	<	<	<	<	<
1,4-Dichlorobenzene	0.2	µg/L	1	5	26	<	<	<	<	<	<	<	<	<
Dichlorodifluoromethane	0.5	µg/L	590	ng	ng	<	<	<	<	<	<	<	<	<
1,1-Dichloroethane	0.1	µg/L	5	ng	9000	<	<	<	<	<	<	<	<	<
1,2-Dichloroethane	0.2	µg/L	1.6	5	10	<	<	<	<	<	<	<	<	<
1,1-Dichloroethylene	0.1	µg/L	1.6	14	39	<	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethylene	0.1	µg/L	1.6	ng	12000	<	<	<	0.3	<	0.3	<	<	<
trans-1,2-Dichloroethylene	0.1	µg/L	1.6	ng	12000	<	<	<	<	<	<	<	<	<
1,2-Dichloropropane	0.1	µg/L	5	ng	9.3	<	<	<	<	<	<	<	<	<
cis-1,3-Dichloropropene	0.2	µg/L	ns	ng	ng	<	<	<	<	<	<	<	<	<
trans-1,3-Dichloropropene	0.2	µg/L	ns	ng	ng	<	<	<	<	<	<	<	<	<
1,3-Dichloropropene	0.2	µg/L	0.5	ng	3.8	<	<	<	<	<	<	<	<	<
Ethylbenzene	0.1	µg/L	2.4	2.4 ³	11000	<	<	<	0.2	<	<	<	<	<
Ethylene Dibromide	0.2	µg/L	0.2	ng	3.3	<	<	<	<	<	<	<	<	<
Hexane	0.5	µg/L	51	ng	ng	<	<	<	<	<	<	<	<	<
Methyl Ethyl Ketone	5	µg/L	1800	ng	120000	<	<	<	<	<	<	<	<	<
Methyl Isobutyl Ketone	5	µg/L	640	ng	57000	<	<	<	<	<	<	<	<	<
Methyl t-butyl ether	0.2	µg/L	15	15 ³	340	<	<	<	<	<	<	<	<	<
Methylene Chloride	0.5	µg/L	50	50	98	<	<	<	<	<	<	<	<	<
Styrene	0.2	µg/L	5.4	ng	72	<	<	<	<	<	<	<	<	<
1,1,1,2-Tetrachloroethane	0.1	µg/L	1.1	ng	6	<	<	<	<	<	<	<	<	<
1,1,2,2-Tetrachloroethane	0.2	µg/L	1	ng	22	<	<	<	<	<	<	<	<	<
Tetrachloroethylene	0.1	µg/L	1.6	30	110	<	<0.4	<	<	<0.4	<	<	<	<
Toluene	0.2	µg/L	24	24 ³	83	<	<	<	0.7	<	<	0.2	<	0.2
1,1,1-Trichloroethane	0.1	µg/L	200	ng	4200	<	<	<	<	<	<	<	<	<
1,1,2-Trichloroethane	0.2	µg/L	4.7	ng	9400	<	<	<	<	<	<	<	<	<
Trichloroethylene	0.1	µg/L	1.6	5	20	<	<	<	0.1	<	0.2	<	<	<
Trichlorofluoromethane	0.2	µg/L	150	ng	ng	<	<	<	<	<	<	<	<	<
1,3,5-Trimethylbenzene	0.5	µg/L	ns	ng	ng	-	-	-	-	-	-	-	-	-
Vinyl chloride	0.4	µg/L	0.5	2	1.1	-	-	-	-	-	-	-	-	-
p+m-Xylene	0.1	µg/L	ns	ng	ng	0.2	<	0.2	0.8	<	0.4	0.3	<	0.5
o-Xylene	0.1	µg/L	ns	ng	ng	0.1	<	<	0.4	<	0.2	0.1	<	0.3
Xylene (Total)	0.1	µg/L	300	300 ³	3900	0.3	<	0.2	1.2	<	0.6	0.5	<	0.8

RDL reportable detection limit

< less than RDL

na not applicable

ns no standards

ng no guideline

µg/L micrograms per litre

- not sampled

¹ MOE Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for All Types of Property Use, coarse textured soils (MOE, 2011)

² CCME Community Water: Guidelines for Canadian Drinking Water Quality, Community Water Supplies, Canadian Environmental Quality Guidelines (CCME, 1999, as updated)

³ Aesthetic Objective

⁴ FIGQGs Table 2, Tier 1: Generic Guidelines for residential/parkland use and coarse textured soils (FIGQG, 2010)

Underline Exceeds MOE (2011) Table 2 groundwater standard

Italic Exceeds CCME (1999 as updated) drinking water quality guidelines

BOLD Exceeds FIGQGs (2010) Table 2, Tier 1

TABLE 5.1 HISTORICAL GROUNDWATER ANALYTICAL RESULTS - 2008 to 2011
Volatile Organic Compounds
NCC Property Asset No. 97390, Leitrim Road, Ottawa, Ontario

SLE Sample No.			2011 MOE Standard Table 2 ¹	CCME Community Water ²	2010 FIGQGs Table 2 Tier 1 ⁴	MW-10-22			MW-10-23			MW-10-24		
	RDL	Units												
Laboratory Sample No.	na	na	na	na	na	<i>HJ9183</i>	<i>JT2569</i>	<i>LB0361</i>	<i>HJ9184</i>	<i>JT2570</i>	<i>LB0362</i>	<i>HJ9185</i>	<i>JT2571</i>	<i>LB0363</i>
Sampling Date	na	na	na	na	na	<i>1-Oct-10</i>	<i>7-Jun-11</i>	<i>27-Sep-11</i>	<i>1-Oct-10</i>	<i>7-Jun-11</i>	<i>27-Sep-11</i>	<i>1-Oct-10</i>	<i>7-Jun-11</i>	<i>27-Sep-11</i>
Monitoring Well No.	na	na	na	na	na	<i>MW-10-22</i>	<i>MW-10-22</i>	<i>MW-10-22</i>	<i>MW-10-23</i>	<i>MW-10-23</i>	<i>MW-10-23</i>	<i>MW-10-24</i>	<i>MW-10-24</i>	<i>MW-10-24</i>
Acetone	10	µg/L	2700	ng	330	<	<	<	<	<	<	<	<	<
Benzene	0.1	µg/L	5	5	140	<	<	<	<	<	<	<	<	<
Bromodichloromethane	0.1	µg/L	16	16	67000	<	<	<	<	<	<	<	<	<
Bromoform	0.2	µg/L	25	ng	840	<	<	<	<	<	<	<	<	<
Bromomethane	0.5	µg/L	0.89	ng	2	<	<	<	<	<	<	<	<	<
Carbon Tetrachloride	0.1	µg/L	0.79	5	0.56	<	<	<	<	<	<	<	<	<
Chlorobenzene	0.1	µg/L	30	80	1.3	<	<	<	<	<	<	<	<	<
Chloroethane	1	µg/L	ns	ng	ng	-	-	-	-	-	-	-	-	-
Chloroform	0.1	µg/L	2.4	ng	1.8	<	<	<	<	<	<	<	<	<
Chloromethane	3	µg/L	ns	ng	ng	-	-	-	-	-	-	-	-	-
Dibromochloromethane	0.2	µg/L	25	ng	1100	<	<	<	<	<	<	<	<	<
1,2-Dibromoethane	1	µg/L	ns	ng	ng	-	-	-	-	-	-	-	-	-
1,2-Dichlorobenzene	0.2	µg/L	3	200	0.7	<	<	<	<	<	<	<	<	<
1,3-Dichlorobenzene	0.2	µg/L	59	ng	42	<	<	<	<	<	<	<	<	<
1,4-Dichlorobenzene	0.2	µg/L	1	5	26	<	<	<	<	<	<	<	<	<
Dichlorodifluoromethane	0.5	µg/L	590	ng	ng	<	<	<	<	<	<	<	<	<
1,1-Dichloroethane	0.1	µg/L	5	ng	9000	<	<	<	<	<	<	0.2	<	0.2
1,2-Dichloroethane	0.2	µg/L	1.6	5	10	<	<	<	<	<	<	<	<	<
1,1-Dichloroethylene	0.1	µg/L	1.6	14	39	<	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethylene	0.1	µg/L	1.6	ng	12000	<	<	<	<	<	<	0.1	<	<
trans-1,2-Dichloroethylene	0.1	µg/L	1.6	ng	12000	<	<	<	<	<	<	<	<	<
1,2-Dichloropropane	0.1	µg/L	5	ng	9.3	<	<	<	<	<	<	<	<	<
cis-1,3-Dichloropropene	0.2	µg/L	ns	ng	ng	<	<	<	<	<	<	<	<	<
trans-1,3-Dichloropropene	0.2	µg/L	ns	ng	ng	<	<	<	<	<	<	<	<	<
1,3-Dichloropropene	0.2	µg/L	0.5	ng	3.8	<	<	<	<	<	<	<	<	<
Ethylbenzene	0.1	µg/L	2.4	2.4 ³	11000	0.1	0.2	<	<	<	<	<	<	<
Ethylene Dibromide	0.2	µg/L	0.2	ng	3.3	<	<	<	<	<	<	<	<	<
Hexane	0.5	µg/L	51	ng	ng	<	<	<	<	<	<	<	<	<
Methyl Ethyl Ketone	5	µg/L	1800	ng	120000	<	<	<	<	<	<	<	<	<
Methyl Isobutyl Ketone	5	µg/L	640	ng	57000	<	<	<	<	<	<	<	<	<
Methyl t-butyl ether	0.2	µg/L	15	15 ³	340	<	<	<	<	<	<	<	<	<
Methylene Chloride	0.5	µg/L	50	50	98	<	<	<	<	<	<	<	<	<
Styrene	0.2	µg/L	5.4	ng	72	<	<	<	<	<	<	<	<	<
1,1,1,2-Tetrachloroethane	0.1	µg/L	1.1	ng	6	<	<	<	<	<	<	<	<	<
1,1,2,2-Tetrachloroethane	0.2	µg/L	1	ng	22	<	<	<	<	<	<	<	<	<
Tetrachloroethylene	0.1	µg/L	1.6	30	110	<	<	<	<	<	<	<	<	<
Toluene	0.2	µg/L	24	24 ³	83	0.4	<	<	<	<	0.2	<	<	<
1,1,1-Trichloroethane	0.1	µg/L	200	ng	4200	<	<	<	<	<	<	<	<	<
1,1,2-Trichloroethane	0.2	µg/L	4.7	ng	9400	<	<	<	<	<	<	<	<	<
Trichloroethylene	0.1	µg/L	1.6	5	20	<	<	<	<	<	<	<	<	<
Trichlorofluoromethane	0.2	µg/L	150	ng	ng	<	<	<	<	<	<	<	<	<
1,3,5-Trimethylbenzene	0.5	µg/L	ns	ng	ng	-	-	-	-	-	-	-	-	-
Vinyl chloride	0.4	µg/L	0.5	2	1.1	-	-	-	-	-	-	-	-	-
p+m-Xylene	0.1	µg/L	ns	ng	ng	0.5	0.7	0.5	0.3	0.2	0.6	<	<	<
o-Xylene	0.1	µg/L	ns	ng	ng	0.2	0.4	0.2	0.1	0.1	0.3	<	<	<
Xylene (Total)	0.1	µg/L	300	300 ³	3900	0.7	1.0	0.7	0.4	0.3	0.9	<	<	<

RDL reportable detection limit

< less than RDL

na not applicable

ns no standards

ng no guideline

µg/L micrograms per litre

- not sampled

¹ MOE Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for All Types of Property Use, coarse textured soils (MOE, 2011)

² CCME Community Water: Guidelines for Canadian Drinking Water Quality, Community Water Supplies, Canadian Environmental Quality Guidelines (CCME, 1999, as updated)

³ Aesthetic Objective

⁴ FIGQGs Table 2, Tier 1: Generic Guidelines for residential/parkland use and coarse textured soils (FIGQG, 2010)

Underline Exceeds MOE (2011) Table 2 groundwater standard

Italic Exceeds CCME (1999 as updated) drinking water quality guidelines

BOLD Exceeds FIGQGs (2010) Table 2, Tier 1

TABLE 5.1 HISTORICAL GROUNDWATER ANALYTICAL RESULTS - 2008 to 2011
Volatile Organic Compounds
NCC Property Asset No. 97390, Leitrim Road, Ottawa, Ontario

SLE Sample No.			2011 MOE Standard Table 2 ¹	CCME Community Water ²	2010 FIGQGs Table 2 Tier 1 ⁴	MW-10-25		
	RDL	Units						
<i>Laboratory Sample No.</i>	na	na	na	na	na	<i>HJ9186</i>	<i>JT2572</i>	<i>LB0364</i>
<i>Sampling Date</i>	na	na	na	na	na	<i>1-Oct-10</i>	<i>7-Jun-11</i>	<i>27-Sep-11</i>
<i>Monitoring Well No.</i>	na	na	na	na	na	<i>MW-10-25</i>	<i>MW-10-25</i>	<i>MW-10-25</i>
Acetone	10	µg/L	2700	ng	330	<	<	<
Benzene	0.1	µg/L	5	5	140	0.1	<	<
Bromodichloromethane	0.1	µg/L	16	16	67000	<	<	<
Bromoform	0.2	µg/L	25	ng	840	<	<	<
Bromomethane	0.5	µg/L	0.89	ng	2	<	<	<
Carbon Tetrachloride	0.1	µg/L	0.79	5	0.56	<	<	<
Chlorobenzene	0.1	µg/L	30	80	1.3	<	<	<
Chloroethane	1	µg/L	ns	ng	ng	-	-	-
Chloroform	0.1	µg/L	2.4	ng	1.8	<	<	<
Chloromethane	3	µg/L	ns	ng	ng	-	-	-
Dibromochloromethane	0.2	µg/L	25	ng	1100	<	<	<
1,2-Dibromoethane	1	µg/L	ns	ng	ng	-	-	-
1,2-Dichlorobenzene	0.2	µg/L	3	200	0.7	<	<	<
1,3-Dichlorobenzene	0.2	µg/L	59	ng	42	<	<	<
1,4-Dichlorobenzene	0.2	µg/L	1	5	26	<	<	<
Dichlorodifluoromethane	0.5	µg/L	590	ng	ng	<	<	<
1,1-Dichloroethane	0.1	µg/L	5	ng	9000	<	<	<
1,2-Dichloroethane	0.2	µg/L	1.6	5	10	<	<	<
1,1-Dichloroethylene	0.1	µg/L	1.6	14	39	<	<	<
cis-1,2-Dichloroethylene	0.1	µg/L	1.6	ng	12000	0.3	<	0.1
trans-1,2-Dichloroethylene	0.1	µg/L	1.6	ng	12000	<	<	<
1,2-Dichloropropane	0.1	µg/L	5	ng	9.3	<	<	<
cis-1,3-Dichloropropene	0.2	µg/L	ns	ng	ng	<	<	<
trans-1,3-Dichloropropene	0.2	µg/L	ns	ng	ng	<	<	<
1,3-Dichloropropene	0.2	µg/L	0.5	ng	3.8	<	<	<
Ethylbenzene	0.1	µg/L	2.4	2.4 ³	11000	0.1	<	<
Ethylene Dibromide	0.2	µg/L	0.2	ng	3.3	<	<	<
Hexane	0.5	µg/L	51	ng	ng	<	<	<
Methyl Ethyl Ketone	5	µg/L	1800	ng	120000	<	<	<
Methyl Isobutyl Ketone	5	µg/L	640	ng	57000	<	<	<
Methyl t-butyl ether	0.2	µg/L	15	15 ³	340	<	<	<
Methylene Chloride	0.5	µg/L	50	50	98	<	<	<
Styrene	0.2	µg/L	5.4	ng	72	<	<	<
1,1,1,2-Tetrachloroethane	0.1	µg/L	1.1	ng	6	<	<	<
1,1,2,2-Tetrachloroethane	0.2	µg/L	1	ng	22	<	<	<
Tetrachloroethylene	0.1	µg/L	1.6	30	110	<	<	<
Toluene	0.2	µg/L	24	24 ³	83	0.4	<	<
1,1,1-Trichloroethane	0.1	µg/L	200	ng	4200	<	<	<
1,1,2-Trichloroethane	0.2	µg/L	4.7	ng	9400	<	<	<
Trichloroethylene	0.1	µg/L	1.6	5	20	<	<	<
Trichlorofluoromethane	0.2	µg/L	150	ng	ng	<	<	<
1,3,5-Trimethylbenzene	0.5	µg/L	ns	ng	ng	-	-	-
Vinyl chloride	0.4	µg/L	0.5	2	1.1	-	-	-
p+m-Xylene	0.1	µg/L	ns	ng	ng	0.6	0.1	<
o-Xylene	0.1	µg/L	ns	ng	ng	0.3	<	<
Xylene (Total)	0.1	µg/L	300	300 ³	3900	0.9	0.1	<

RDL reportable detection limit

< less than RDL

na not applicable

ns no standards

ng no guideline

µg/L micrograms per litre

- not sampled

¹ MOE Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for All Types of Property Use, coarse textured soils (MOE, 2011)

² CCME Community Water: Guidelines for Canadian Drinking Water Quality, Community Water Supplies, Canadian Environmental Quality Guidelines (CCME, 1999, as updated)

³ Aesthetic Objective

⁴ FIGQGs Table 2, Tier 1: Generic Guidelines for residential/parkland use and coarse textured soils (FIGQG, 2010)

Underline Exceeds MOE (2011) Table 2 groundwater standard

Italic Exceeds CCME (1999 as updated) drinking water quality guidelines

BOLD Exceeds FIGQGs (2010) Table 2, Tier 1

APPENDIX A

REGULATORY CRITERION SELECTION

APPENDIX A - REGULATORY CRITERIA SELECTION

Regulatory criteria have been selected as part of previous investigations completed at the site (Aqua Terre, 2008 and 2009). The following site specific information and assumptions were used to determine the applicable criteria for soil and groundwater:

- The site is owned by the NCC, therefore both federal and provincial regulatory criteria were considered.
- The property land use at the site has been classified as parkland.
- The site would not be considered an environmentally sensitive area as defined by Section 41 of Ontario Regulation 153/04 because:
 - The site is not, does not include, is not immediately adjacent to and is not part of an area of natural significance;
 - Laboratory analysis of pH in soil have not been conducted, however pH levels are assumed to be within the of 5 to 9 (native surface soil, <1.5 m bgs) and 5 to 11 range (subsurface soil, >1.5 m bgs);
 - The site is not considered a shallow soil property since more than 2/3 of the site has more than 2 m of overburden (Aqua Terre, 2008 and 2009); and,
 - The property does not include nor is it adjacent to a water body, nor does it include land that is within 30 m of a water body.
- The full depth restoration option will be used.
- Restoration of groundwater to potable levels is required since:
 - At the time of the 2000 Environmental Site Assessment (Aqua Terre, 2000), municipal drinking water was not provided to the area; however, based on drive-by inspection of existing residents and businesses located along the south side of Leitrim Road, it was evident that municipal water supply is currently supplied by a municipal drinking-water system as defined in the Safe Drinking Water Act, 2002 (supply source: Ottawa River). Subsequent review of on-line City of Ottawa mapping indicated that the properties along the south side of Leitrim Road are indeed within the City of Ottawa's water distribution system Public Service Area. Notwithstanding the above, it was also evident during the drive-by inspection that some properties along Leitrim Road still have water supply wells. Although residences in the vicinity of the site, along Leitrim Road currently have access to municipal water, it could not be confirmed whether all properties located, in whole or in part, within 100 metres of the boundaries of the property, have tied into the water main.
- The site soils have been classified as coarse textured since at least one-third of the soil at the property, measured by volume, consists of medium sand that is assumed to

contain more than 50 percent by mass of particles that are 75 µm or larger in mean diameter (Aqua Terre, 2008 and 2009).

Federal Guidelines

Based on the above information, groundwater analytical results have historically been compared to the following federal criteria:

- Canadian Council of Ministers of the Environment (CCME) "Canadian Environmental Quality Guidelines", Chapter 2 - Community Water Supplies, (CCME, 1998, as updated); and,

Although the above CCME guideline for community water supplies is not intended to be applied to source waters, based on the assumption that advanced treatment technologies are available, groundwater sources of drinking water in Ontario are typically not permitted to be used unless they are free of chemical contaminants, such as TCE.

The CCME is the primary source of federal guidelines for contaminated sites in Canada; however, the CCME have not developed guidelines for the protection of groundwater resources in a non-potable situation. In 2010, Environment Canada released the Federal Interim Groundwater Quality Guidelines (FIGQG) for the assessment, remediation or risk management of contaminated groundwater at federal sites. Although these guidelines have been previously introduced as Interim Guidelines, NCC has specified that they are to be applied at federal sites until Canadian groundwater quality guidelines are available (Meridian, 2010).

Following the FIGQG guidance provided for the selection of guidelines, current groundwater analytical results were compared to the following federal guidelines:

- "Guidance Document on Federal Interim Groundwater Quality Guidelines for Federal Contaminated Sites", Table 2 Federal Interim Groundwater Quality Guidelines, Generic Guidelines for Residential/Parkland Land Use, Tier 1 Lowest Guideline for coarse textured soils (Meridian, 2010).

Provincial Standards

The following provincial site condition standards were previously selected from the Ontario Ministry of the Environment "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" (MOE, 2004) using the approach described by Ontario Regulation 153/04 (O. Reg. 153/04):

- Ontario Ministry of the Environment (MOE) "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" (O. Reg. 153/04) Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for all residential/parkland/institutional property use and coarse textured soils (MOE, 2004).

The MOE recently released amendments to O. Reg. 153/04, posted as O. Reg. 511/09, made under the Environmental Protection Act. For comparison purposes, groundwater analytical results have been compared to the current provincial site condition standards which correspond to revised MOE (2011) standards:

- MOE "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act" (O. Reg. 153/04 *as amended*) Table 2: Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for all residential/parkland/institutional property use and coarse textured soils (MOE, 2011).

APPENDIX B

LABORATORY CERTIFICATES OF ANALYSIS

Your Project #: 11-910
 Your C.O.C. #: 26637205, 266372-05-01, 266372-02-01,
 266372-04-01

Attention: Tina Stone
 SNC-Lavalin Environment
 Nepean
 20 Colonnade Rd
 Suite 110
 Ottawa, ON
 K2E 7M6

Report Date: 2011/06/13

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B181670
Received: 2011/06/07, 12:30

Sample Matrix: Water
 # Samples Received: 25

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Volatile Organic Compounds in Water ¶	17	N/A	2011/06/10	CAM SOP-00226	EPA 8260 modified
Volatile Organic Compounds in Water ¶	8	N/A	2011/06/11	CAM SOP-00226	EPA 8260 modified

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
 * Results relate only to the items tested.

(1) This test was performed by Maxxam Analytics Mississauga

Encryption Key

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

JULIE CLEMENT, Ottawa Customer Service
 Email: JClement@maxxam.ca
 Phone# (613) 274-3549

=====

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 #: B181670
Report Date: 2011/06/13

SNC-Lavalin Environment
Client Project #: 11-910

Sampler Initials: ZT

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		JT2467	JT2468	JT2469	JT2470	JT2471	JT2472	JT2473		
Sampling Date		2011/06/07 07:30	2011/06/07 07:40	2011/06/07 07:50	2011/06/07 08:00	2011/06/07 08:10	2011/06/07 08:20	2011/06/07 08:30		
	Units	MW08-1	MW08-2	MW08-3	MW08-4	MW08-5	MW09-8	MW09-9	RDL	QC Batch
Volatiles Organics										
Acetone (2-Propanone)	ug/L	<10	<10	<10	<10	<10	<10	<10	10	2514402
Benzene	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514402
Bromodichloromethane	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514402
Bromoform	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514402
Bromomethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	2514402
Carbon Tetrachloride	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514402
Chlorobenzene	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514402
Chloroform	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514402
Dibromochloromethane	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514402
1,2-Dichlorobenzene	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514402
1,3-Dichlorobenzene	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514402
1,4-Dichlorobenzene	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514402
Dichlorodifluoromethane (FREON 12)	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	2514402
1,1-Dichloroethane	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514402
1,2-Dichloroethane	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514402
1,1-Dichloroethylene	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514402
cis-1,2-Dichloroethylene	ug/L	1.0	<0.1	<0.1	<0.1	<0.1	0.5	<0.1	0.1	2514402
trans-1,2-Dichloroethylene	ug/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514402
1,2-Dichloropropane	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514402
cis-1,3-Dichloropropene	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514402
trans-1,3-Dichloropropene	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514402
Ethylbenzene	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514402
Ethylene Dibromide	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514402
Hexane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	2514402
Methylene Chloride(Dichloromethane)	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	2514402
Methyl Isobutyl Ketone	ug/L	<5	<5	<5	<5	<5	<5	<5	5	2514402
Methyl Ethyl Ketone (2-Butanone)	ug/L	<5	<5	<5	<5	<5	<5	<5	5	2514402
Methyl t-butyl ether (MTBE)	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514402
Styrene	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514402
1,1,1,2-Tetrachloroethane	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514402
1,1,2,2-Tetrachloroethane	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514402
Tetrachloroethylene	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	0.4	2514402
Toluene	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514402
1,1,1-Trichloroethane	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514402

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B181670
Report Date: 2011/06/13

SNC-Lavalin Environment
Client Project #: 11-910

Sampler Initials: ZT

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		JT2467	JT2468	JT2469	JT2470	JT2471	JT2472	JT2473		
Sampling Date		2011/06/07 07:30	2011/06/07 07:40	2011/06/07 07:50	2011/06/07 08:00	2011/06/07 08:10	2011/06/07 08:20	2011/06/07 08:30		
	Units	MW08-1	MW08-2	MW08-3	MW08-4	MW08-5	MW09-8	MW09-9	RDL	QC Batch
1,1,2-Trichloroethane	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514402
Trichloroethylene	ug/L	6.3	<0.1	<0.1	<0.1	0.5	18	<0.1	0.1	2514402
Vinyl Chloride	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514402
p+m-Xylene	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514402
o-Xylene	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514402
Xylene (Total)	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514402
Trichlorofluoromethane (FREON 11)	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514402
Surrogate Recovery (%)										
4-Bromofluorobenzene	%	90	90	91	90	90	89	90		2514402
D4-1,2-Dichloroethane	%	92	93	91	93	92	90	92		2514402
D8-Toluene	%	96	96	97	95	96	97	97		2514402

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B181670
Report Date: 2011/06/13

SNC-Lavalin Environment
Client Project #: 11-910

Sampler Initials: ZT

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		JT2474	JT2475	JT2476	JT2511	JT2512	JT2513	JT2514		
Sampling Date		2011/06/07 08:40	2011/06/07 08:50	2011/06/07 09:00	2011/06/07 09:10	2011/06/07 09:10	2011/06/07 09:20	2011/06/07 09:30		
	Units	MW-10-10	MW-10-11	MW-10-12	MW-10-13	MW-99	MW-10-14	MW-10-15	RDL	QC Batch
Volatile Organics										
Acetone (2-Propanone)	ug/L	<10	<10	<10	<10	<10	<10	<10	10	2514402
Benzene	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514402
Bromodichloromethane	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514402
Bromoform	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514402
Bromomethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	2514402
Carbon Tetrachloride	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514402
Chlorobenzene	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514402
Chloroform	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514402
Dibromochloromethane	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514402
1,2-Dichlorobenzene	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514402
1,3-Dichlorobenzene	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514402
1,4-Dichlorobenzene	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514402
Dichlorodifluoromethane (FREON 12)	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	2514402
1,1-Dichloroethane	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514402
1,2-Dichloroethane	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514402
1,1-Dichloroethylene	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514402
cis-1,2-Dichloroethylene	ug/L	0.3	2.8	<0.1	0.3	0.2	<0.1	0.1	0.1	2514402
trans-1,2-Dichloroethylene	ug/L	<0.1	0.7	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514402
1,2-Dichloropropane	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514402
cis-1,3-Dichloropropene	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514402
trans-1,3-Dichloropropene	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514402
Ethylbenzene	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514402
Ethylene Dibromide	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514402
Hexane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	2514402
Methylene Chloride(Dichloromethane)	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	2514402
Methyl Isobutyl Ketone	ug/L	<5	<5	<5	<5	<5	<5	<5	5	2514402
Methyl Ethyl Ketone (2-Butanone)	ug/L	<5	<5	<5	<5	<5	<5	<5	5	2514402
Methyl t-butyl ether (MTBE)	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514402
Styrene	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514402
1,1,1,2-Tetrachloroethane	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514402
1,1,2,2-Tetrachloroethane	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514402
Tetrachloroethylene	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	0.4	2514402
Toluene	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514402
1,1,1-Trichloroethane	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514402

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B181670
Report Date: 2011/06/13

SNC-Lavalin Environment
Client Project #: 11-910

Sampler Initials: ZT

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		JT2474	JT2475	JT2476	JT2511	JT2512	JT2513	JT2514		
Sampling Date		2011/06/07 08:40	2011/06/07 08:50	2011/06/07 09:00	2011/06/07 09:10	2011/06/07 09:10	2011/06/07 09:20	2011/06/07 09:30		
	Units	MW-10-10	MW-10-11	MW-10-12	MW-10-13	MW-99	MW-10-14	MW-10-15	RDL	QC Batch
1,1,2-Trichloroethane	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514402
Trichloroethylene	ug/L	6.4	8.9	<0.1	2.4	1.9	<0.1	1.3	0.1	2514402
Vinyl Chloride	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514402
p+m-Xylene	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514402
o-Xylene	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514402
Xylene (Total)	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514402
Trichlorofluoromethane (FREON 11)	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514402
Surrogate Recovery (%)										
4-Bromofluorobenzene	%	89	90	90	90	89	89	89		2514402
D4-1,2-Dichloroethane	%	92	90	92	90	92	91	91		2514402
D8-Toluene	%	95	99	96	97	96	97	96		2514402

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B181670
Report Date: 2011/06/13

SNC-Lavalin Environment
Client Project #: 11-910

Sampler Initials: ZT

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		JT2515	JT2516	JT2517	JT2518	JT2519	JT2520		
Sampling Date		2011/06/07 09:40	2011/06/07 09:50	2011/06/07 09:50	2011/06/07 10:10	2011/06/07 10:20	2011/06/07 10:30		
	Units	MW-10-16	MW-10-17	MW-98	MW-10-18	MW-10-19	MW-10-20	RDL	QC Batch
Volatile Organics									
Acetone (2-Propanone)	ug/L	<10	<10	<10	<10	<10	<10	10	2514402
Benzene	ug/L	<0.1	1.5	1.5	<0.1	<0.1	<0.1	0.1	2514402
Bromodichloromethane	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514402
Bromoform	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514402
Bromomethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	2514402
Carbon Tetrachloride	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514402
Chlorobenzene	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514402
Chloroform	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514402
Dibromochloromethane	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514402
1,2-Dichlorobenzene	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514402
1,3-Dichlorobenzene	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514402
1,4-Dichlorobenzene	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514402
Dichlorodifluoromethane (FREON 12)	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	2514402
1,1-Dichloroethane	ug/L	0.2	0.2	0.2	<0.1	<0.1	<0.1	0.1	2514402
1,2-Dichloroethane	ug/L	<0.2	0.5	0.5	<0.2	<0.2	<0.2	0.2	2514402
1,1-Dichloroethylene	ug/L	<0.1	0.1	0.1	<0.1	<0.1	<0.1	0.1	2514402
cis-1,2-Dichloroethylene	ug/L	<0.1	5.0	5.0	<0.1	<0.1	<0.1	0.1	2514402
trans-1,2-Dichloroethylene	ug/L	<0.1	1.1	1.1	<0.1	<0.1	<0.1	0.1	2514402
1,2-Dichloropropane	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514402
cis-1,3-Dichloropropene	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514402
trans-1,3-Dichloropropene	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514402
Ethylbenzene	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514402
Ethylene Dibromide	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514402
Hexane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	2514402
Methylene Chloride(Dichloromethane)	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	2514402
Methyl Isobutyl Ketone	ug/L	<5	<5	<5	<5	<5	<5	5	2514402
Methyl Ethyl Ketone (2-Butanone)	ug/L	<5	<5	<5	<5	<5	<5	5	2514402
Methyl t-butyl ether (MTBE)	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514402
Styrene	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514402
1,1,1,2-Tetrachloroethane	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514402
1,1,2,2-Tetrachloroethane	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514402
Tetrachloroethylene	ug/L	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	0.4	2514402
Toluene	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514402
1,1,1-Trichloroethane	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514402

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B181670
Report Date: 2011/06/13

SNC-Lavalin Environment
Client Project #: 11-910

Sampler Initials: ZT

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		JT2515	JT2516	JT2517	JT2518	JT2519	JT2520		
Sampling Date		2011/06/07 09:40	2011/06/07 09:50	2011/06/07 09:50	2011/06/07 10:10	2011/06/07 10:20	2011/06/07 10:30		
	Units	MW-10-16	MW-10-17	MW-98	MW-10-18	MW-10-19	MW-10-20	RDL	QC Batch
1,1,2-Trichloroethane	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514402
Trichloroethylene	ug/L	<0.1	10	10	<0.1	<0.1	<0.1	0.1	2514402
Vinyl Chloride	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514402
p+m-Xylene	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514402
o-Xylene	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514402
Xylene (Total)	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514402
Trichlorofluoromethane (FREON 11)	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514402
Surrogate Recovery (%)									
4-Bromofluorobenzene	%	89	88	89	90	89	88		2514402
D4-1,2-Dichloroethane	%	92	90	88	92	92	92		2514402
D8-Toluene	%	96	97	98	95	96	95		2514402

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B181670
Report Date: 2011/06/13

SNC-Lavalin Environment
Client Project #: 11-910

Sampler Initials: ZT

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		JT2568	JT2569	JT2570	JT2571	JT2572		
Sampling Date		2011/06/07 10:40	2011/06/07 10:50	2011/06/07 11:00	2011/06/07 11:10	2011/06/07 11:20		
	Units	MW-10-21	MW-10-22	MW-10-23	MW-10-24	MW-10-25	RDL	QC Batch
Volatile Organics								
Acetone (2-Propanone)	ug/L	<10	<10	<10	<10	<10	10	2514408
Benzene	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514408
Bromodichloromethane	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514408
Bromoform	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514408
Bromomethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	2514408
Carbon Tetrachloride	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514408
Chlorobenzene	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514408
Chloroform	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514408
Dibromochloromethane	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514408
1,2-Dichlorobenzene	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514408
1,3-Dichlorobenzene	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514408
1,4-Dichlorobenzene	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514408
Dichlorodifluoromethane (FREON 12)	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	2514408
1,1-Dichloroethane	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514408
1,2-Dichloroethane	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514408
1,1-Dichloroethylene	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514408
cis-1,2-Dichloroethylene	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514408
trans-1,2-Dichloroethylene	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514408
1,2-Dichloropropane	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514408
cis-1,3-Dichloropropene	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514408
trans-1,3-Dichloropropene	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514408
Ethylbenzene	ug/L	<0.1	0.2	<0.1	<0.1	<0.1	0.1	2514408
Ethylene Dibromide	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514408
Hexane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	2514408
Methylene Chloride(Dichloromethane)	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	2514408
Methyl Isobutyl Ketone	ug/L	<5	<5	<5	<5	<5	5	2514408
Methyl Ethyl Ketone (2-Butanone)	ug/L	<5	<5	<5	<5	<5	5	2514408
Methyl t-butyl ether (MTBE)	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514408
Styrene	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514408
1,1,1,2-Tetrachloroethane	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514408
1,1,1,2,2-Tetrachloroethane	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514408
Tetrachloroethylene	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514408
Toluene	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514408
1,1,1-Trichloroethane	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514408

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B181670
Report Date: 2011/06/13

SNC-Lavalin Environment
Client Project #: 11-910

Sampler Initials: ZT

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		JT2568	JT2569	JT2570	JT2571	JT2572		
Sampling Date		2011/06/07 10:40	2011/06/07 10:50	2011/06/07 11:00	2011/06/07 11:10	2011/06/07 11:20		
	Units	MW-10-21	MW-10-22	MW-10-23	MW-10-24	MW-10-25	RDL	QC Batch
1,1,2-Trichloroethane	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514408
Trichloroethylene	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2514408
Vinyl Chloride	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514408
p+m-Xylene	ug/L	<0.1	0.7	0.2	<0.1	0.1	0.1	2514408
o-Xylene	ug/L	<0.1	0.4	0.1	<0.1	<0.1	0.1	2514408
Xylene (Total)	ug/L	<0.1	1.0	0.3	<0.1	0.1	0.1	2514408
Trichlorofluoromethane (FREON 11)	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2514408
Surrogate Recovery (%)								
4-Bromofluorobenzene	%	97	97	99	100	100		2514408
D4-1,2-Dichloroethane	%	98	106	104	104	103		2514408
D8-Toluene	%	100	103	102	102	101		2514408

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B181670
Report Date: 2011/06/13

SNC-Lavalin Environment
Client Project #: 11-910

Sampler Initials: ZT

Package 1	7.7°C
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Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

VOC Analysis: Tetrachloroethene detection limits for batch #2514402 were raised due background contamination.

Maxxam Job #: B181670
Report Date: 2011/06/13

SNC-Lavalin Environment
Client Project #: 11-910

Sampler Initials: ZT

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
2514402	4-Bromofluorobenzene	2011/06/10	97	70 - 130	96	70 - 130	90	%		
2514402	D4-1,2-Dichloroethane	2011/06/10	88	70 - 130	86	70 - 130	90	%		
2514402	D8-Toluene	2011/06/10	101	70 - 130	100	70 - 130	97	%		
2514402	Acetone (2-Propanone)	2011/06/10	83	60 - 140	80	60 - 140	<10	ug/L	NC	30
2514402	Benzene	2011/06/10	100	70 - 130	99	70 - 130	<0.1	ug/L	NC	30
2514402	Bromodichloromethane	2011/06/10	94	70 - 130	92	70 - 130	<0.1	ug/L	NC	30
2514402	Bromoform	2011/06/10	75	70 - 130	75	70 - 130	<0.2	ug/L	NC	30
2514402	Bromomethane	2011/06/10	110	60 - 140	108	60 - 140	<0.5	ug/L	NC	30
2514402	Carbon Tetrachloride	2011/06/10	107	70 - 130	106	70 - 130	<0.1	ug/L	NC	30
2514402	Chlorobenzene	2011/06/10	94	70 - 130	96	70 - 130	<0.1	ug/L	NC	30
2514402	Chloroform	2011/06/10	99	70 - 130	98	70 - 130	<0.1	ug/L	NC	30
2514402	Dibromochloromethane	2011/06/10	93	70 - 130	93	70 - 130	<0.2	ug/L	NC	30
2514402	1,2-Dichlorobenzene	2011/06/10	93	70 - 130	99	70 - 130	<0.2	ug/L	NC	30
2514402	1,3-Dichlorobenzene	2011/06/10	96	70 - 130	102	70 - 130	<0.2	ug/L	NC	30
2514402	1,4-Dichlorobenzene	2011/06/10	97	70 - 130	103	70 - 130	<0.2	ug/L	NC	30
2514402	Dichlorodifluoromethane (FREON 12)	2011/06/10	103	60 - 140	107	60 - 140	<0.5	ug/L	NC	30
2514402	1,1-Dichloroethane	2011/06/10	95	70 - 130	95	70 - 130	<0.1	ug/L	NC	30
2514402	1,2-Dichloroethane	2011/06/10	90	70 - 130	89	70 - 130	<0.2	ug/L	NC	30
2514402	1,1-Dichloroethylene	2011/06/10	103	70 - 130	104	70 - 130	<0.1	ug/L	NC	30
2514402	cis-1,2-Dichloroethylene	2011/06/10	95	70 - 130	93	70 - 130	<0.1	ug/L	4.6	30
2514402	trans-1,2-Dichloroethylene	2011/06/10	96	70 - 130	102	70 - 130	<0.1	ug/L	NC	30
2514402	1,2-Dichloropropane	2011/06/10	93	70 - 130	92	70 - 130	<0.1	ug/L	NC	30
2514402	cis-1,3-Dichloropropene	2011/06/10	95	70 - 130	94	70 - 130	<0.2	ug/L	NC	30
2514402	trans-1,3-Dichloropropene	2011/06/10	87	70 - 130	87	70 - 130	<0.2	ug/L	NC	30
2514402	Ethylbenzene	2011/06/10	103	70 - 130	106	70 - 130	<0.1	ug/L	NC	30
2514402	Ethylene Dibromide	2011/06/10	87	70 - 130	86	70 - 130	<0.2	ug/L	NC	30
2514402	Hexane	2011/06/10	91	70 - 130	99	70 - 130	<0.5	ug/L	NC	30
2514402	Methylene Chloride(Dichloromethane)	2011/06/10	91	70 - 130	89	70 - 130	<0.5	ug/L	NC	30
2514402	Methyl Isobutyl Ketone	2011/06/10	77	70 - 130	74	70 - 130	<5	ug/L	NC	30
2514402	Methyl Ethyl Ketone (2-Butanone)	2011/06/10	72	60 - 140	70	60 - 140	<5	ug/L	NC	30
2514402	Methyl t-butyl ether (MTBE)	2011/06/10	80	70 - 130	88	70 - 130	<0.2	ug/L	NC	30
2514402	Styrene	2011/06/10	84	70 - 130	88	70 - 130	<0.2	ug/L	NC	30
2514402	1,1,1,2-Tetrachloroethane	2011/06/10	98	70 - 130	99	70 - 130	<0.1	ug/L	NC	30
2514402	1,1,2,2-Tetrachloroethane	2011/06/10	81	70 - 130	79	70 - 130	<0.2	ug/L	NC	30
2514402	Tetrachloroethylene	2011/06/10	99	70 - 130	103	70 - 130	<0.4(1)	ug/L	NC	30
2514402	Toluene	2011/06/10	98	70 - 130	101	70 - 130	<0.2	ug/L	NC	30
2514402	1,1,1-Trichloroethane	2011/06/10	102	70 - 130	101	70 - 130	<0.1	ug/L	NC	30
2514402	1,1,2-Trichloroethane	2011/06/10	83	70 - 130	83	70 - 130	<0.2	ug/L	NC	30
2514402	Trichloroethylene	2011/06/10	102	70 - 130	104	70 - 130	<0.1	ug/L	5.9	30
2514402	Vinyl Chloride	2011/06/10	101	70 - 130	102	70 - 130	<0.2	ug/L	NC	30

Maxxam Job #: B181670
Report Date: 2011/06/13

SNC-Lavalin Environment
Client Project #: 11-910

Sampler Initials: ZT

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
2514402	p+m-Xylene	2011/06/10	103	70 - 130	106	70 - 130	<0.1	ug/L	NC	30
2514402	o-Xylene	2011/06/10	102	70 - 130	104	70 - 130	<0.1	ug/L	NC	30
2514402	Trichlorofluoromethane (FREON 11)	2011/06/10	102	70 - 130	103	70 - 130	<0.2	ug/L	NC	30
2514402	Xylene (Total)	2011/06/10					<0.1	ug/L	NC	30
2514408	4-Bromofluorobenzene	2011/06/10	97	70 - 130	99	70 - 130	100	%		
2514408	D4-1,2-Dichloroethane	2011/06/10	97	70 - 130	105	70 - 130	106	%		
2514408	D8-Toluene	2011/06/10	103	70 - 130	103	70 - 130	104	%		
2514408	Acetone (2-Propanone)	2011/06/11	90	60 - 140	108	60 - 140	<10	ug/L	NC	30
2514408	Benzene	2011/06/11	104	70 - 130	104	70 - 130	<0.1	ug/L	8.9	30
2514408	Bromodichloromethane	2011/06/11	105	70 - 130	103	70 - 130	<0.1	ug/L	NC	30
2514408	Bromoform	2011/06/11	107	70 - 130	107	70 - 130	<0.2	ug/L	NC	30
2514408	Bromomethane	2011/06/11	118	60 - 140	114	60 - 140	<0.5	ug/L	NC	30
2514408	Carbon Tetrachloride	2011/06/11	108	70 - 130	105	70 - 130	<0.1	ug/L	NC	30
2514408	Chlorobenzene	2011/06/11	106	70 - 130	104	70 - 130	<0.1	ug/L	NC	30
2514408	Chloroform	2011/06/11	112	70 - 130	106	70 - 130	<0.1	ug/L	NC	30
2514408	Dibromochloromethane	2011/06/11	102	70 - 130	103	70 - 130	<0.2	ug/L	NC	30
2514408	1,2-Dichlorobenzene	2011/06/11	103	70 - 130	102	70 - 130	<0.2	ug/L	NC	30
2514408	1,3-Dichlorobenzene	2011/06/11	104	70 - 130	101	70 - 130	<0.2	ug/L	NC	30
2514408	1,4-Dichlorobenzene	2011/06/11	103	70 - 130	101	70 - 130	<0.2	ug/L	NC	30
2514408	Dichlorodifluoromethane (FREON 12)	2011/06/11	122	60 - 140	111	60 - 140	<0.5	ug/L	NC	30
2514408	1,1-Dichloroethane	2011/06/11	108	70 - 130	106	70 - 130	<0.1	ug/L	NC	30
2514408	1,2-Dichloroethane	2011/06/11	96	70 - 130	104	70 - 130	<0.2	ug/L	NC	30
2514408	1,1-Dichloroethylene	2011/06/11	104	70 - 130	110	70 - 130	<0.1	ug/L	NC	30
2514408	cis-1,2-Dichloroethylene	2011/06/11	106	70 - 130	102	70 - 130	<0.1	ug/L	NC	30
2514408	trans-1,2-Dichloroethylene	2011/06/11	104	70 - 130	103	70 - 130	<0.1	ug/L	NC	30
2514408	1,2-Dichloropropane	2011/06/11	109	70 - 130	106	70 - 130	<0.1	ug/L	NC	30
2514408	cis-1,3-Dichloropropene	2011/06/11	108	70 - 130	107	70 - 130	<0.2	ug/L	NC	30
2514408	trans-1,3-Dichloropropene	2011/06/11	104	70 - 130	109	70 - 130	<0.2	ug/L	NC	30
2514408	Ethylbenzene	2011/06/11	107	70 - 130	107	70 - 130	<0.1	ug/L	6.4	30
2514408	Ethylene Dibromide	2011/06/11	102	70 - 130	104	70 - 130	<0.2	ug/L	NC	30
2514408	Hexane	2011/06/11	122	70 - 130	110	70 - 130	<0.5	ug/L	NC	30
2514408	Methylene Chloride(Dichloromethane)	2011/06/11	100	70 - 130	100	70 - 130	<0.5	ug/L	NC	30
2514408	Methyl Isobutyl Ketone	2011/06/11	95	70 - 130	104	70 - 130	<5	ug/L	NC	30
2514408	Methyl Ethyl Ketone (2-Butanone)	2011/06/11	110	60 - 140	110	60 - 140	<5	ug/L	NC	30
2514408	Methyl t-butyl ether (MTBE)	2011/06/11	101	70 - 130	104	70 - 130	<0.2	ug/L	NC	30
2514408	Styrene	2011/06/11	109	70 - 130	107	70 - 130	<0.2	ug/L	NC	30
2514408	1,1,1,2-Tetrachloroethane	2011/06/11	105	70 - 130	105	70 - 130	<0.1	ug/L	NC	30
2514408	1,1,2,2-Tetrachloroethane	2011/06/11	105	70 - 130	104	70 - 130	<0.2	ug/L	NC	30
2514408	Tetrachloroethylene	2011/06/11	105	70 - 130	98	70 - 130	<0.1	ug/L	NC	30
2514408	Toluene	2011/06/11	106	70 - 130	106	70 - 130	<0.2	ug/L	NC	30

Maxxam Job #: B181670
Report Date: 2011/06/13

SNC-Lavalin Environment
Client Project #: 11-910

Sampler Initials: ZT

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
2514408	1,1,1-Trichloroethane	2011/06/11	108	70 - 130	105	70 - 130	<0.1	ug/L	NC	30
2514408	1,1,2-Trichloroethane	2011/06/11	99	70 - 130	102	70 - 130	<0.2	ug/L	NC	30
2514408	Trichloroethylene	2011/06/11	102	70 - 130	97	70 - 130	<0.1	ug/L	NC	30
2514408	Vinyl Chloride	2011/06/11	109	70 - 130	104	70 - 130	<0.2	ug/L	NC	30
2514408	p+m-Xylene	2011/06/11	105	70 - 130	105	70 - 130	<0.1	ug/L	6.5	30
2514408	o-Xylene	2011/06/11	110	70 - 130	107	70 - 130	<0.1	ug/L	5.0	30
2514408	Trichlorofluoromethane (FREON 11)	2011/06/11	109	70 - 130	102	70 - 130	<0.2	ug/L	NC	30
2514408	Xylene (Total)	2011/06/11					<0.1	ug/L	6.2	30

N/A = Not Applicable

RPD = Relative Percent Difference

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 to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

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 (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: Tetrachloroethene detection limit was raised due background contamination.

Validation Signature Page

Maxxam Job #: B181670

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

A handwritten signature in black ink, appearing to read "Cristina Carriere", is written over a horizontal line.

CRISTINA CARRIERE, Scientific Services

=====

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 Campobello 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 1 of 3

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#2033 SNC-Lavalin Environment	Company Name:	Tina Stone	Quotation #:	B04762	MAXXAM JOB #:	BOTTLE ORDER #:
Contact Name:	Tina Stone	Contact Name:	Tina Stone	P.O. #:			266372
Address:	20 Colonnade Rd Suite 110 Ottawa ON K2E 7M6	Address:		Project #:	11-910	CHAIN OF CUSTODY #:	PROJECT MANAGER:
Phone:	(613)226-2456 Fax: (613)226-9980	Phone:		Project Name:			JULIE CLEMENT
Email:	Christina.Stone@sncilavalin.com	Email:	Christina.Stone@sncilavalin.com	Site #:	Zac Thomas		
				Sampled By:			

REGULATORY CRITERIA:		SPECIAL INSTRUCTIONS		ANALYSIS REQUESTED (Please be specific):		TURNAROUND TIME (TAT) REQUIRED:	
<input type="checkbox"/> MISA	<input checked="" type="checkbox"/> Reg. 153/04	Sewer Use	<input type="checkbox"/> Sanitary			PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS	
<input type="checkbox"/> PWQO	<input checked="" type="checkbox"/> Table 1	<input type="checkbox"/> Storm	<input type="checkbox"/> Combined			Regular (Standard) TAT:	
<input type="checkbox"/> Reg. 558	<input checked="" type="checkbox"/> Table 2	<input type="checkbox"/> Municipality				(will be applied if Rush TAT is not specified):	
	<input type="checkbox"/> Table 3					Standard TAT = 5-7 Working days for most tests.	
	<input type="checkbox"/> Table 6					Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.	
Other (specify)	CCME	Report Criteria on C of A?	<input type="checkbox"/> 2004 <input type="checkbox"/> 2011			Job Specific Rush TAT (if applies to entire submission)	
Note: For regulated drinking water samples - please use the Drinking Water Chain of Custody Form						Date Required: Time Required:	

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)	Volatile Organic Compounds in Water		
	MW08-1	June 7, 2011	0730	GW	N	X			3
	MW08-2	June 7, 2011	0740		N	X			3
	MW08-3	June 7, 2011	0750		N	X			3
	MW08-4	June 7, 2011	0800		N	X			3
	MW08-5	June 7, 2011	0810		N	X			3
	MW09-8	June 7, 2011	0820		N	X			3
	MW09-9	June 7, 2011	0830		N	X			3
	MW-10-10	June 7, 2011	0840		N	X			3
	MW-10-11	June 7, 2011	0850		N	X			3
	MW-10-12	June 7, 2011	0900		N	X			3

RELINQUISHED BY: (Signature/Print)		Date: (YY/MM/DD)	Time:	RECEIVED BY: (Signature/Print)		Date: (YY/MM/DD)	Time:	# Jars Used and	Laboratory Use Only		
Zac Thomas		11/06/07	12:30	J. Clement		2011/06/07	12:30	Not Submitted	Time Sensitive	Temperature (°C) on Receipt	Custody Seal Intact on Cooler?
									<input type="checkbox"/>	8/6/19	<input type="checkbox"/> Yes <input type="checkbox"/> No

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



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CHAIN OF CUSTODY RECORD

Page 2 of 3

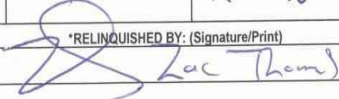
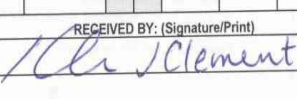
INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#2033 SNC-Lavalin Environment	Company Name:		Quotation #:	B04762	MAXXAM JOB #:	BOTTLE ORDER #:
Contact Name:	Tina Stone	Contact Name:	Tina Stone	P.O. #:			 266372
Address:	20 Colonnade Rd Suite 110 Ottawa ON K2E 7M6	Address:		Project #:	11-910	CHAIN OF CUSTODY #:	PROJECT MANAGER:
Phone:	(613)226-2456 Fax: (613)226-9980	Phone:		Project Name:		 C#266372-02-01	JULIE CLEMENT
Email:	Christina.Stone@snclavalin.com	Email:	Christina.Stone@snclavalin.com	Site #:			
				Sampled By:	Zac Thoms		

REGULATORY CRITERIA:		SPECIAL INSTRUCTIONS		ANALYSIS REQUESTED (Please be specific):		TURNAROUND TIME (TAT) REQUIRED:	
<input type="checkbox"/> MISA	<input checked="" type="checkbox"/> Reg. 153/04	<input type="checkbox"/> Sewer Use	<input type="checkbox"/> Sanitary	<div>Regulated Drinking Water? (Y/N) <input type="checkbox"/> Metals Field Filtered? (Y/N) <input type="checkbox"/> Volatile Organic Compounds in Water <input type="checkbox"/></div>		PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS	
<input type="checkbox"/> PWQO	<input type="checkbox"/> Table 1 <input type="checkbox"/> Residential/Parkland	<input type="checkbox"/> Storm	<input type="checkbox"/> Combined			Regular (Standard) TAT:	
<input type="checkbox"/> Reg. 558	<input type="checkbox"/> Table 2 <input type="checkbox"/> Industrial/Commercial					(will be applied if Rush TAT is not specified):	
	<input type="checkbox"/> Table 3 <input type="checkbox"/> Medium/Fine					Standard TAT = 5-7 Working days for most tests.	
Other (specify)	CGP	Municipality				Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.	
Report Criteria on C of A? <input type="checkbox"/> 2004 <input type="checkbox"/> 2011						Job Specific Rush TAT (if applies to entire submission)	

Note: For 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)	Volatile Organic Compounds in Water	# of Bottles	Comments
1	MW-10-13	June 7, 2011	0916	GW	N	X		3	
2	MW-99	June 7, 2011	0910	GW	N	X		3	
3	MW-10-14	June 7, 2011	0920	GW	N	X		3	
4	MW-10-15	June 7, 2011	0930	GW	N	X		3	
5	MW-10-16	June 7, 2011	0940	GW	N	X		3	
6	MW-10-17	June 7, 2011	0950	GW	N	X		3	
7	MW-98	June 7, 2011	0950 1000	GW	N	X		3	
8	MW-10-18	June 7, 2011	1010	GW	N	X		3	REC'D IN OTTAWA
9	MW-10-19	June 7, 2011	1020	GW	N	X		3	
10	MW-10-20	June 7, 2011	1030	GW	N	X		3	

*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		
		11/06/07	12:30			2011/06/07	12:30		Time Sensitive	Temperature (°C) on Receipt	Custody Seal Intact on Cooler?
									<input type="checkbox"/>	8/6/9	<input type="checkbox"/> Yes <input type="checkbox"/> No

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

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INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#2033 SNC-Lavalin Environment	Company Name:		Quotation #:	B04762	MAXXAM JOB #:	BOTTLE ORDER #:
Contact Name:	Tina Stone	Contact Name:	Tina Stone	P.O. #:			
Address:	20 Colonnade Rd Suite 110 Ottawa ON K2E 7M6	Address:		Project #:	11-910	CHAIN OF CUSTODY #:	PROJECT MANAGER:
Phone:	(613)226-2456 Fax: (613)226-9980	Phone:		Project Name:			JULIE CLEMENT
Email:	Christina.Stone@sncclavalin.com	Email:	Christina.Stone@sncclavalin.com	Site #:		C#266372-04-01	
				Sampled By:	<i>Zac Thomas</i>		

REGULATORY CRITERIA:		SPECIAL INSTRUCTIONS		ANALYSIS REQUESTED (Please be specific):		TURNAROUND TIME (TAT) REQUIREMENT:	
<input type="checkbox"/> MISA	<input checked="" type="checkbox"/> Reg. 153/04	<input type="checkbox"/> Sewer Use	<input type="checkbox"/> Sanitary	ANALYSIS REQUESTED (Please be specific): Regulated Drinking Water ? (Y/N) Metals Field Filtered ? (Y/N) Volatile Organic Compounds in Water		PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS	
<input type="checkbox"/> PWQO	<input type="checkbox"/> Table 1	<input type="checkbox"/> Residential/Parkland	<input type="checkbox"/> Storm			Regular (Standard) TAT:	
<input type="checkbox"/> Reg. 558	<input type="checkbox"/> Table 2	<input type="checkbox"/> Industrial/Commercial	<input type="checkbox"/> Combined			(will be applied if Rush TAT is not specified):	
	<input type="checkbox"/> Table 3	<input type="checkbox"/> Medium/Fine				Standard TAT = 5-7 Working days for most tests.	
Other (specify) <i>CCME</i>		Municipality		Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.		<input checked="" type="checkbox"/>	
Report Criteria on C of A ? <input type="checkbox"/>		Reg. 153		Job Specific Rush TAT (if applies to entire submission)		<input type="checkbox"/>	
		<input type="checkbox"/> 2004 <input type="checkbox"/> 2011		Date Required: _____ Time Required: _____		<input type="checkbox"/>	

Note: For 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)	Volatile Organic Compounds in Water	# of Bottles	Comments
1	MW-10-21	June 7, 2011	1040	GW	N	X		3	
2	MW-10-22	June 7, 2011	1050		N	X		3	
3	MW-10-23	June 7, 2011	1100		N	X		3	
4	MW-10-24	June 7, 2011	1110		N	X		3	
5	MW-10-25	June 7, 2011	1120		N	X		3	
6									
7									
8									
9									
10									

REC'D IN OTTAWA

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	
<i>Zac Thomas</i>	11/06/07	1230	<i>J. Clement</i>	2011/06/07	12:30		Time Sensitive <input type="checkbox"/>	Temperature (°C) on Receipt <i>8/6/9</i>
							Custody Seal Intact on Cooler? <input type="checkbox"/> Yes <input type="checkbox"/> 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.

Maxxam Analytics International Corporation o/a Maxxam Analytics

on ice

Your Project #: 11-910
Your C.O.C. #: 28300301, 283003-01-01, 283003-02-01,
283003-03-01

Attention: Tina Stone
SNC-Lavalin Environment
Nepean
20 Colonnade Rd
Suite 110
Ottawa, ON
K2E 7M6

Report Date: 2011/10/04

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B1E9427
Received: 2011/09/27, 13:55

Sample Matrix: Water
Samples Received: 25

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Volatile Organic Compounds in Water	13	N/A	2011/09/30	CAM SOP-00226	EPA 8260 modified
Volatile Organic Compounds in Water	12	N/A	2011/10/01	CAM SOP-00226	EPA 8260 modified

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 by SCC (Lab ID 97) 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.
- * Results relate only to the items tested.

Encryption Key

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

JULIE CLEMENT, Ottawa Customer Service
Email: JClement@maxxam.ca
Phone# (613) 274-3549

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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.

Total cover pages: 1

Maxxam Job #: B1E9427
Report Date: 2011/10/04

SNC-Lavalin Environment
Client Project #: 11-910

Sampler Initials: ZT

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		LB0317	LB0318	LB0319	LB0320	LB0321	LB0322	LB0323		
Sampling Date		2011/09/27 08:00	2011/09/27 08:10	2011/09/27 08:20	2011/09/27 08:30	2011/09/27 08:40	2011/09/27 08:50	2011/09/27 09:00		
	Units	MW08-1	MW08-2	MW08-3	MW08-4	MW08-5	MW09-8	MW09-9	RDL	QC Batch
Volatiles Organics										
Dichlorodifluoromethane (FREON 12)	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	2630038
Hexane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	2630038
Acetone (2-Propanone)	ug/L	<10	<10	<10	<10	<10	<10	<10	10	2630038
Benzene	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2630038
Bromodichloromethane	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2630038
Bromoform	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2630038
Bromomethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	2630038
Carbon Tetrachloride	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2630038
Chlorobenzene	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2630038
Chloroform	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2630038
Dibromochloromethane	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2630038
1,2-Dichlorobenzene	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2630038
1,3-Dichlorobenzene	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2630038
1,4-Dichlorobenzene	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2630038
1,1-Dichloroethane	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2630038
1,2-Dichloroethane	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2630038
1,1-Dichloroethylene	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2630038
cis-1,2-Dichloroethylene	ug/L	1.2	<0.1	<0.1	0.1	<0.1	0.7	<0.1	0.1	2630038
trans-1,2-Dichloroethylene	ug/L	0.2	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	0.1	2630038
1,2-Dichloropropane	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2630038
cis-1,3-Dichloropropene	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2630038
trans-1,3-Dichloropropene	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2630038
Ethylbenzene	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2630038
Ethylene Dibromide	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2630038
Methylene Chloride(Dichloromethane)	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	2630038
Methyl Isobutyl Ketone	ug/L	<5	<5	<5	<5	<5	<5	<5	5	2630038
Methyl Ethyl Ketone (2-Butanone)	ug/L	<5	<5	<5	<5	<5	<5	<5	5	2630038
Methyl t-butyl ether (MTBE)	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2630038
Styrene	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2630038
1,1,1,2-Tetrachloroethane	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2630038
1,1,2,2-Tetrachloroethane	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2630038
Tetrachloroethylene	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2630038
Toluene	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2630038
1,1,1-Trichloroethane	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2630038

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B1E9427
Report Date: 2011/10/04

SNC-Lavalin Environment
Client Project #: 11-910

Sampler Initials: ZT

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		LB0317	LB0318	LB0319	LB0320	LB0321	LB0322	LB0323		
Sampling Date		2011/09/27 08:00	2011/09/27 08:10	2011/09/27 08:20	2011/09/27 08:30	2011/09/27 08:40	2011/09/27 08:50	2011/09/27 09:00		
	Units	MW08-1	MW08-2	MW08-3	MW08-4	MW08-5	MW09-8	MW09-9	RDL	QC Batch
1,1,2-Trichloroethane	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2630038
Trichloroethylene	ug/L	8.7	<0.1	<0.1	<0.1	1.5	25	0.2	0.1	2630038
Vinyl Chloride	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2630038
p+m-Xylene	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2630038
o-Xylene	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2630038
Xylene (Total)	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2630038
Trichlorofluoromethane (FREON 11)	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2630038
Surrogate Recovery (%)										
4-Bromofluorobenzene	%	107	107	106	108	104	109	101		2630038
D4-1,2-Dichloroethane	%	93	96	95	93	94	96	89		2630038
D8-Toluene	%	100	97	98	97	99	106	93		2630038

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B1E9427
Report Date: 2011/10/04

SNC-Lavalin Environment
Client Project #: 11-910

Sampler Initials: ZT

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		LB0324	LB0325	LB0326	LB0344	LB0345	LB0346	LB0347		
Sampling Date		2011/09/27 09:10	2011/09/27 09:20	2011/09/27 09:30	2011/09/27 09:40	2011/09/27 09:40	2011/09/27 09:50	2011/09/27 10:00		
	Units	MW10-10	MW10-11	MW10-12	MW-10-13	MW-99	MW-10-14	MW-10-15	RDL	QC Batch
Volatiles Organics										
Dichlorodifluoromethane (FREON 12)	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	2630038
Hexane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	2630038
Acetone (2-Propanone)	ug/L	<10	<10	<10	<10	<10	<10	<10	10	2630038
Benzene	ug/L	<0.1	<0.1	<0.1	0.1	0.1	<0.1	<0.1	0.1	2630038
Bromodichloromethane	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2630038
Bromoform	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2630038
Bromomethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	2630038
Carbon Tetrachloride	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2630038
Chlorobenzene	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2630038
Chloroform	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2630038
Dibromochloromethane	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2630038
1,2-Dichlorobenzene	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2630038
1,3-Dichlorobenzene	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2630038
1,4-Dichlorobenzene	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2630038
1,1-Dichloroethane	ug/L	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	0.1	2630038
1,2-Dichloroethane	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2630038
1,1-Dichloroethylene	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2630038
cis-1,2-Dichloroethylene	ug/L	0.3	2.7	<0.1	1.1	1.0	<0.1	0.7	0.1	2630038
trans-1,2-Dichloroethylene	ug/L	<0.1	0.5	<0.1	0.2	0.2	<0.1	<0.1	0.1	2630038
1,2-Dichloropropane	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2630038
cis-1,3-Dichloropropene	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2630038
trans-1,3-Dichloropropene	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2630038
Ethylbenzene	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2630038
Ethylene Dibromide	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2630038
Methylene Chloride(Dichloromethane)	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	2630038
Methyl Isobutyl Ketone	ug/L	<5	<5	<5	<5	<5	<5	<5	5	2630038
Methyl Ethyl Ketone (2-Butanone)	ug/L	<5	<5	<5	<5	<5	<5	<5	5	2630038
Methyl t-butyl ether (MTBE)	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2630038
Styrene	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2630038
1,1,1,2-Tetrachloroethane	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2630038
1,1,2,2-Tetrachloroethane	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2630038
Tetrachloroethylene	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2630038
Toluene	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2630038
1,1,1-Trichloroethane	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2630038

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B1E9427
Report Date: 2011/10/04

SNC-Lavalin Environment
Client Project #: 11-910

Sampler Initials: ZT

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		LB0324	LB0325	LB0326	LB0344	LB0345	LB0346	LB0347		
Sampling Date		2011/09/27 09:10	2011/09/27 09:20	2011/09/27 09:30	2011/09/27 09:40	2011/09/27 09:40	2011/09/27 09:50	2011/09/27 10:00		
	Units	MW10-10	MW10-11	MW10-12	MW-10-13	MW-99	MW-10-14	MW-10-15	RDL	QC Batch
1,1,2-Trichloroethane	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2630038
Trichloroethylene	ug/L	6.5	7.2	<0.1	6.1	5.8	<0.1	4.9	0.1	2630038
Vinyl Chloride	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2630038
p+m-Xylene	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2630038
o-Xylene	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2630038
Xylene (Total)	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2630038
Trichlorofluoromethane (FREON 11)	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2630038
Surrogate Recovery (%)										
4-Bromofluorobenzene	%	101	105	106	103	96	102	91		2630038
D4-1,2-Dichloroethane	%	94	91	95	92	96	107	96		2630038
D8-Toluene	%	101	101	102	101	101	87	77		2630038

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B1E9427
Report Date: 2011/10/04

SNC-Lavalin Environment
Client Project #: 11-910

Sampler Initials: ZT

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		LB0348		LB0349	LB0350	LB0351	LB0352	LB0353		
Sampling Date		2011/09/27 10:10		2011/09/27 10:20	2011/09/27 10:20	2011/09/27 10:30	2011/09/27 10:40	2011/09/27 11:00		
	Units	MW-10-16	QC Batch	MW-10-17	MW-98	MW-10-18	MW-10-19	MW-10-20	RDL	QC Batch
Volatile Organics										
Dichlorodifluoromethane (FREON 12)	ug/L	<0.5	2630038	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	2631106
Hexane	ug/L	<0.5	2630038	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	2631106
Acetone (2-Propanone)	ug/L	<10	2630038	<10	<10	<10	<10	<10	10	2631106
Benzene	ug/L	<0.1	2630038	1.5	1.5	<0.1	<0.1	<0.1	0.1	2631106
Bromodichloromethane	ug/L	<0.1	2630038	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2631106
Bromoform	ug/L	<0.2	2630038	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2631106
Bromomethane	ug/L	<0.5	2630038	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	2631106
Carbon Tetrachloride	ug/L	<0.1	2630038	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2631106
Chlorobenzene	ug/L	<0.1	2630038	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2631106
Chloroform	ug/L	<0.1	2630038	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2631106
Dibromochloromethane	ug/L	<0.2	2630038	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2631106
1,2-Dichlorobenzene	ug/L	<0.2	2630038	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2631106
1,3-Dichlorobenzene	ug/L	<0.2	2630038	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2631106
1,4-Dichlorobenzene	ug/L	<0.2	2630038	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2631106
1,1-Dichloroethane	ug/L	0.3	2630038	0.3	0.3	<0.1	<0.1	<0.1	0.1	2631106
1,2-Dichloroethane	ug/L	<0.2	2630038	0.6	0.6	<0.2	<0.2	<0.2	0.2	2631106
1,1-Dichloroethylene	ug/L	<0.1	2630038	0.2	0.2	<0.1	<0.1	<0.1	0.1	2631106
cis-1,2-Dichloroethylene	ug/L	0.1	2630038	6.0	6.2	<0.1	<0.1	0.3	0.1	2631106
trans-1,2-Dichloroethylene	ug/L	<0.1	2630038	1.1	1.2	<0.1	<0.1	<0.1	0.1	2631106
1,2-Dichloropropane	ug/L	<0.1	2630038	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2631106
cis-1,3-Dichloropropene	ug/L	<0.2	2630038	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2631106
trans-1,3-Dichloropropene	ug/L	<0.2	2630038	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2631106
Ethylbenzene	ug/L	<0.1	2630038	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2631106
Ethylene Dibromide	ug/L	<0.2	2630038	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2631106
Methylene Chloride(Dichloromethane)	ug/L	<0.5	2630038	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	2631106
Methyl Isobutyl Ketone	ug/L	<5	2630038	<5	<5	<5	<5	<5	5	2631106
Methyl Ethyl Ketone (2-Butanone)	ug/L	<5	2630038	<5	<5	<5	<5	<5	5	2631106
Methyl t-butyl ether (MTBE)	ug/L	<0.2	2630038	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2631106
Styrene	ug/L	<0.2	2630038	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2631106
1,1,1,2-Tetrachloroethane	ug/L	<0.1	2630038	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2631106
1,1,2,2-Tetrachloroethane	ug/L	<0.2	2630038	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2631106
Tetrachloroethylene	ug/L	<0.1	2630038	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2631106
Toluene	ug/L	<0.2	2630038	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2631106
1,1,1-Trichloroethane	ug/L	<0.1	2630038	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2631106

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B1E9427
Report Date: 2011/10/04

SNC-Lavalin Environment
Client Project #: 11-910

Sampler Initials: ZT

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		LB0348		LB0349	LB0350	LB0351	LB0352	LB0353		
Sampling Date		2011/09/27 10:10		2011/09/27 10:20	2011/09/27 10:20	2011/09/27 10:30	2011/09/27 10:40	2011/09/27 11:00		
	Units	MW-10-16	QC Batch	MW-10-17	MW-98	MW-10-18	MW-10-19	MW-10-20	RDL	QC Batch
1,1,2-Trichloroethane	ug/L	<0.2	2630038	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2631106
Trichloroethylene	ug/L	<0.1	2630038	9.2	9.9	<0.1	<0.1	0.2	0.1	2631106
Vinyl Chloride	ug/L	<0.2	2630038	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2631106
p+m-Xylene	ug/L	<0.1	2630038	0.3	0.3	0.5	0.2	0.4	0.1	2631106
o-Xylene	ug/L	<0.1	2630038	0.2	0.2	0.2	<0.1	0.2	0.1	2631106
Xylene (Total)	ug/L	<0.1	2630038	0.5	0.5	0.7	0.2	0.6	0.1	2631106
Trichlorofluoromethane (FREON 11)	ug/L	<0.2	2630038	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2631106
Surrogate Recovery (%)										
4-Bromofluorobenzene	%	130	2630038	119	105	116	104	110		2631106
D4-1,2-Dichloroethane	%	96	2630038	99	95	96	113	95		2631106
D8-Toluene	%	104	2630038	102	107	102	129	108		2631106

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B1E9427
Report Date: 2011/10/04

SNC-Lavalin Environment
Client Project #: 11-910

Sampler Initials: ZT

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		LB0360	LB0361	LB0362	LB0363	LB0364		
Sampling Date		2011/09/27 11:10	2011/09/27 11:20	2011/09/27 11:30	2011/09/27 11:40	2011/09/27 12:00		
	Units	MW-10-21	MW-10-22	MW-10-23	MW-10-24	MW-10-25	RDL	QC Batch
Volatile Organics								
Dichlorodifluoromethane (FREON 12)	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	2631106
Hexane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	2631106
Acetone (2-Propanone)	ug/L	<10	<10	<10	<10	<10	10	2631106
Benzene	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2631106
Bromodichloromethane	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2631106
Bromoform	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2631106
Bromomethane	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	2631106
Carbon Tetrachloride	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2631106
Chlorobenzene	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2631106
Chloroform	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2631106
Dibromochloromethane	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2631106
1,2-Dichlorobenzene	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2631106
1,3-Dichlorobenzene	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2631106
1,4-Dichlorobenzene	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2631106
1,1-Dichloroethane	ug/L	<0.1	<0.1	<0.1	0.2	<0.1	0.1	2631106
1,2-Dichloroethane	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2631106
1,1-Dichloroethylene	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2631106
cis-1,2-Dichloroethylene	ug/L	<0.1	<0.1	<0.1	<0.1	0.1	0.1	2631106
trans-1,2-Dichloroethylene	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2631106
1,2-Dichloropropane	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2631106
cis-1,3-Dichloropropene	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2631106
trans-1,3-Dichloropropene	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2631106
Ethylbenzene	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2631106
Ethylene Dibromide	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2631106
Methylene Chloride(Dichloromethane)	ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	2631106
Methyl Isobutyl Ketone	ug/L	<5	<5	<5	<5	<5	5	2631106
Methyl Ethyl Ketone (2-Butanone)	ug/L	<5	<5	<5	<5	<5	5	2631106
Methyl t-butyl ether (MTBE)	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2631106
Styrene	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2631106
1,1,1,2-Tetrachloroethane	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2631106
1,1,2,2-Tetrachloroethane	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2631106
Tetrachloroethylene	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2631106
Toluene	ug/L	0.2	<0.2	0.2	<0.2	<0.2	0.2	2631106
1,1,1-Trichloroethane	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2631106

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B1E9427
Report Date: 2011/10/04

SNC-Lavalin Environment
Client Project #: 11-910

Sampler Initials: ZT

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		LB0360	LB0361	LB0362	LB0363	LB0364		
Sampling Date		2011/09/27 11:10	2011/09/27 11:20	2011/09/27 11:30	2011/09/27 11:40	2011/09/27 12:00		
	Units	MW-10-21	MW-10-22	MW-10-23	MW-10-24	MW-10-25	RDL	QC Batch
1,1,2-Trichloroethane	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2631106
Trichloroethylene	ug/L	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	2631106
Vinyl Chloride	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2631106
p+m-Xylene	ug/L	0.5	0.5	0.6	<0.1	<0.1	0.1	2631106
o-Xylene	ug/L	0.3	0.2	0.3	<0.1	<0.1	0.1	2631106
Xylene (Total)	ug/L	0.8	0.7	0.9	<0.1	<0.1	0.1	2631106
Trichlorofluoromethane (FREON 11)	ug/L	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2631106
Surrogate Recovery (%)								
4-Bromofluorobenzene	%	105	104	104	96	100		2631106
D4-1,2-Dichloroethane	%	95	95	94	88	96		2631106
D8-Toluene	%	102	102	102	105	103		2631106

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B1E9427
Report Date: 2011/10/04

SNC-Lavalin Environment
Client Project #: 11-910

Sampler Initials: ZT

Test Summary

Maxxam ID LB0317
Sample ID MW08-1
Matrix Water

Collected 2011/09/27
Shipped
Received 2011/09/27

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Volatile Organic Compounds in Water	P&T/MS	2630038	N/A	2011/09/30	PAUL RUBINATO

Maxxam ID LB0318
Sample ID MW08-2
Matrix Water

Collected 2011/09/27
Shipped
Received 2011/09/27

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Volatile Organic Compounds in Water	P&T/MS	2630038	N/A	2011/09/30	PAUL RUBINATO

Maxxam ID LB0319
Sample ID MW08-3
Matrix Water

Collected 2011/09/27
Shipped
Received 2011/09/27

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Volatile Organic Compounds in Water	P&T/MS	2630038	N/A	2011/09/30	PAUL RUBINATO

Maxxam ID LB0320
Sample ID MW08-4
Matrix Water

Collected 2011/09/27
Shipped
Received 2011/09/27

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Volatile Organic Compounds in Water	P&T/MS	2630038	N/A	2011/09/30	PAUL RUBINATO

Maxxam Job #: B1E9427
Report Date: 2011/10/04

SNC-Lavalin Environment
Client Project #: 11-910

Sampler Initials: ZT

Test Summary

Maxxam ID LB0321
Sample ID MW08-5
Matrix Water

Collected 2011/09/27
Shipped
Received 2011/09/27

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Volatile Organic Compounds in Water	P&T/MS	2630038	N/A	2011/09/30	PAUL RUBINATO

Maxxam ID LB0322
Sample ID MW09-8
Matrix Water

Collected 2011/09/27
Shipped
Received 2011/09/27

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Volatile Organic Compounds in Water	P&T/MS	2630038	N/A	2011/09/30	PAUL RUBINATO

Maxxam ID LB0323
Sample ID MW09-9
Matrix Water

Collected 2011/09/27
Shipped
Received 2011/09/27

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Volatile Organic Compounds in Water	P&T/MS	2630038	N/A	2011/09/30	PAUL RUBINATO

Maxxam ID LB0324
Sample ID MW10-10
Matrix Water

Collected 2011/09/27
Shipped
Received 2011/09/27

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Volatile Organic Compounds in Water	P&T/MS	2630038	N/A	2011/09/30	PAUL RUBINATO

Maxxam Job #: B1E9427
Report Date: 2011/10/04

SNC-Lavalin Environment
Client Project #: 11-910

Sampler Initials: ZT

Test Summary

Maxxam ID LB0325
Sample ID MW10-11
Matrix Water

Collected 2011/09/27
Shipped
Received 2011/09/27

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Volatile Organic Compounds in Water	P&T/MS	2630038	N/A	2011/09/30	PAUL RUBINATO

Maxxam ID LB0326
Sample ID MW10-12
Matrix Water

Collected 2011/09/27
Shipped
Received 2011/09/27

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Volatile Organic Compounds in Water	P&T/MS	2630038	N/A	2011/09/30	PAUL RUBINATO

Maxxam ID LB0344
Sample ID MW-10-13
Matrix Water

Collected 2011/09/27
Shipped
Received 2011/09/27

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Volatile Organic Compounds in Water	P&T/MS	2630038	N/A	2011/09/30	PAUL RUBINATO

Maxxam ID LB0345
Sample ID MW-99
Matrix Water

Collected 2011/09/27
Shipped
Received 2011/09/27

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Volatile Organic Compounds in Water	P&T/MS	2630038	N/A	2011/09/30	PAUL RUBINATO

Maxxam Job #: B1E9427
Report Date: 2011/10/04

SNC-Lavalin Environment
Client Project #: 11-910

Sampler Initials: ZT

Test Summary

Maxxam ID LB0346
Sample ID MW-10-14
Matrix Water

Collected 2011/09/27
Shipped
Received 2011/09/27

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Volatile Organic Compounds in Water	P&T/MS	2630038	N/A	2011/09/30	PAUL RUBINATO

Maxxam ID LB0347
Sample ID MW-10-15
Matrix Water

Collected 2011/09/27
Shipped
Received 2011/09/27

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Volatile Organic Compounds in Water	P&T/MS	2630038	N/A	2011/10/01	PAUL RUBINATO

Maxxam ID LB0348
Sample ID MW-10-16
Matrix Water

Collected 2011/09/27
Shipped
Received 2011/09/27

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Volatile Organic Compounds in Water	P&T/MS	2630038	N/A	2011/10/01	PAUL RUBINATO

Maxxam ID LB0349
Sample ID MW-10-17
Matrix Water

Collected 2011/09/27
Shipped
Received 2011/09/27

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Volatile Organic Compounds in Water	P&T/MS	2631106	N/A	2011/10/01	PAUL RUBINATO

Maxxam Job #: B1E9427
Report Date: 2011/10/04

SNC-Lavalin Environment
Client Project #: 11-910

Sampler Initials: ZT

Test Summary

Maxxam ID LB0350
Sample ID MW-98
Matrix Water

Collected 2011/09/27
Shipped
Received 2011/09/27

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Volatile Organic Compounds in Water	P&T/MS	2631106	N/A	2011/10/01	PAUL RUBINATO

Maxxam ID LB0351
Sample ID MW-10-18
Matrix Water

Collected 2011/09/27
Shipped
Received 2011/09/27

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Volatile Organic Compounds in Water	P&T/MS	2631106	N/A	2011/10/01	PAUL RUBINATO

Maxxam ID LB0352
Sample ID MW-10-19
Matrix Water

Collected 2011/09/27
Shipped
Received 2011/09/27

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Volatile Organic Compounds in Water	P&T/MS	2631106	N/A	2011/10/01	PAUL RUBINATO

Maxxam ID LB0353
Sample ID MW-10-20
Matrix Water

Collected 2011/09/27
Shipped
Received 2011/09/27

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Volatile Organic Compounds in Water	P&T/MS	2631106	N/A	2011/10/01	PAUL RUBINATO

Maxxam Job #: B1E9427
Report Date: 2011/10/04

SNC-Lavalin Environment
Client Project #: 11-910

Sampler Initials: ZT

Test Summary

Maxxam ID LB0360
Sample ID MW-10-21
Matrix Water

Collected 2011/09/27
Shipped
Received 2011/09/27

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Volatile Organic Compounds in Water	P&T/MS	2631106	N/A	2011/10/01	PAUL RUBINATO

Maxxam ID LB0361
Sample ID MW-10-22
Matrix Water

Collected 2011/09/27
Shipped
Received 2011/09/27

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Volatile Organic Compounds in Water	P&T/MS	2631106	N/A	2011/10/01	PAUL RUBINATO

Maxxam ID LB0362
Sample ID MW-10-23
Matrix Water

Collected 2011/09/27
Shipped
Received 2011/09/27

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Volatile Organic Compounds in Water	P&T/MS	2631106	N/A	2011/10/01	PAUL RUBINATO

Maxxam ID LB0363
Sample ID MW-10-24
Matrix Water

Collected 2011/09/27
Shipped
Received 2011/09/27

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Volatile Organic Compounds in Water	P&T/MS	2631106	N/A	2011/10/01	PAUL RUBINATO

Maxxam Job #: B1E9427
Report Date: 2011/10/04

SNC-Lavalin Environment
Client Project #: 11-910

Sampler Initials: ZT

Test Summary

Maxxam ID LB0364
Sample ID MW-10-25
Matrix Water

Collected 2011/09/27
Shipped
Received 2011/09/27

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Volatile Organic Compounds in Water	P&T/MS	2631106	N/A	2011/10/01	PAUL RUBINATO

Maxxam Job #: B1E9427
Report Date: 2011/10/04

SNC-Lavalin Environment
Client Project #: 11-910

Sampler Initials: ZT

Package 1	11.0°C
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Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Custody seal was not present on the cooler.

All sample bottles contained visual sediment, which was included in the analysis as per the Protocol for Analytical Methods Use in the Assessment of Properties under part XV.1 of the Environmental Protection Act.

Maxxam Job #: B1E9427
Report Date: 2011/10/04

SNC-Lavalin Environment
Client Project #: 11-910

Sampler Initials: ZT

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
2630038	4-Bromofluorobenzene	2011/09/28	113	70 - 130	104	%		
2630038	D4-1,2-Dichloroethane	2011/09/28	92	70 - 130	91	%		
2630038	D8-Toluene	2011/09/28	108	70 - 130	102	%		
2630038	Dichlorodifluoromethane (FREON 12)	2011/09/28	67	60 - 140	<0.5	ug/L	12.9	40
2630038	Hexane	2011/09/28	113	70 - 130	<0.5	ug/L	4.8	40
2630038	Acetone (2-Propanone)	2011/09/28	112	60 - 140	<10	ug/L	24.2	40
2630038	Benzene	2011/09/28	104	70 - 130	<0.1	ug/L	0.3	40
2630038	Bromodichloromethane	2011/09/28	100	70 - 130	<0.1	ug/L	0.3	40
2630038	Bromoform	2011/09/28	103	70 - 130	<0.2	ug/L	0.2	40
2630038	Bromomethane	2011/09/28	125	60 - 140	<0.5	ug/L	12.5	40
2630038	Carbon Tetrachloride	2011/09/28	111	70 - 130	<0.1	ug/L	1.3	40
2630038	Chlorobenzene	2011/09/28	110	70 - 130	<0.1	ug/L	0.08	40
2630038	Chloroform	2011/09/28	104	70 - 130	<0.1	ug/L	0.4	40
2630038	Dibromochloromethane	2011/09/28	108	70 - 130	<0.2	ug/L	0.4	40
2630038	1,2-Dichlorobenzene	2011/09/28	103	70 - 130	<0.2	ug/L	2.4	40
2630038	1,3-Dichlorobenzene	2011/09/28	107	70 - 130	<0.2	ug/L	2.1	40
2630038	1,4-Dichlorobenzene	2011/09/28	110	70 - 130	<0.2	ug/L	2.6	40
2630038	1,1-Dichloroethane	2011/09/28	104	70 - 130	<0.1	ug/L	0.4	40
2630038	1,2-Dichloroethane	2011/09/28	97	70 - 130	<0.2	ug/L	0.3	40
2630038	1,1-Dichloroethylene	2011/09/28	122	70 - 130	<0.1	ug/L	13.9	40
2630038	cis-1,2-Dichloroethylene	2011/09/28	111	70 - 130	<0.1	ug/L	0.2	40
2630038	trans-1,2-Dichloroethylene	2011/09/28	111	70 - 130	<0.1	ug/L	0.8	40
2630038	1,2-Dichloropropane	2011/09/28	96	70 - 130	<0.1	ug/L	0.6	40
2630038	cis-1,3-Dichloropropene	2011/09/28	104	70 - 130	<0.2	ug/L	0.2	40
2630038	trans-1,3-Dichloropropene	2011/09/28	105	70 - 130	<0.2	ug/L	0.04	40
2630038	Ethylbenzene	2011/09/28	104	70 - 130	<0.1	ug/L	0.8	40
2630038	Ethylene Dibromide	2011/09/28	110	70 - 130	<0.2	ug/L	0.1	40
2630038	Methylene Chloride(Dichloromethane)	2011/09/28	102	70 - 130	<0.5	ug/L	1.4	40
2630038	Methyl Isobutyl Ketone	2011/09/28	90	70 - 130	<5	ug/L	0.06	40
2630038	Methyl Ethyl Ketone (2-Butanone)	2011/09/28	86	60 - 140	<5	ug/L	2.9	40
2630038	Methyl t-butyl ether (MTBE)	2011/09/28	104	70 - 130	<0.2	ug/L	0.5	40
2630038	Styrene	2011/09/28	126	70 - 130	<0.2	ug/L	0.9	40
2630038	1,1,1,2-Tetrachloroethane	2011/09/28	115	70 - 130	<0.1	ug/L	0.6	40
2630038	1,1,2,2-Tetrachloroethane	2011/09/28	95	70 - 130	<0.2	ug/L	2.5	40
2630038	Tetrachloroethylene	2011/09/28	124	70 - 130	<0.1	ug/L	1.6	40
2630038	Toluene	2011/09/28	111	70 - 130	<0.2	ug/L	0.7	40
2630038	1,1,1-Trichloroethane	2011/09/28	106	70 - 130	<0.1	ug/L	0.06	40
2630038	1,1,2-Trichloroethane	2011/09/28	108	70 - 130	<0.2	ug/L	1.6	40
2630038	Trichloroethylene	2011/09/28	110	70 - 130	<0.1	ug/L	2.7	40
2630038	Vinyl Chloride	2011/09/28	135	70 - 130	<0.2	ug/L	4.9	40

Maxxam Job #: B1E9427
Report Date: 2011/10/04

SNC-Lavalin Environment
Client Project #: 11-910

Sampler Initials: ZT

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
2630038	p+m-Xylene	2011/09/28	116	70 - 130	<0.1	ug/L	0.3	40
2630038	o-Xylene	2011/09/28	98	70 - 130	<0.1	ug/L	0.2	40
2630038	Trichlorofluoromethane (FREON 11)	2011/09/28	126	70 - 130	<0.2	ug/L	7.1	40
2630038	Xylene (Total)	2011/09/28			<0.1	ug/L		
2631106	4-Bromofluorobenzene	2011/09/29	110	70 - 130	85	%		
2631106	D4-1,2-Dichloroethane	2011/09/29	89	70 - 130	97	%		
2631106	D8-Toluene	2011/09/29	114	70 - 130	96	%		
2631106	Dichlorodifluoromethane (FREON 12)	2011/09/29	71	60 - 140	<0.5	ug/L	18.5	40
2631106	Hexane	2011/09/29	117	70 - 130	<0.5	ug/L	27.3	40
2631106	Acetone (2-Propanone)	2011/09/29	90	60 - 140	<10	ug/L	24.6	40
2631106	Benzene	2011/09/29	105	70 - 130	<0.1	ug/L	13.4	40
2631106	Bromodichloromethane	2011/09/29	100	70 - 130	<0.1	ug/L	11.8	40
2631106	Bromoform	2011/09/29	103	70 - 130	<0.2	ug/L	13.5	40
2631106	Bromomethane	2011/09/29	119	60 - 140	<0.5	ug/L	11.0	40
2631106	Carbon Tetrachloride	2011/09/29	116	70 - 130	<0.1	ug/L	14.2	40
2631106	Chlorobenzene	2011/09/29	112	70 - 130	<0.1	ug/L	13.3	40
2631106	Chloroform	2011/09/29	107	70 - 130	<0.1	ug/L	13.2	40
2631106	Dibromochloromethane	2011/09/29	109	70 - 130	<0.2	ug/L	16.6	40
2631106	1,2-Dichlorobenzene	2011/09/29	104	70 - 130	<0.2	ug/L	12.4	40
2631106	1,3-Dichlorobenzene	2011/09/29	113	70 - 130	<0.2	ug/L	19.1	40
2631106	1,4-Dichlorobenzene	2011/09/29	112	70 - 130	<0.2	ug/L	14.4	40
2631106	1,1-Dichloroethane	2011/09/29	106	70 - 130	<0.1	ug/L	11.5	40
2631106	1,2-Dichloroethane	2011/09/29	96	70 - 130	<0.2	ug/L	10.7	40
2631106	1,1-Dichloroethylene	2011/09/29	145	70 - 130	<0.1	ug/L	14.4	40
2631106	cis-1,2-Dichloroethylene	2011/09/29	111	70 - 130	<0.1	ug/L	15.2	40
2631106	trans-1,2-Dichloroethylene	2011/09/29	115	70 - 130	<0.1	ug/L	14.7	40
2631106	1,2-Dichloropropane	2011/09/29	96	70 - 130	<0.1	ug/L	11.1	40
2631106	cis-1,3-Dichloropropene	2011/09/29	101	70 - 130	<0.2	ug/L	18.7	40
2631106	trans-1,3-Dichloropropene	2011/09/29	103	70 - 130	<0.2	ug/L	18.9	40
2631106	Ethylbenzene	2011/09/29	107	70 - 130	<0.1	ug/L	13.2	40
2631106	Ethylene Dibromide	2011/09/29	107	70 - 130	<0.2	ug/L	15.0	40
2631106	Methylene Chloride(Dichloromethane)	2011/09/29	115	70 - 130	<0.5	ug/L	21.8	40
2631106	Methyl Isobutyl Ketone	2011/09/29	81	70 - 130	<5	ug/L	3.1	40
2631106	Methyl Ethyl Ketone (2-Butanone)	2011/09/29	75	60 - 140	<5	ug/L	13.9	40
2631106	Methyl t-butyl ether (MTBE)	2011/09/29	95	70 - 130	<0.2	ug/L	17.8	40
2631106	Styrene	2011/09/29	129	70 - 130	<0.2	ug/L	4.9	40
2631106	1,1,1,2-Tetrachloroethane	2011/09/29	118	70 - 130	<0.1	ug/L	16.5	40
2631106	1,1,2,2-Tetrachloroethane	2011/09/29	91	70 - 130	<0.2	ug/L	18.4	40
2631106	Tetrachloroethylene	2011/09/29	130	70 - 130	<0.1	ug/L	19.6	40
2631106	Toluene	2011/09/29	116	70 - 130	<0.2	ug/L	16.8	40

Maxxam Job #: B1E9427
Report Date: 2011/10/04

SNC-Lavalin Environment
Client Project #: 11-910

Sampler Initials: ZT

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
2631106	1,1,1-Trichloroethane	2011/09/29	111	70 - 130	<0.1	ug/L	14.9	40
2631106	1,1,2-Trichloroethane	2011/09/29	109	70 - 130	<0.2	ug/L	17.1	40
2631106	Trichloroethylene	2011/09/29	112	70 - 130	<0.1	ug/L	7.6	40
2631106	Vinyl Chloride	2011/09/29	137	70 - 130	<0.2	ug/L	13.8	40
2631106	p+m-Xylene	2011/09/29	119	70 - 130	<0.1	ug/L	13.4	40
2631106	o-Xylene	2011/09/29	99	70 - 130	<0.1	ug/L	16.1	40
2631106	Trichlorofluoromethane (FREON 11)	2011/09/29	143	70 - 130	<0.2	ug/L	11.3	40
2631106	Xylene (Total)	2011/09/29			<0.1	ug/L		

N/A = Not Applicable

RPD = Relative Percent Difference

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

Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

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.

Validation Signature Page

Maxxam Job #: B1E9427



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

A handwritten signature in blue ink, appearing to read "Steve Roberts", is written over a horizontal line.

STEVE ROBERTS, Lab Supervisor, Ottawa

=====

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.

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#2033 SNC-Lavalin Environment	Company Name:		Quotation #:	B04762	MAXXAM JOB #:	BOTTLE ORDER #:
Contact Name:	Tina Stone	Contact Name:		P.O. #:			
Address:	20 Colonnade Rd Suite 110 Ottawa ON K2E 7M6	Address:		Project #:	11-910		283003
Phone:	(613)226-2456 Fax: (613)226-9980	Phone:		Project Name:		CHAIN OF CUSTODY #:	PROJECT MANAGER:
Email:	Christina.Stone@snc-lavalin.com	Email:		Site #:			JULIE CLEMENT
				Sampled By:	Zac Thomas		C#283003-01-01

Regulation 153 (2011) <u>280921</u>		Other Regulations		SPECIAL INSTRUCTIONS		ANALYSIS REQUESTED (Please be specific):		TURNAROUND TIME (TAT) REQUIRED:	
<input type="checkbox"/> Table 1	<input type="checkbox"/> Res/Park	<input type="checkbox"/> Medium/Fine	<input checked="" type="checkbox"/> CCME	<input type="checkbox"/> Sanitary Sewer Bylaw	Regulated Drinking Water? (Y/N) Metals Field Filtered? (Y/N) Volatile Organic Compounds in Water Contains less than 1 cm of silt				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 > 5 days - contact your Project Manager for details.
<input checked="" 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"/> Agri/Other		<input type="checkbox"/> MISA	Municipality					
<input type="checkbox"/> Table			<input type="checkbox"/> PWQO						
<input type="checkbox"/> For RSC					<input type="checkbox"/> Other CCME Community water supplies				<input checked="" type="checkbox"/>

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)	Volatile Organic Compounds in Water	# of Bottles	Comments
1	MW08-1	Sep 27 2011	800	GW	N	X	X	3	
2	MW08-2	Sep 27 2011	810	GW	N	X	X	3	
3	MW08-3	Sep 27 2011	820	GW	N	X	X	3	
4	MW08-4	Sep 27 2011	830	GW	N	X	X	3	
5	MW08-5	Sep 27 2011	840	GW	N	X	X	3	
6	MW09-8	Sep 27 2011	850	GW	N	X	X	3	
7	MW09-9	Sep 27 2011	900	GW	N	X	X	3	
8	MW-10-10	Sep 27 2011	910	GW	N	X	X	3	
9	MW-10-11	Sep 27 2011	920	GW	N	X	X	3	
10	MW-10-12	Sep 27 2011	930	GW	N	X	X	3	

27-Sep-11 13:55
JULIE CLEMENT

B1E9427
JOF OTT-001

REC'D IN OTTAWA

RELINQUISHED BY: (Signature/Print)		Date: (YY/MM/DD)		Time:		RECEIVED BY: (Signature/Print)		Date: (YY/MM/DD)		Time:		# Jars Used and		Laboratory Use Only				
Zac Thomas		11/09/27		1353		Shawn Albert		2011/09/27		1:55pm		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.

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12/11/10

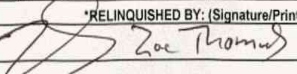
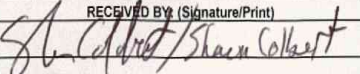


INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#2033 SNC-Lavalin Environment	Company Name:		Quotation #:	B04762	MAXXAM JOB #:	BOTTLE ORDER #:
Contact Name:	Tina Stone	Contact Name:		P.O. #:			 283003
Address:	20 Colonnade Rd Suite 110 Ottawa ON K2E 7M6	Address:		Project #:	11-910	CHAIN OF CUSTODY #:	PROJECT MANAGER:
Phone:	(613)226-2456 Fax: (613)226-9980	Phone:		Project Name:		 C#283003-02-01	JULIE CLEMENT
Email:	Christina.Stone@sncilavalin.com	Email:		Site #:			
				Sampled By:	Zac Thomas		

Regulation 153 (2011)		Other Regulations		SPECIAL INSTRUCTIONS		ANALYSIS REQUESTED (Please be specific):										TURNAROUND TIME (TAT) REQUIRED:	
<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 type="checkbox"/> Medium/Fine <input type="checkbox"/> Coarse <input type="checkbox"/> For RSC	<input checked="" type="checkbox"/> CCME <input type="checkbox"/> Reg. 558 <input type="checkbox"/> MISA <input type="checkbox"/> PWQO <input type="checkbox"/> Other <i>CCME Community water supplies</i>	<input type="checkbox"/> Sanitary Sewer Bylaw <input type="checkbox"/> Storm Sewer Bylaw Municipality: _____		<div>Regulated Drinking Water? (Y/N) <input type="checkbox"/></div> <div>Metals Field Filtered? (Y/N) <input type="checkbox"/></div> <div>Volatile Organic Compounds in Water <input checked="" type="checkbox"/></div> <div>Contaminants 1551 <input checked="" type="checkbox"/></div> <div>from 1551 <input checked="" type="checkbox"/></div>										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 > 5 days - contact your Project Manager for details. Job Specific Rush TAT (if applies to entire submission) Date Required: _____ Time Required: <input type="checkbox"/> Rush Confirmation Number: _____ (call lab for #)	



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)	Volatile Organic Compounds in Water	Contaminants 1551	from 1551									# of Bottles	Comments
1	MW-10-13	Sept 27 2011	940	GW	UU	X	X											3	
2	MW-99	Sept 27 2011	940	GW	UU	X	X											3	
3	MW-10-14	Sept 27 2011	950	GW	UU	X	X											3	
4	MW-10-15	Sept 27 2011	1000	GW	UU	X	X											3	
5	MW-10-16	Sept 27 2011	1010	GW	UU	X	X											3	
6	MW-10-17	Sept 27 2011	1020	GW	UU	X	X											3	
7	MW-98	Sept 27 2011	1020	GW	UU	X	X											3	
8	MW-10-18	Sept 27 2011	1030	GW	UU	X	X											3	
9	MW-10-19	Sept 27 2011	1040	GW	UU	X	X											3	REC'D IN OTTAWA
10	MW-10-20	Sept 27 2011	1100	GW	UU	X	X											3	

RELINQUISHED BY: (Signature/Print)		Date: (YY/MM/DD)	Time:	RECEIVED BY: (Signature/Print)		Date: (YY/MM/DD)	Time:	# Jars Used and	Laboratory Use Only				
		11/09/27	1353			201/09/27	1:55pm	Not Submitted	Time Sensitive	Temperature (°C) on Receipt	Custody Seal	Yes	No
										12/11/10	Present		<input checked="" type="checkbox"/>
											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.
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INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#2033 SNC-Lavalin Environment	Company Name:		Quotation #:	B04762	MAXXAM JOB #:	BOTTLE ORDER #:
Contact Name:	Tina Stone	Contact Name:		P.O. #:			
Address:	20 Colonnade Rd Suite 110 Ottawa ON K2E 7M6	Address:		Project #:	11-910	CHAIN OF CUSTODY #:	PROJECT MANAGER:
Phone:	(613)226-2456 Fax: (613)226-9980	Phone:		Project Name:			JULIE CLEMENT
Email:	Christina.Stone@snc-lavalin.com	Email:		Site #:		C#283003-03-01	
				Sampled By:	Zac Thomas		

Regulation 153 (2011)		Other Regulations		SPECIAL INSTRUCTIONS		ANALYSIS REQUESTED (Please be specific):										TURNAROUND TIME (TAT) REQUIRED:			
<input type="checkbox"/> Table 1 <input checked="" type="checkbox"/> Table 2 <input type="checkbox"/> Table 3 <input type="checkbox"/> Table	<input type="checkbox"/> Res/Park <input type="checkbox"/> Ind/Comm <input type="checkbox"/> Agri/Other <input type="checkbox"/> For RSC	<input checked="" type="checkbox"/> CCME <input type="checkbox"/> Reg. 558 <input type="checkbox"/> MISA <input type="checkbox"/> PWQO <input type="checkbox"/> Other CCME Community water supplies	<input type="checkbox"/> Sanitary Sewer Bylaw <input type="checkbox"/> Storm Sewer Bylaw Municipality													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 > 5 days - contact your Project Manager for details. Job Specific Rush TAT (if applies to entire submission) Date Required: Time Required: <input type="checkbox"/> Rush Confirmation Number: (call lab for #)			
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)	Volatile Organic Compounds in Water								# of Bottles	Comments			
1	MW-10-21	Sept 27 2011	1110	GW	N	X	X								3				
2	MW-10-22	Sept 27 2011	1120	GW	N	X	X								3				
3	MW-10-23	Sept 27 2011	1130	GW	N	X	X								3				
4	MW-10-24	Sept 27 2011	1140	GW	N	X	X								3				
5	MW-10-25	Sept 27 2011	1200	GW	N	X	X								3				
6				GW															
7				GW															
8				GW															
9																REC'D IN OTTAWA			
10																			

RELINQUISHED BY: (Signature/Print)		Date: (YY/MM/DD)	Time:	RECEIVED BY: (Signature/Print)		Date: (YY/MM/DD)	Time:	# Jars Used and	Laboratory Use Only				
Zac Thomas		11/09/27	1353	Shirley Collet / Shawn Collet		2011/09/27	1:55pm	Not Submitted	Time Sensitive	Temperature (°C) on Receipt	Custody Seal	Yes	No
										12/11/10	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.

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ON ICE

APPENDIX C

QUALITY ASSURANCE AND QUALITY CONTROL

TABLE C.1 FIELD RPD CALCULATIONS
Groundwater Samples - Monitoring Wells
NCC Property Asset No. 97390, Leirtrim Road, Ottawa, ON

SLE Sample No.		RPD Alert Limits	MW-10-13	RDL	MW-99 Field Duplicate of MW-10-13	RDL	RPD
	Units						
<i>Laboratory Sample No.</i>	na	na	<i>JT2511</i>	na	<i>JT2512</i>	na	na
<i>Sampling Date</i>	na	na	<i>7-Jun-11</i>	na	<i>7-Jun-11</i>	na	na
<i>Monitoring Well No.</i>	na	na	<i>MW-10-13</i>	na	<i>MW-10-13</i>	na	na
Acetone	µg/L	30%	<	10	<	10	nc
Benzene	µg/L	30%	<	0.1	<	0.1	nc
Bromodichloromethane	µg/L	30%	<	0.1	<	0.1	nc
Bromoform	µg/L	30%	<	0.2	<	0.2	nc
Bromomethane	µg/L	30%	<	0.5	<	0.5	nc
Carbon Tetrachloride	µg/L	30%	<	0.1	<	0.1	nc
Chlorobenzene	µg/L	30%	<	0.1	<	0.1	nc
Chloroform	µg/L	30%	<	0.1	<	0.1	nc
Dibromochloromethane	µg/L	30%	<	0.2	<	0.2	nc
1,2-Dichlorobenzene	µg/L	30%	<	0.2	<	0.2	nc
1,3-Dichlorobenzene	µg/L	30%	<	0.2	<	0.2	nc
1,4-Dichlorobenzene	µg/L	30%	<	0.2	<	0.2	nc
Dichlorodifluoromethane (FREON 11)	µg/L	30%	<	0.5	<	0.5	nc
1,1-Dichloroethane	µg/L	30%	<	0.1	<	0.1	nc
1,2-Dichloroethane	µg/L	30%	<	0.2	<	0.2	nc
1,1-Dichloroethylene	µg/L	30%	<	0.1	<	0.1	nc
cis-1,2-Dichloroethylene	µg/L	30%	0.3	0.1	0.2	0.1	nc
trans-1,2-Dichloroethylene	µg/L	30%	<	0.1	<	0.1	nc
1,2-Dichloropropane	µg/L	30%	<	0.1	<	0.1	nc
cis-1,3-Dichloropropene	µg/L	30%	<	0.2	<	0.2	nc
trans-1,3-Dichloropropene	µg/L	30%	<	0.2	<	0.2	nc
1,3-Dichloropropene	µg/L	30%	<	0.2	<	0.2	nc
Ethylbenzene	µg/L	30%	<	0.1	<	0.1	nc
Ethylene Dibromide	µg/L	30%	<	0.2	<	0.2	nc
Hexane	µg/L	30%	<	0.5	<	0.5	nc
Methyl Ethyl Ketone	µg/L	30%	<	5	<	5	nc
Methyl Isobutyl Ketone	µg/L	30%	<	5	<	5	nc
Methyl t-butyl ether	µg/L	30%	<	0.2	<	0.2	nc
Methylene Chloride	µg/L	30%	<	0.5	<	0.5	nc
Styrene	µg/L	30%	<	0.2	<	0.2	nc
1,1,1,2-Tetrachloroethane	µg/L	30%	<	0.1	<	0.1	nc
1,1,2,2-Tetrachloroethane	µg/L	30%	<	0.2	<	0.2	nc
Tetrachloroethylene	µg/L	30%	<0.4	0.4	<0.4	0.4	nc
Toluene	µg/L	30%	<	0.2	<	0.2	nc
1,1,1-Trichloroethane	µg/L	30%	<	0.1	<	0.1	nc
1,1,2-Trichloroethane	µg/L	30%	<	0.2	<	0.2	nc
Trichloroethylene	µg/L	30%	2.4	0.1	1.9	0.1	23%
Trichlorofluoromethane (FREON 11)	µg/L	30%	<	0.2	<	0.2	nc
p+m-Xylene	µg/L	30%	<	0.1	<	0.1	nc
o-Xylene	µg/L	30%	<	0.1	<	0.1	nc
Xylene (Total)	µg/L	30%	<	0.1	<	0.1	nc

RDL reportable detection limit
 < less than RDL
 RPD Relative Percent Difference
 nc RPD not calculable (when one or both results are equal to or less than 5X RDL)
 na not applicable
 µg/L micrograms per litre
BOLD Exceeds alert limit
¹ United States Environmental Protection Agency (USEPA), 1996. "Region I, EPA- New England Data Validation Functional Guidelines for Evaluating Environmental Analyses." December 1996.

TABLE C.1 FIELD RPD CALCULATIONS
Groundwater Samples - Monitoring Wells
NCC Property Asset No. 97390, Leirtrim Road, Ottawa,

SLE Sample No.		RPD Alert Limits	MW-10-13	RDL	MW-99 Field Duplicate of MW-10-13	RDL	RPD
	Units						
Laboratory Sample No.	na	na	<i>LB0344</i>	na	<i>LB0345</i>	na	na
Sampling Date	na	na	<i>27-Sep-11</i>	na	<i>27-Sep-11</i>	na	na
Monitoring Well No.	na	na	<i>MW-10-13</i>	na	<i>MW-99</i>	na	na
Acetone	µg/L	30%	<	10	<	10	nc
Benzene	µg/L	30%	0.1	0.1	0.1	0.1	nc
Bromodichloromethane	µg/L	30%	<	0.1	<	0.1	nc
Bromoform	µg/L	30%	<	0.2	<	0.2	nc
Bromomethane	µg/L	30%	<	0.5	<	0.5	nc
Carbon Tetrachloride	µg/L	30%	<	0.1	<	0.1	nc
Chlorobenzene	µg/L	30%	<	0.1	<	0.1	nc
Chloroform	µg/L	30%	<	0.1	<	0.1	nc
Dibromochloromethane	µg/L	30%	<	0.2	<	0.2	nc
1,2-Dichlorobenzene	µg/L	30%	<	0.2	<	0.2	nc
1,3-Dichlorobenzene	µg/L	30%	<	0.2	<	0.2	nc
1,4-Dichlorobenzene	µg/L	30%	<	0.2	<	0.2	nc
Dichlorodifluoromethane (FREON 11)	µg/L	30%	<	0.5	<	0.5	nc
1,1-Dichloroethane	µg/L	30%	<	0.1	0.1	0.1	nc
1,2-Dichloroethane	µg/L	30%	<	0.2	<	0.2	nc
1,1-Dichloroethylene	µg/L	30%	<	0.1	<	0.1	nc
cis-1,2-Dichloroethylene	µg/L	30%	1.1	0.1	1.0	0.1	10%
trans-1,2-Dichloroethylene	µg/L	30%	0.2	0.1	0.2	0.1	nc
1,2-Dichloropropane	µg/L	30%	<	0.1	<	0.1	nc
cis-1,3-Dichloropropene	µg/L	30%	<	0.2	<	0.2	nc
trans-1,3-Dichloropropene	µg/L	30%	<	0.2	<	0.2	nc
1,3-Dichloropropene	µg/L	30%	<	0.2	<	0.2	nc
Ethylbenzene	µg/L	30%	<	0.1	<	0.1	nc
Ethylene Dibromide	µg/L	30%	<	0.2	<	0.2	nc
Hexane	µg/L	30%	<	0.5	<	0.5	nc
Methyl Ethyl Ketone	µg/L	30%	<	5	<	5	nc
Methyl Isobutyl Ketone	µg/L	30%	<	5	<	5	nc
Methyl t-butyl ether	µg/L	30%	<	0.2	<	0.2	nc
Methylene Chloride	µg/L	30%	<	0.5	<	0.5	nc
Styrene	µg/L	30%	<	0.2	<	0.2	nc
1,1,1,2-Tetrachloroethane	µg/L	30%	<	0.1	<	0.1	nc
1,1,2,2-Tetrachloroethane	µg/L	30%	<	0.2	<	0.2	nc
Tetrachloroethylene	µg/L	30%	<	0.1	<	0.1	nc
Toluene	µg/L	30%	<	0.2	<	0.2	nc
1,1,1-Trichloroethane	µg/L	30%	<	0.1	<	0.1	nc
1,1,2-Trichloroethane	µg/L	30%	<	0.2	<	0.2	nc
Trichloroethylene	µg/L	30%	6.1	0.1	5.8	0.1	5%
Trichlorofluoromethane (FREON 11)	µg/L	30%	<	0.2	<	0.2	nc
p+m-Xylene	µg/L	30%	<	0.1	<	0.1	nc
o-Xylene	µg/L	30%	<	0.1	<	0.1	nc
Xylene (Total)	µg/L	30%	<	0.1	<	0.1	nc

RDL reportable detection limit
 < less than RDL
 RPD Relative Percent Difference
 nc RPD not calculable (when one or both results are equal to or less than 5X RDL)
 na not applicable
 µg/L micrograms per litre
BOLD Exceeds alert limit
¹ United States Environmental Protection Agency (USEPA), 1996. "Region I, EPA- New England Data Validation Functional Guidelines for Evaluating Environmental Analyses." December 1996.

TABLE C.1 FIELD RPD CALCULATIONS
Groundwater Samples - Monitoring Wells
NCC Property Asset No. 97390, Leitrim Road, Ottawa,

SLE Sample No.		RPD Alert Limits	MW-10-17	RDL	MW-98 Field Duplicate of MW-10-17	RDL	RPD
	Units						
<i>Laboratory Sample No.</i>	na	na	<i>JT2516</i>	na	<i>JT2517</i>	na	na
<i>Sampling Date</i>	na	na	<i>7-Jun-11</i>	na	<i>7-Jun-11</i>	na	na
<i>Monitoring Well No.</i>	na	na	<i>MW-10-17</i>	na	<i>MW-10-17</i>	na	na
Acetone	µg/L	30%	<	0.5	<	0.5	nc
Benzene	µg/L	30%	1.5	0.5	1.5	0.5	nc
Bromodichloromethane	µg/L	30%	<	10	<	10	nc
Bromoform	µg/L	30%	<	0.1	<	0.1	nc
Bromomethane	µg/L	30%	<	0.1	<	0.1	nc
Carbon Tetrachloride	µg/L	30%	<	0.2	<	0.2	nc
Chlorobenzene	µg/L	30%	<	0.5	<	0.5	nc
Chloroform	µg/L	30%	<	0.1	<	0.1	nc
Dibromochloromethane	µg/L	30%	<	0.1	<	0.1	nc
1,2-Dichlorobenzene	µg/L	30%	<	0.1	<	0.1	nc
1,3-Dichlorobenzene	µg/L	30%	<	0.2	<	0.2	nc
1,4-Dichlorobenzene	µg/L	30%	<	0.2	<	0.2	nc
Dichlorodifluoromethane (FREON 11)	µg/L	30%	<	0.2	<	0.2	nc
1,1-Dichloroethane	µg/L	30%	0.2	0.2	0.2	0.2	nc
1,2-Dichloroethane	µg/L	30%	0.5	0.1	0.5	0.1	nc
1,1-Dichloroethylene	µg/L	30%	0.1	0.2	0.1	0.2	nc
cis-1,2-Dichloroethylene	µg/L	30%	5.0	0.1	5.0	0.1	0%
trans-1,2-Dichloroethylene	µg/L	30%	1.1	0.1	1.1	0.1	0%
1,2-Dichloropropane	µg/L	30%	<	0.1	<	0.1	nc
cis-1,3-Dichloropropene	µg/L	30%	<	0.1	<	0.1	nc
trans-1,3-Dichloropropene	µg/L	30%	<	0.2	<	0.2	nc
1,3-Dichloropropene	µg/L	30%	<	0.2	<	0.2	nc
Ethylbenzene	µg/L	30%	<	0.1	<	0.1	nc
Ethylene Dibromide	µg/L	30%	<	0.2	<	0.2	nc
Hexane	µg/L	30%	<	0.5	<	0.5	nc
Methyl Ethyl Ketone	µg/L	30%	<	5	<	5	nc
Methyl Isobutyl Ketone	µg/L	30%	<	5	<	5	nc
Methyl t-butyl ether	µg/L	30%	<	0.2	<	0.2	nc
Methylene Chloride	µg/L	30%	<	0.2	<	0.2	nc
Styrene	µg/L	30%	<	0.1	<	0.1	nc
1,1,1,2-Tetrachloroethane	µg/L	30%	<	0.2	<	0.2	nc
1,1,2,2-Tetrachloroethane	µg/L	30%	<	0.1	<	0.1	nc
Tetrachloroethylene	µg/L	30%	<0.4	0.4	<0.4	0.4	nc
Toluene	µg/L	30%	<	0.1	<	0.1	nc
1,1,1-Trichloroethane	µg/L	30%	<	0.2	<	0.2	nc
1,1,2-Trichloroethane	µg/L	30%	<	0.1	<	0.1	nc
Trichloroethylene	µg/L	30%	10	0.2	10	0.2	0%
Trichlorofluoromethane (FREON 11)	µg/L	30%	<	0.1	<	0.1	nc
p+m-Xylene	µg/L	30%	<	0.1	<	0.1	nc
o-Xylene	µg/L	30%	<	0.1	<	0.1	nc
Xylene (Total)	µg/L	30%	<	0.2	<	0.2	nc

RDL reportable detection limit
 < less than RDL
 RPD Relative Percent Difference
 nc RPD not calculable (when one or both results are equal to or less than 5X RDL)
 na not applicable
 µg/L micrograms per litre
BOLD Exceeds alert limit
¹ United States Environmental Protection Agency (USEPA), 1996. "Region I, EPA- New England Data Validation Functional Guidelines for Evaluating Environmental Analyses." December 1996.

TABLE C.1 FIELD RPD CALCULATIONS
Groundwater Samples - Monitoring Wells
NCC Property Asset No. 97390, Leitrim Road, Ottawa,

SLE Sample No.		RPD Alert Limits	MW-10-17	RDL	MW-98 Field Duplicate of MW-10-17	RDL	RPD
	Units						
<i>Laboratory Sample No.</i>	na	na	<i>LB0349</i>	na	<i>LB0350</i>	na	na
<i>Sampling Date</i>	na	na	<i>27-Sep-11</i>	na	<i>27-Sep-11</i>	na	na
<i>Monitoring Well No.</i>	na	na	<i>MW-10-17</i>	na	<i>MW-98</i>	na	na
Acetone	µg/L	30%	<	0.5	<	0.5	nc
Benzene	µg/L	30%	1.5	0.5	1.5	0.5	nc
Bromodichloromethane	µg/L	30%	<	10	<	10	nc
Bromoform	µg/L	30%	<	0.1	<	0.1	nc
Bromomethane	µg/L	30%	<	0.1	<	0.1	nc
Carbon Tetrachloride	µg/L	30%	<	0.2	<	0.2	nc
Chlorobenzene	µg/L	30%	<	0.5	<	0.5	nc
Chloroform	µg/L	30%	<	0.1	<	0.1	nc
Dibromochloromethane	µg/L	30%	<	0.1	<	0.1	nc
1,2-Dichlorobenzene	µg/L	30%	<	0.1	<	0.1	nc
1,3-Dichlorobenzene	µg/L	30%	<	0.2	<	0.2	nc
1,4-Dichlorobenzene	µg/L	30%	<	0.2	<	0.2	nc
Dichlorodifluoromethane (FREON 11)	µg/L	30%	<	0.2	<	0.2	nc
1,1-Dichloroethane	µg/L	30%	0.3	0.2	0.3	0.2	nc
1,2-Dichloroethane	µg/L	30%	0.6	0.1	0.6	0.1	0%
1,1-Dichloroethylene	µg/L	30%	0.2	0.2	0.2	0.2	nc
cis-1,2-Dichloroethylene	µg/L	30%	6.0	0.1	6.2	0.1	3%
trans-1,2-Dichloroethylene	µg/L	30%	1.1	0.1	1.2	0.1	9%
1,2-Dichloropropane	µg/L	30%	<	0.1	<	0.1	nc
cis-1,3-Dichloropropene	µg/L	30%	<	0.1	<	0.1	nc
trans-1,3-Dichloropropene	µg/L	30%	<	0.2	<	0.2	nc
1,3-Dichloropropene	µg/L	30%	<	0.2	<	0.2	nc
Ethylbenzene	µg/L	30%	<	0.1	<	0.1	nc
Ethylene Dibromide	µg/L	30%	<	0.2	<	0.2	nc
Hexane	µg/L	30%	<	0.5	<	0.5	nc
Methyl Ethyl Ketone	µg/L	30%	<	5	<	5	nc
Methyl Isobutyl Ketone	µg/L	30%	<	5	<	5	nc
Methyl t-butyl ether	µg/L	30%	<	0.2	<	0.2	nc
Methylene Chloride	µg/L	30%	<	0.2	<	0.2	nc
Styrene	µg/L	30%	<	0.1	<	0.1	nc
1,1,1,2-Tetrachloroethane	µg/L	30%	<	0.2	<	0.2	nc
1,1,2,2-Tetrachloroethane	µg/L	30%	<	0.1	<	0.1	nc
Tetrachloroethylene	µg/L	30%	<	0.2	<	0.2	nc
Toluene	µg/L	30%	<	0.1	<	0.1	nc
1,1,1-Trichloroethane	µg/L	30%	<	0.2	<	0.2	nc
1,1,2-Trichloroethane	µg/L	30%	<	0.1	<	0.1	nc
Trichloroethylene	µg/L	30%	9.2	0.2	9.9	0.2	7%
Trichlorofluoromethane (FREON 11)	µg/L	30%	<	0.1	<	0.1	nc
p+m-Xylene	µg/L	30%	0.3	0.1	0.3	0.1	nc
o-Xylene	µg/L	30%	0.2	0.1	0.2	0.1	nc
Xylene (Total)	µg/L	30%	0.5	0.2	0.5	0.2	nc

RDL reportable detection limit
 < less than RDL
 RPD Relative Percent Difference
 nc RPD not calculable (when one or both results are equal to or less than 5X RDL)
 na not applicable
 µg/L micrograms per litre
BOLD Exceeds alert limit
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